



Delineation of the MSFD Article 4 marine regions and subregions

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1 MSFD Article 4 marine regions and subregions

In the Marine Strategy Framework Directive¹ (MSFD) four marine regions are listed (art. 4). The North-east Atlantic Ocean and Mediterranean Sea marine regions are both further divided into four subregions each.

Marine regions and subregions include:

- **Baltic Sea**
- **North-east Atlantic Ocean**
 - The Greater North Sea, including the Kattegat and the English Channel
 - The Celtic Seas
 - The Bay of Biscay and the Iberian Coast
 - Macaronesia
- **Mediterranean Sea**
 - The Western Mediterranean Sea
 - The Adriatic Sea
 - The Ionian Sea and the Central Mediterranean Sea
 - The Aegean-Levantine Sea
- **The Black Sea**

The MSFD does not specify the boundaries of the marine regions and subregions and no formal definition of the marine regions and subregions exists elsewhere. This document provides details on a proposed delineation of MSFD Marine regions and subregions, as well as the information sources used.

This document has been developed to support DG Environment and EU Member States in their implementation of the MSFD. It represents the current state of understanding of the marine regions, subregions and is subject to amendment in the light of new information which may be received.

The primary aim of this document is to describe the geometric delineation of the marine regions and subregions. The secondary aim is to establish a pragmatic overview/common framework/common understanding of marine boundaries and thus aid streamlining of obligations under EU legislation e.g. coordination between Member States, work establishment of monitoring programmes, establishment of programmes of measures, EEA indicator and assessment efforts and 'Research and Technological Development' (RTD) initiatives to be as relevant as possible for policy processes aiming at implementing an ecosystem-based approach to management. Lastly, the maps presented in this document can aid the harmonisation between regions as required under other EU legislation and policies, by Regional Sea Conventions, ICES Ecoregions² and other regional delineations. The aim is not to pre-empt any official discussions on maritime boundaries under UNCLOS.

The delineation has been developed since 2010 based on multiple inputs from Member State representatives participating in groups defined under the MSFD Common Implementation Strategy, reporting under the MSFD Initial Assessment, ICES advice and Marine Regions³. The process has especially been developed under WG DIKE (Working Group on Data, Information and Knowledge Exchange) through documents DIKE 3/2011/06 from 5-6th September 2011, DIKE 4/2011/05 from 7-8th November 2011, DIKE 5/2012/08 from 12-13th March 2012, DIKE TG1/2012/04 from 4th July 2012 and, lastly, DIKE 6/2012/11 from 30-31th October 2012. Since then it has been developed through cooperation between DG ENV, EEA and the ETC-ICM (via ICES as an ETC-ICM partner).

The boundaries between marine regions and subregions have, to the extent possible, been harmonised with existing boundaries established under the Regional Sea Conventions, the biogeographic boundaries established under the Habitats Directive and the boundaries of marine waters reported by EU Member States under the Marine Strategy Framework Directive. The ICES ecoregions (International Council for the Exploration of the Sea) are being aligned with the MSFD region and subregion boundaries.

The inner boundary of all regions and subregions has used the "EEA coastline for analysis"⁴ available at (<http://www.eea.europa.eu/data-and-maps/data/eea-coastline-for-analysis/>); this is a practical solution

because the MSFD inner boundary formally follows that defined for coastal waters under the Water Framework Directive, for which a consistent boundary is not yet available.

For delineating subregions in the North-east Atlantic Ocean region, information on Member States' marine waters, where Member States have and/or exercise jurisdictional rights, has been used, based on submissions of the marine waters under the MSFD when these have been made available by the individual Member States as part of their 2012 reporting (Table 1).

Table 1 Data sources for MS marine waters in the NE Atlantic Ocean used in the document

Country	MS reporting MSFD Article 8, 9 and 10 (MS)	Reporting date (YYYYMMDD)
France	MS	20130607
Ireland	MS	20130410
Portugal	MS ^c	20150109 ^c
Spain	MS ^a	20121015 ^a
United Kingdom	MS	20130109

^a Spain have only submitted assessment areas and not explicit marine waters polygons. The extent of their marine waters is based on the extent of their assessment areas.

^c Portugal has submitted polygon data on their territorial sea, EEZ and extended continental shelf claim. In the reported polygons, the division by MSFD regions and subregions are not indicated.

1.1 Disclaimer

Please note that neither the European Commission, the European Environment Agency nor its European Topic Centre for Inland, Coastal and Marine waters has competence in the geographical demarcation of EU Member States' borders. This is also the case for establishing the limits of the continental shelf of EU Member States, where international law applies. According to UNCLOS art. 76 (8), only the coastal State is competent to establish the outer limits of its continental shelf. It is to act on the basis of the recommendations of the Commission on the Limits of the Continental Shelf.

The maps and tables provided in this report and resulting from the evaluation of the available datasets are not intended to influence or question any ongoing negotiations occurring in UNCLOS or jurisdictional issues regarding maritime boundaries pertaining to EU Member States or to non-EU countries.

Please note that non-EU countries have not been consulted in the preparation of these maps. Some claims by EU-Member States to marine waters, particularly to Continental Shelf areas, may be contested by non-EU-countries.

Neither the European Commission, the European Environment Agency nor its European Topic Centre for Inland, Coastal and Marine waters is responsible for the use that may be made of the information provided in the tables and maps in this report. As such, there is a disclaimer associated to all maps: The maps serve for information purposes only, and may not and shall not be construed as an official map representing maritime borders in accordance with international law.

The map(s) are still “under development” and will continue to be so in the coming years. EEA will continue to update the maps as and when new information is made available by Member States.

1.2 Delineation of MSFD marine regions

In this section the delineation of the four MSFD marine regions are described (Figure 1). The 'Baltic Sea', 'Black Sea' and 'Mediterranean Sea' are all defined to a large extent by the coastline of the surrounding countries. For the North-east Atlantic Ocean, the region boundary follows that of the OSPAR Convention. However, for the North-east Atlantic Ocean marine region two adjustments has been made compared to the OSPAR Convention area. Firstly, it extends further south where the marine waters (EEZ and Continental Shelf areas) of Portugal and Spain extend beyond the OSPAR boundary. Secondly, the boundary in the Kattegat has been adjusted as described in section 1.2.1.

