

New information regarding the impact of fisheries on other components of the ecosystem

Advice summary

In 2019, ICES received 405 new records of vulnerable marine ecosystems (VME) indicators and/or VME habitats in EU waters. These are located in the Faroe–Shetland Channel, Rockall Bank, the Rosemary Bank Seamount, the Wyville Thomson Ridge, the Irish/Scottish continental shelf, the Spanish continental shelf (Gulf of Cadiz), and the Formigas Seamount (Azores).

The geographical positions of areas subject to various protection and fisheries management regimes are included in this advice. Any bottom fishing on VME habitats will cause damage to these habitats.

Request

Provide any new information regarding the impact of fisheries on other components of the ecosystem including small cetaceans and other marine mammals, seabirds and habitats. This should include any new information on the location of habitats sensitive to particular fishing activities.

Based on Work Package I, section 1.1.3. of the Administrative Agreement between the EU and ICES, the EU requests ICES to:

- 1) Provide information regarding the impact of fisheries on the ecosystem including marine mammals, seabirds and habitats impacts (including incidental catches). This should include information on the location of habitats sensitive to particular fishing activities;*
- 2) Give warnings of any serious threats from fishing activities alone or in conjunction with any other relevant activity to local ecosystems or species as soon as ICES is aware of such threats*

Elaboration on the advice

This advice section covers only aspects relating to VME habitats; information on impacts on marine mammals, seabirds, and other marine vertebrates will be advised separately.

ICES notes that all habitats (VMEs) considered in this advice are by definition vulnerable. Any interaction of bottom fishing gear with these habitats will cause damage. ICES has consistently interpreted the request as a request to identify the location of VMEs, and not to determine the location of fishing or its impact.

New information on the location of habitats sensitive to particular fishing activities

ICES has received 405 new VME records, of which 237 were VME indicator records and 168 VME habitat records, all within EU waters. These records were from the Faroe–Shetland Channel, the Rosemary Bank Seamount, the Wyville Thomson Ridge, Rockall Bank, the Irish/Scottish continental shelf, the Spanish continental shelf (Gulf of Cadiz), and the Formigas Seamount (Azores). These habitats are particularly sensitive to mobile bottom-contacting gear.

Rosemary Bank Seamount and Wyville–Thomson Ridge

A total of 96 new VME indicator records within EU waters have been added for the Rosemary Bank Seamount and the Wyville Thomson Ridge (A and B, Figure 1). There are no new records of VME habitats. 59 of the new VME indicator records are located within an NCMPA (Nature Conservation Marine Protected Area) in UK waters (yellow line in Figure 1). The UK has proposed draft fisheries management measures for this MPA (Rosemary Bank Seamount NCMPA) for relevant EU Member States. The other 37 VME indicator records are located outside of existing UK MPAs.

Faroe–Shetland Channel

A total of 55 new VME indicator records within EU waters have been added for the Faroe–Shetland Channel (C, Figure 1). There are no new records of VME habitats. 43 of the new VME indicator records are located within an NCMPA in UK waters (yellow line in Figure 1). The UK has proposed draft fisheries management measures for this NCMPA (Faroe–Shetland Sponge Belt) for relevant EU Member States. The last 12 VME indicator records occur outside of this MPA.

Figure 2 shows the VME index (based on all records for the area), and Figure 3 the associated VME index confidence for the Rosemary Bank Seamount (A), the Wyville Thomson Ridge (B), and the Faroe–Shetland Channel (C).