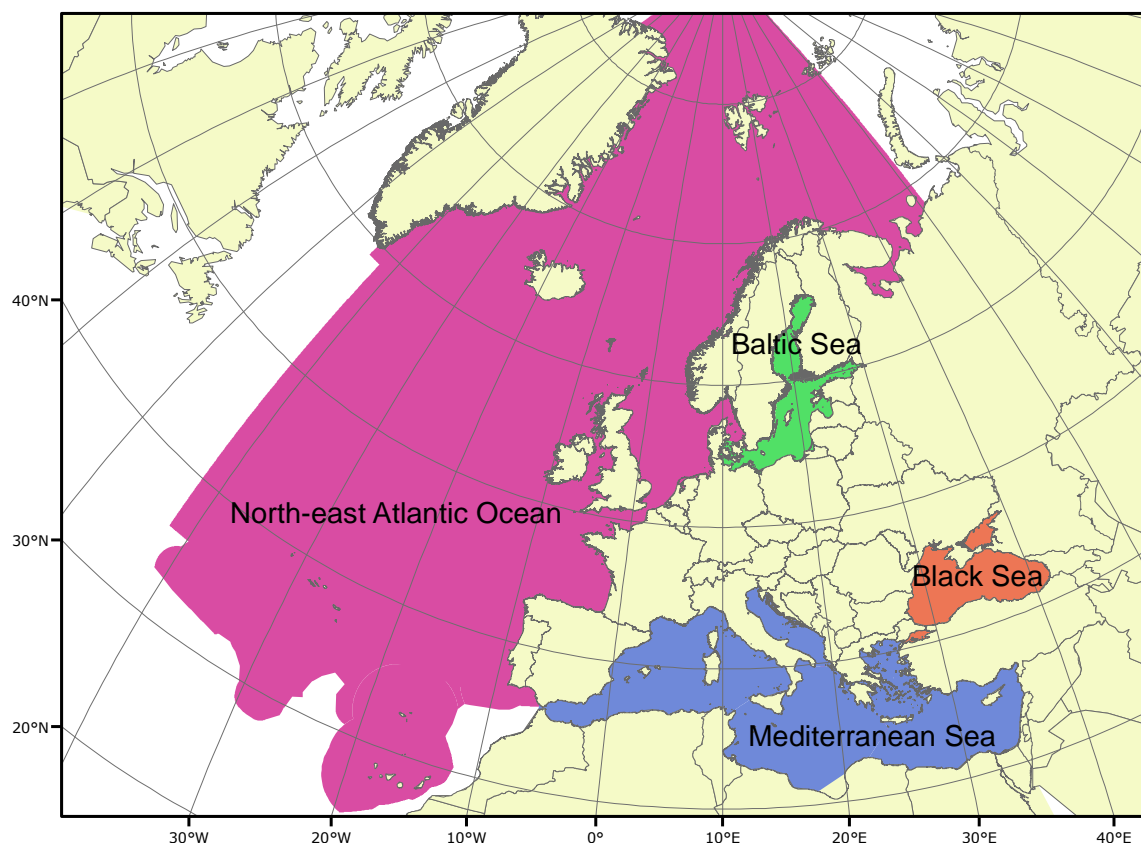


Figure 1 Representation of the marine regions of MSFD Article 4.

1.2.1 Border between 'Baltic Sea' and 'North-east Atlantic Ocean' MSFD marine regions

The border between 'Baltic Sea' and 'North-east Atlantic Ocean' is based on a bilateral agreement between Denmark and Sweden. It was announced by Denmark at the Habitats Committee on 25/4 2012⁵. In the Sound area of the Kattegat the border follows the Øresund/Öresund bridge between Denmark and Sweden and in Copenhagen harbour, the border is defined by a lock just north of the Sjællands-bridge, connecting the positions shown in Table 2 and Figure 2.

Table 2 Delineation between ‘Baltic Sea’ and ‘North-east Atlantic Ocean’ MSFD marine regions: positions in The Sound, Kattegat.

No	Name	Latitude	Longitude
1	Sweden	55° 33' 56.1'' N	12° 53' 30.3'' E
2	Östra Pepparholmen	55° 35' 20.1'' N	12° 46' 37.4'' E
3	Västra Pepparholmen	55° 36' 40.2'' N	12° 43' 35.0'' E
4	Denmark	55° 37' 47.8'' N	12° 40' 49.6'' E
5	Amager	55° 38' 33.6'' N	12° 33' 09.1'' E
6	Copenhagen	55° 38' 36.3'' N	12° 33' 02.0'' E

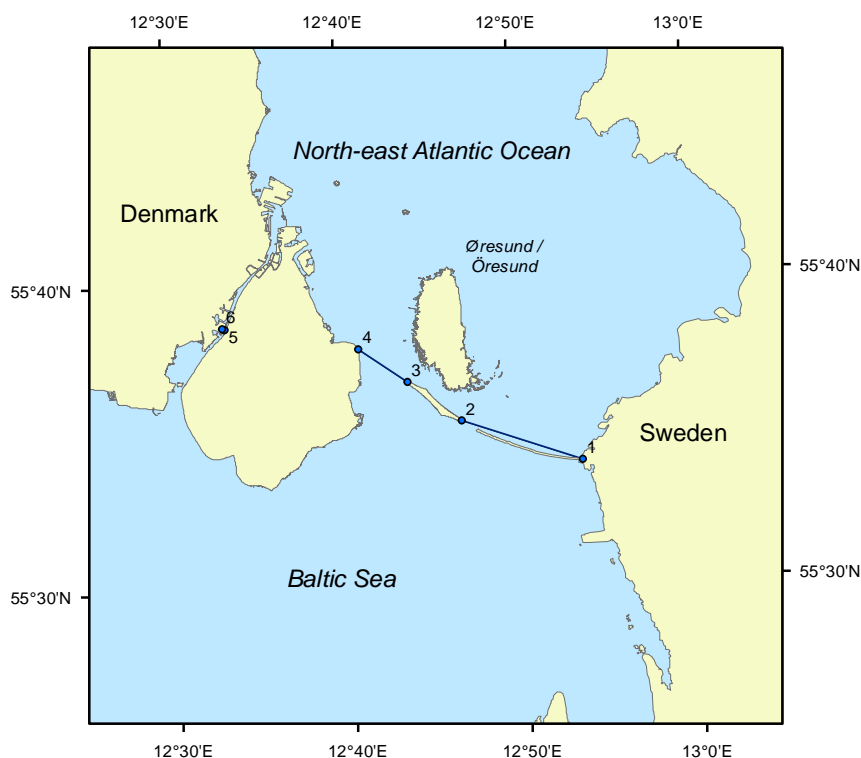


Figure 2 Delineation between ‘Baltic Sea’ and ‘North-east Atlantic Ocean’ MSFD marine regions in the Sound, Kattegat

On the west side of Sjælland the border follows the OSPAR Convention boundary connecting Gniben point on Sjællands odde with Hasenore Head on the coast of Jutland⁶. The estimated positions of Gniben point and Hasenore Head are given in Table 3 and shown in Figure 3. They are in line with the positions used to delineate OSPAR Region II in the current OSPAR regions polygon layer⁷. Note that both Roskilde- and Isefjord are included in the MSFD ‘North-east Atlantic Ocean’ marine region. These two fjords are not part of the OSPAR Convention area.

Table 3 Delineation between ‘Baltic Sea’ and ‘North-east Atlantic Ocean’ MSFD marine regions: estimated positions for Gniben point and Hasenore Head, Kattegat.

Name	Latitude	Longitude
Gniben point	56° 00' 28.8'' N	11° 16' 37.2'' E
Hasenore Head	56° 08' 31.2'' N	10° 42' 57.6'' E

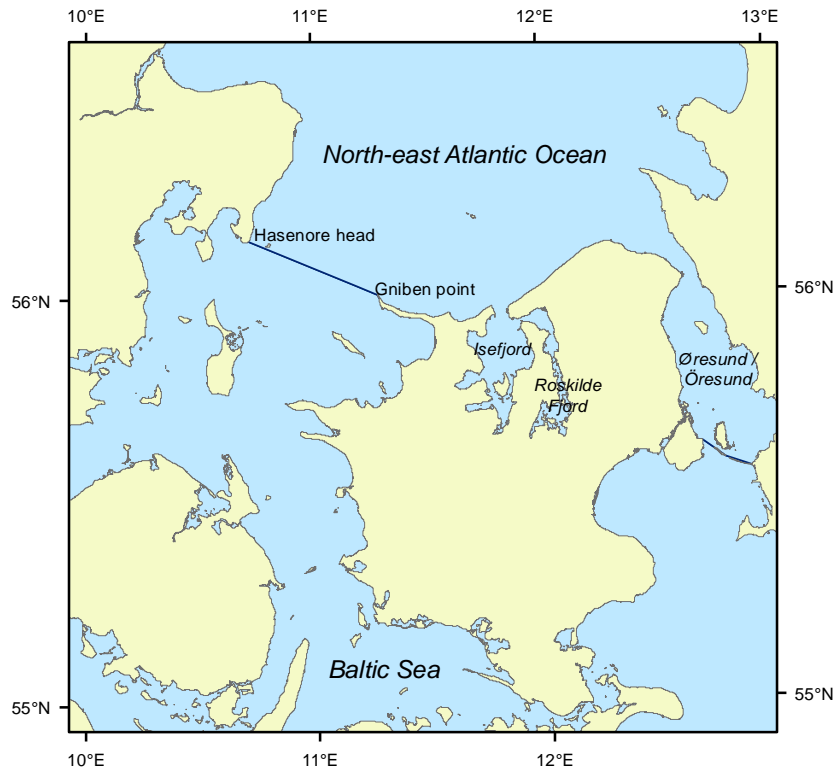


Figure 3 Delineation between ‘Baltic Sea’ and ‘North-east Atlantic Ocean’ MSFD marine regions

1.2.2 Border between ‘North-east Atlantic Ocean’ and ‘Mediterranean Sea’ MSFD marine regions

The border between ‘North-east Atlantic Ocean’ and ‘Mediterranean Sea’ follows the delineation of the Barcelona Convention⁸. The Barcelona Convention area is bounded to the west by “the meridian passing through Cape Spartel lighthouse, at the entrance of the Straits of Gibraltar”. This corresponds to a meridian line of 5° 55’ W (Figure 4)

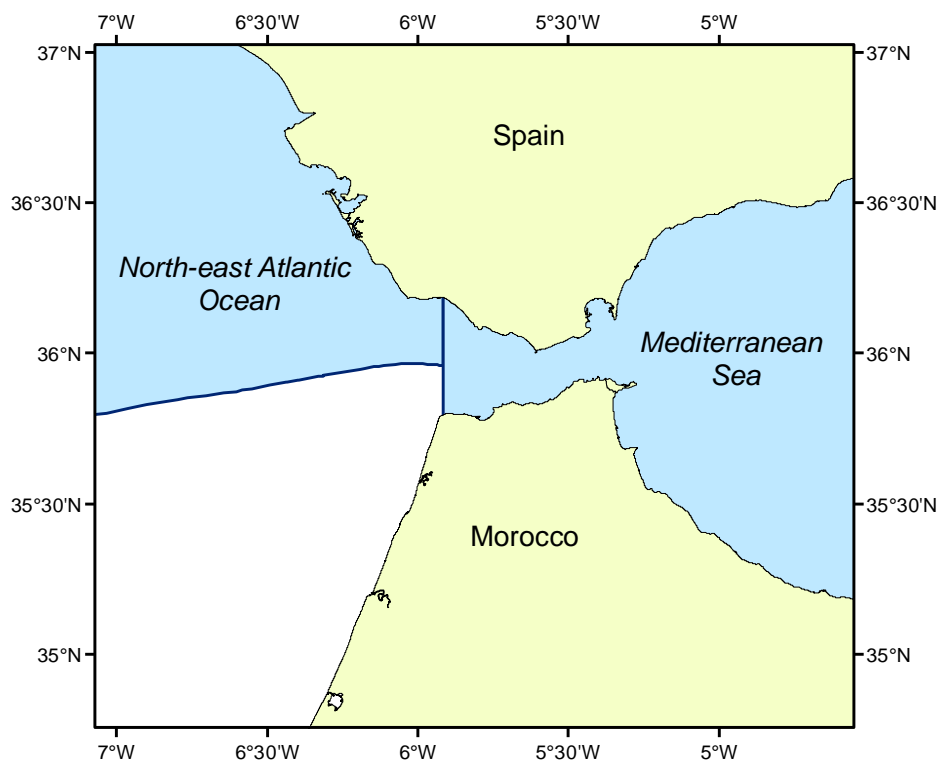


Figure 4 Delineation between 'North-east Atlantic Ocean' and 'Mediterranean Sea' MSFD marine regions

1.2.3 Border between 'Mediterranean Sea' and 'Black Sea' MSFD marine regions

In the east, the 'Mediterranean Sea' is separated from the 'Black Sea' by a line connecting the two lighthouses Mehmetcik and Kumkale in the Strait of the Dardanelles. This definition is in line with the Barcelona Convention⁹. The Strait of Dardanelles and Sea of Marmara are included in the MSFD 'Black Sea' marine region, together with the Sea of Azov. The estimated positions of the two lighthouses are given in Table 4 and shown in Figure 5.

Table 4 Positions of the two lighthouses used to separate the 'Mediterranean Sea' and 'Black Sea' MSFD marine regions

Name	Latitude	Longitude
Mehmetcik lighthouse	40° 02' 38.4'' N	26° 10' 30.0'' E
Kumkale	40° 00' 32.4'' N	26° 11' 52.8'' E

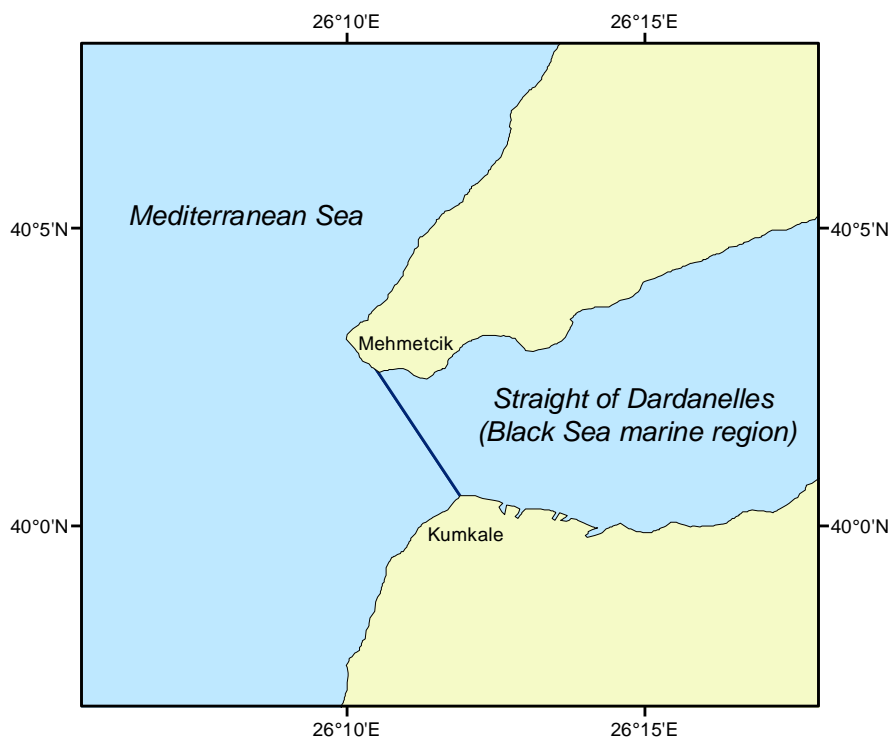


Figure 5 Delineation between 'Mediterranean Sea' and 'Black Sea' MSFD marine regions

1.3 Delineation of MSFD subregions

The 'Baltic Sea' and 'Black Sea' marine regions are not further divided into subregions, but the 'North-east Atlantic Ocean' and 'Mediterranean Sea' marine regions are both divided into four subregions (Figure 6).

The sum of the subregions for the Mediterranean Sea exactly outlines the marine region to which they belong. However in the North-east Atlantic Ocean, the four subregions specified in MSFD Art. 4 cover only a part of the area covered by the OSPAR Convention, relating mainly to the areas covered by marine waters of the Member States as defined in MSFD Art. 3(1).

There are no overlaps and no gaps between the subregions within the overall outline of the regions, excepting for the areas beyond MS marine waters in the North-east Atlantic Ocean region which are not at present part of an MSFD subregion. Therefore the border between 'Baltic Sea' region and 'Greater North Sea' subregion is the same as border between 'Baltic Sea' and 'North-east Atlantic Ocean' regions, the border between the subregions 'Bay of Biscay and the Iberian Coast' and 'Western Mediterranean Sea' is the same as the border between 'North-east Atlantic Ocean' and 'Mediterranean Sea' and also the border between the 'Black Sea' region and 'Aegean-Levantine Sea' subregion is the same as between the regions 'Black Sea' and 'Mediterranean Sea' (see section 1.2).

For Figure 6 the continental shelf areas in the North-east Atlantic Ocean, which extend beyond EEZs, were reported by Member States as part of their 2012 reporting under Articles 8, 9 and 10 of the MSFD. Extended Continental Shelf areas which were not reported under the MSFD have not been included in the map. The Continental Shelf area of Portugal has not yet been allocated to a particular subregion of the NE Atlantic Ocean Region.

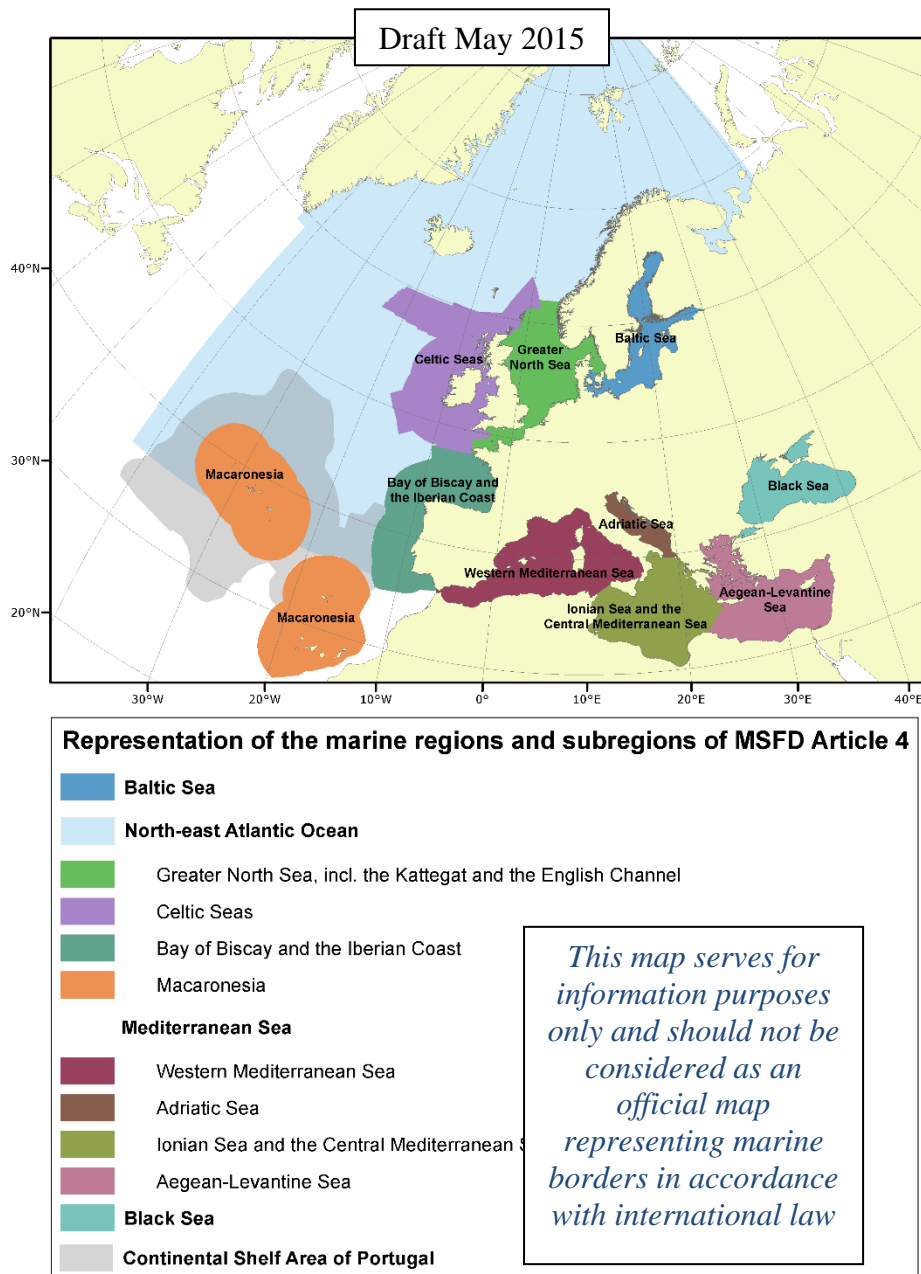


Figure 6 Representation of the marine regions and subregions of MSFD Article 4. Note: Within the North-East Atlantic Ocean region, the four subregions listed in the Directive are shown, without addressing the remaining parts of the region (e.g. waters in the Iceland Sea, Norwegian Sea and Barents Sea). For MSFD implementation purposes the outer boundaries of these subregions are defined by the extent of marine waters of the relevant Member States in accordance with MSFD Art. 3(1), i.e. extending to the outmost reach of the area where the Member State has and/or exercises jurisdictional rights, in accordance with the UNCLOS. The areas shown follow the boundaries of marine waters, including Continental Shelf areas beyond the EEZs, as reported by Member States as part of their 2012 reporting under Articles 8, 9 and 10 of the MSFD. The Continental Shelf area of Portugal has not yet been allocated to a particular subregion of the NE Atlantic Ocean region

1.3.1 Border between 'Greater North Sea' and 'Celtic Seas' MSFD subregions

For the 'Greater North Sea, including the Kattegat and English Channel' subregion the northern boundary in Norwegian waters¹⁰ follows the OSPAR delineation for OSPAR region II (62°N). This is in agreement with the delineation set by Norwegian authorities (<http://dnweb12.dirnat.no/wmsdn/marint.asp>). The northern boundary between 'Greater North Sea' and 'Celtic Seas' in UK waters follows the UK regional sea boundaries as they are defined in "Charting Progress 2"¹¹ (Figure 7). It may change in the future.

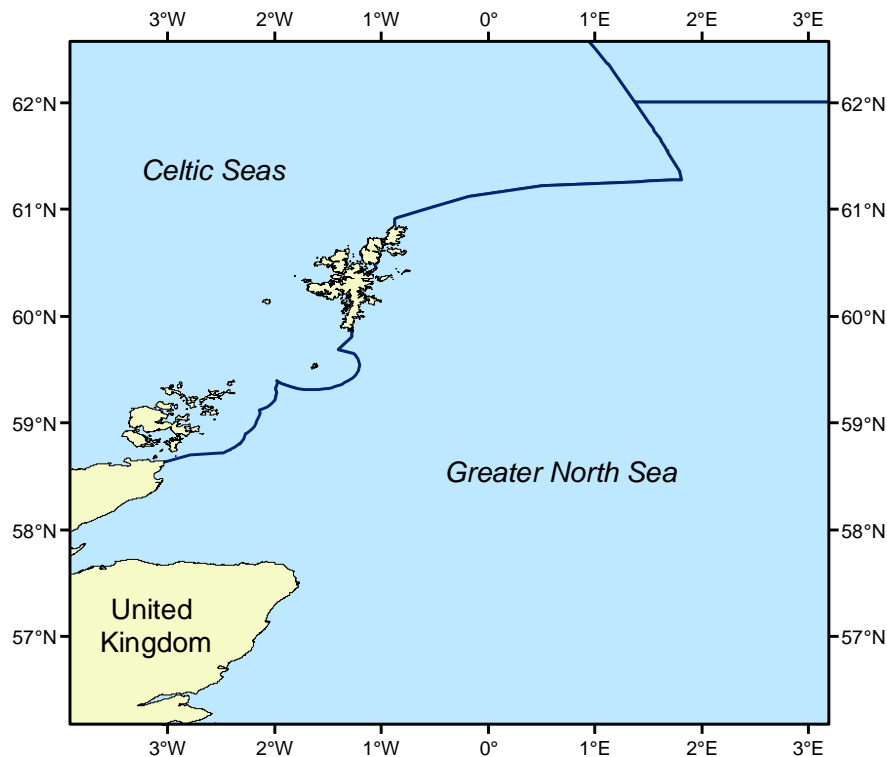


Figure 7 Delineation of the 'Greater North Sea' and 'Celtic Seas' MSFD subregions northern boundary

The southern boundary between 'Greater North Sea' and 'Celtic Seas' (in the 'English Channel') follows the OSPAR Convention boundary between its Regions II and III in French waters (a separation line at 5° W). On the UK side it follows the marine areas defined in "Charting Progress 2"¹². These two lines are connected by a line following the national boundary between France and UK (Figure 8). Correspondance have been made with the UK (Defra) and France (Ministère de l'écologie, de l'énergie, du développement durable et de la mer) regarding this boundary¹³. It may change in the future.

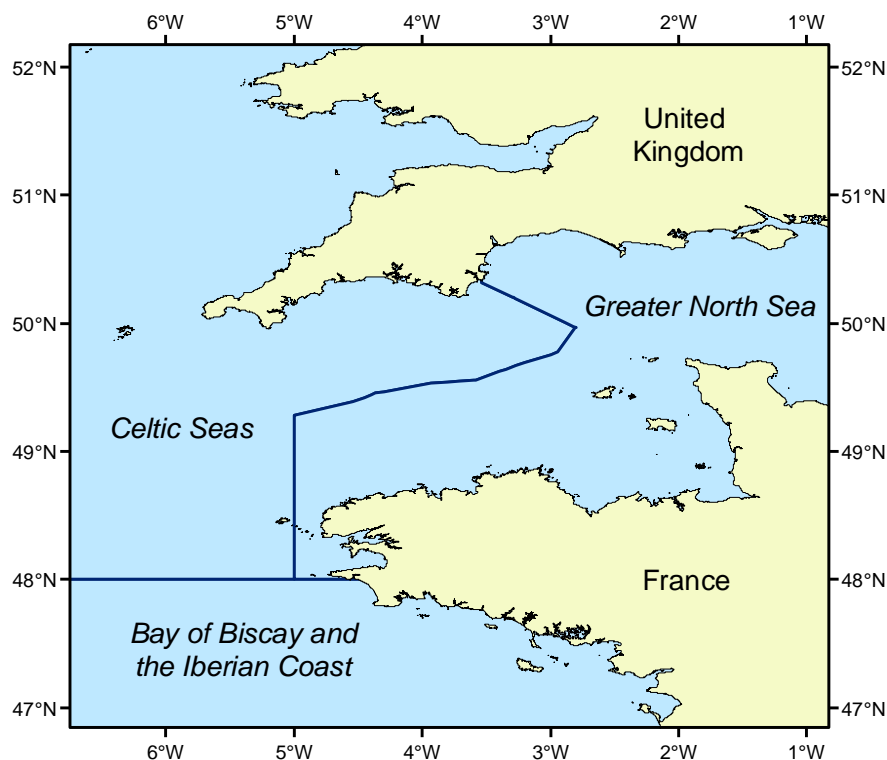


Figure 8 Delineation of the 'Greater North Sea' and 'Celtic Seas' MSFD subregions in the English Channel

1.3.2 Border between 'Bay of Biscay and the Iberian Coast' towards 'Greater North Sea' and 'Celtic Seas' MSFD subregions

The northern boundary of 'Bay of Biscay and the Iberian Coast' borders towards 'Greater North Sea' and 'Celtic Seas' respectively. The boundary follows the parallel at 48° N, in accordance with the OSPAR Convention¹⁴ delineation of regions II/III from region IV (Figure 8).

1.3.3 Border between the 'Western Mediterranean Sea' and 'Ionian Sea and the Central Mediterranean Sea' MSFD subregions

The border between the 'Western Mediterranean Sea' and the 'Ionian Sea and the Central Mediterranean Sea' is based on the draft 4th Edition (2002) of the 'Limits of Oceans and Seas' from the International Hydrographic Organization¹⁵. The border between the two subregions is a line joining Cape Bon in Tunisia with Cape Lilibeo on western Sicily. Between Sicily and the mainland of Italy, the border is a line connecting Cape Peloro on Sicily with Cape Paco on the Italian mainland (Table 5 and Figure 9).

Table 5 Positions used for the delineation of 'Western Mediterranean Sea' and 'Ionian Sea and the Central Mediterranean Sea' MSFD subregions

Name	Latitude	Longitude
Cape Paci (south-west Italy)	38° 15' N	15° 42' E
Cape Peloro (north-east Sicily)	38° 16' N	15° 39' E
Cape Lilibeo (western Sicily)	37° 48' N	12° 26' E
Cape Bon (Tunisia)	37° 05' N	11° 03' E

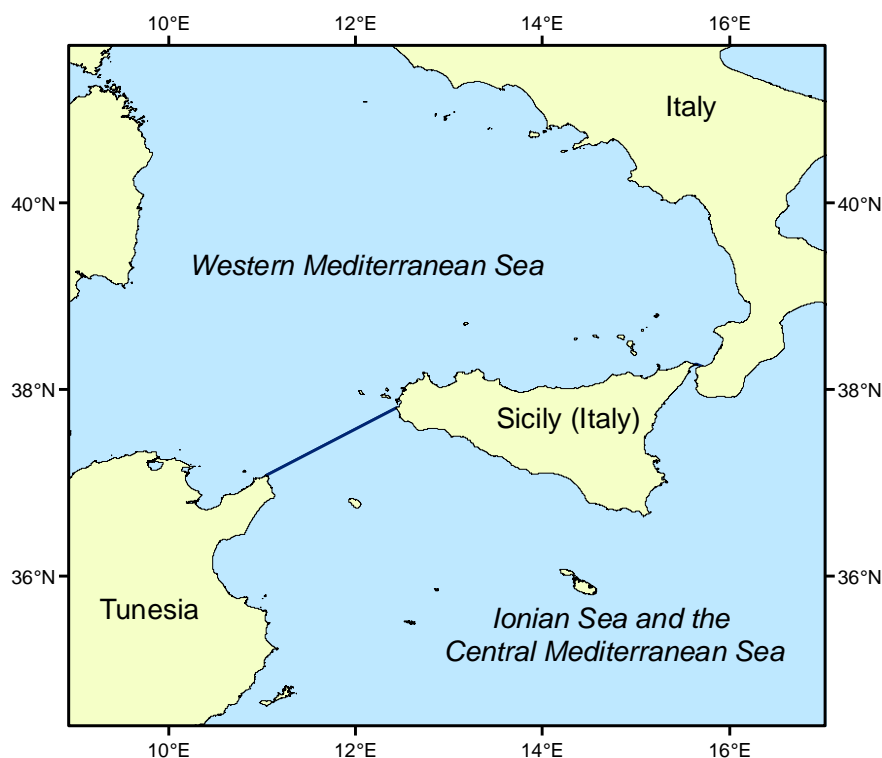


Figure 9 Delineation between 'Western Mediterranean Sea' and 'Ionian Sea and Central Mediterranean Sea' MSFD subregions

1.3.4 Border between 'Ionian Sea and the Central Mediterranean Sea' and 'Adriatic Sea' MSFD subregions

The border between 'Ionian Sea and the Central Mediterranean Sea' and the 'Adriatic Sea' is based on the reporting by Greece of their marine waters as part of their 2012 reporting under MSFD Article 8, 9 and 10¹⁶ (Table 6 and Figure 10). It is based on the draft 3th Edition publication (1953) of the 'Limits of Oceans and Seas' from the International Hydrographic Organization¹⁷. Exact locations are estimated by Greece, based on Hellenic Navy Hydrographic Service's maps. To cover the entire boundary including Italian marine waters the division has been extended as a continuation (straight line) towards the Italian coast at Cape Santa Marie di Leuca:

Table 6 Geographic location of Cape Santa Marie di Leuca¹⁸

Name	Latitude	Longitude
Corfu west coast (Greece)	39° 45' 07.2'' N	19° 37' 40.8 E
Cape Santa Marie di Leuca (Italy)	39° 48' N	18° 22' E

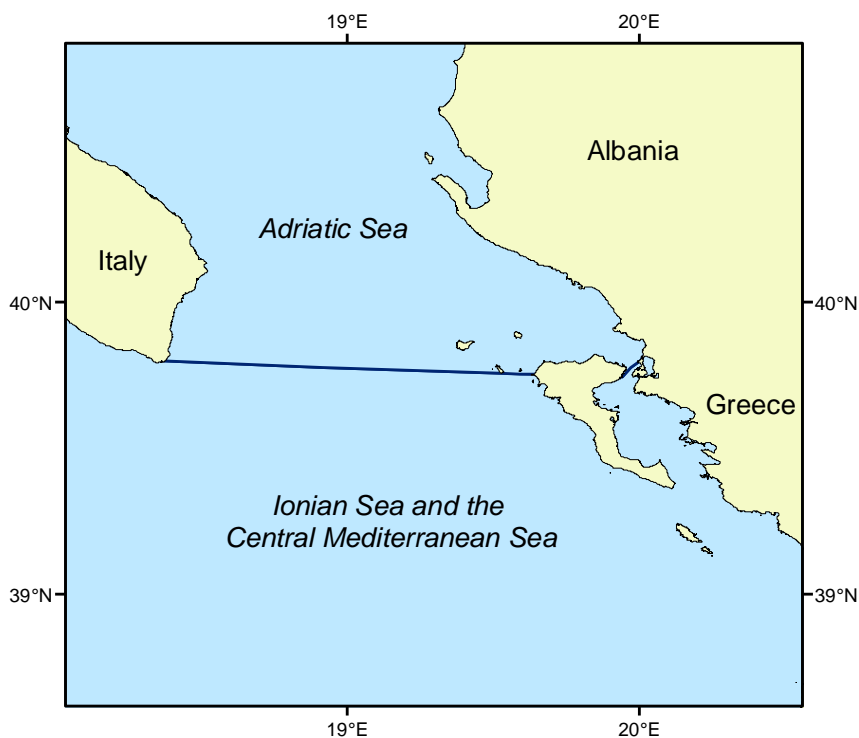


Figure 10 Delineation between ‘Ionian Sea and the Central Mediterranean Sea’ and ‘Adriatic Sea’ MSFD subregions

1.3.5 Border between ‘Ionian Sea and the Central Mediterranean Sea’ and ‘Aegean-Levantine Sea’ MSFD subregions

The border between ‘Ionian Sea and the Central Mediterranean Sea’ and ‘Aegean-Levantine Sea’ is based on the reporting of Greece of their marine waters as part of their 2012 reporting under MSFD Article 8, 9 and 10¹⁹ (Figure 11). For the area north of the island of Crete, the delineation is based on the draft 3th Edition publication (1953) of the ‘Limits of Oceans and Seas’ from the International Hydrographic Organization²⁰. South of Crete the delineation is based on ‘A new bathymetric chart and physiography of the Mediterranean Sea’ (Carter, G.T. et al, 1972)²¹. The exact locations are estimated by Greece, based on Hellenic Navy Hydrographic Service’s maps.

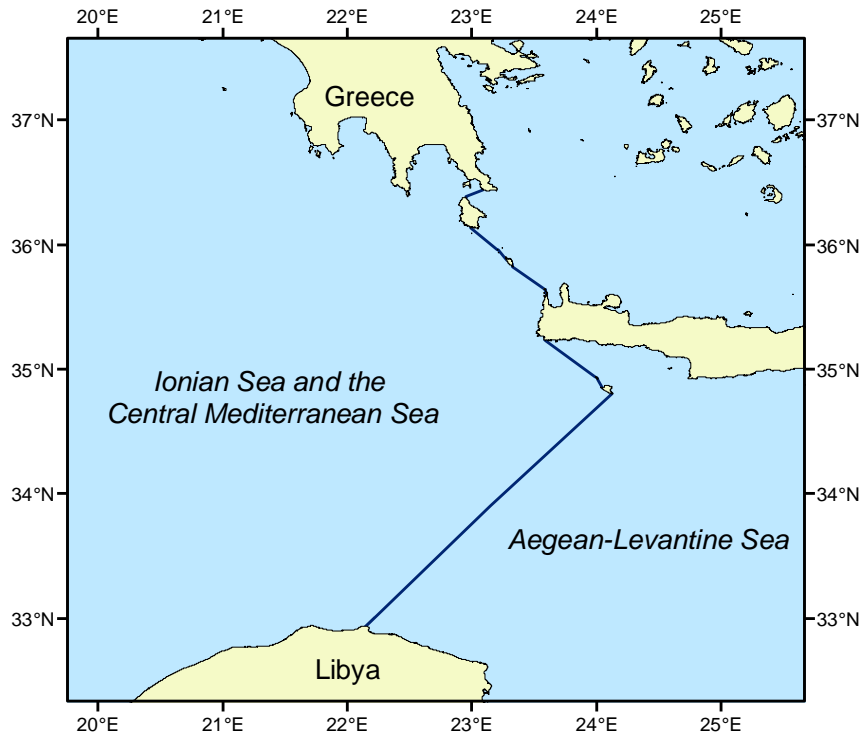


Figure 11 Delineation between 'Ionian Sea and the Central Mediterranean Sea' and 'Aegean-Levantine Sea' MSFD subregions

2 References

- ¹ Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)
- ² ICES EcoRegions (<http://geo.ices.dk/geonetwork/srv/en/main.home?uuid=4745e824-a612-4a1f-bc56-b540772166eb>)
- ³ Marine Regions (<http://www.marineregions.org>)
- ⁴ EEA coastline for analysis (<http://www.eea.europa.eu/data-and-maps/data/eea-coastline-for-analysis/>)
- ⁵ Minutes from Habitats Committee 25/4 2012, see point 12 in document. The minutes are available at <http://ec.europa.eu/transparency/regcomitology/index.cfm?do=search.documentdetail&cz94XNi0FVYxPsayL8Pmc3DMXcAjETM3wCQs0zuFMiUyRNldL7I/SVpCmnySTSZ..>
- ⁶ OSPAR convention (http://www.ospar.org/content/content.asp?menu=01481200000000_000000_000000)
- ⁷ OSPAR regions (http://geo.ices.dk/viewer.php?show_meta_layer=ext_ref:ospar_regions_without_coastline)
- ⁸ Barcelona convention (http://www.unep.ch/regionalseas/regions/med/t_barcel.htm)
- ⁹ Barcelona convention (http://www.unep.ch/regionalseas/regions/med/t_barcel.htm)
- ¹⁰ OSPAR convention (http://www.ospar.org/content/content.asp?menu=01481200000000_000000_000000)
- ¹¹ Charting Progress 2: The state of UK seas. 2010. DEFRA, London. <http://chartingprogress.defra.gov.uk>. The use of the boundary has been confirmed by Richard Emmerson, DEFRA with the provision “that it might change in the future”
- ¹² Charting Progress 2: The state of UK seas. 2010. DEFRA, London. <http://chartingprogress.defra.gov.uk>. The use of the boundary has been confirmed by Richard Emmerson, DEFRA with the provision “that it might change in the future”
- ¹³ The justification for this use of the boundary has been confirmed by Richard Emmerson, DEFRA and Julie Percelay at Ministère de l’écologie, de l’énergie, du développement durable et de la mer with the provision “that it might change in the future” by email 2 March 2012. David Connor DG ENV got a copy of the correspondence.
- ¹⁴ OSPAR convention (http://www.ospar.org/content/content.asp?menu=01481200000000_000000_000000)
- ¹⁵ Limits of Oceans and Seas, International Hydrographic Organization, Publication S-23, Draft 4th Edition, 2002 (http://www.iho.int/mtg_docs/com_wg/S-23WG/S-23WG_Misc/Draft_2002/Draft_2002.htm)
- ¹⁶ EIONET Central Data Repository (<http://cdr.eionet.europa.eu/>)
- ¹⁷ Limits of Oceans and Seas, International Hydrographic Organization, Special Publication N° 23, 3rd Edition, 1953 (http://www.iho.int/iho_pubs/IHO_Download.htm#S-23)
- ¹⁸ Limits of Oceans and Seas, International Hydrographic Organization, Publication S-23, Draft 4th Edition, 2002 (http://www.iho.int/mtg_docs/com_wg/S-23WG/S-23WG_Misc/Draft_2002/Draft_2002.htm)
- ¹⁹ EIONET Central Data Repository (<http://cdr.eionet.europa.eu/>)
- ²⁰ Limits of Oceans and Seas, International Hydrographic Organization, Special Publication N° 23, 3rd Edition, 1953 (http://www.iho.int/iho_pubs/IHO_Download.htm#S-23)
- ²¹ Carter T.G. et al, 1972, A new bathymetric chart and physiography of the Mediterranean Sea. In: A.D. Stanley and A.D. Dowden (eds.), The Mediterranean Sea: A Natural Sedimentation Laboratory, pp. 1-23, Hutchinson & Ross, Stroudsbou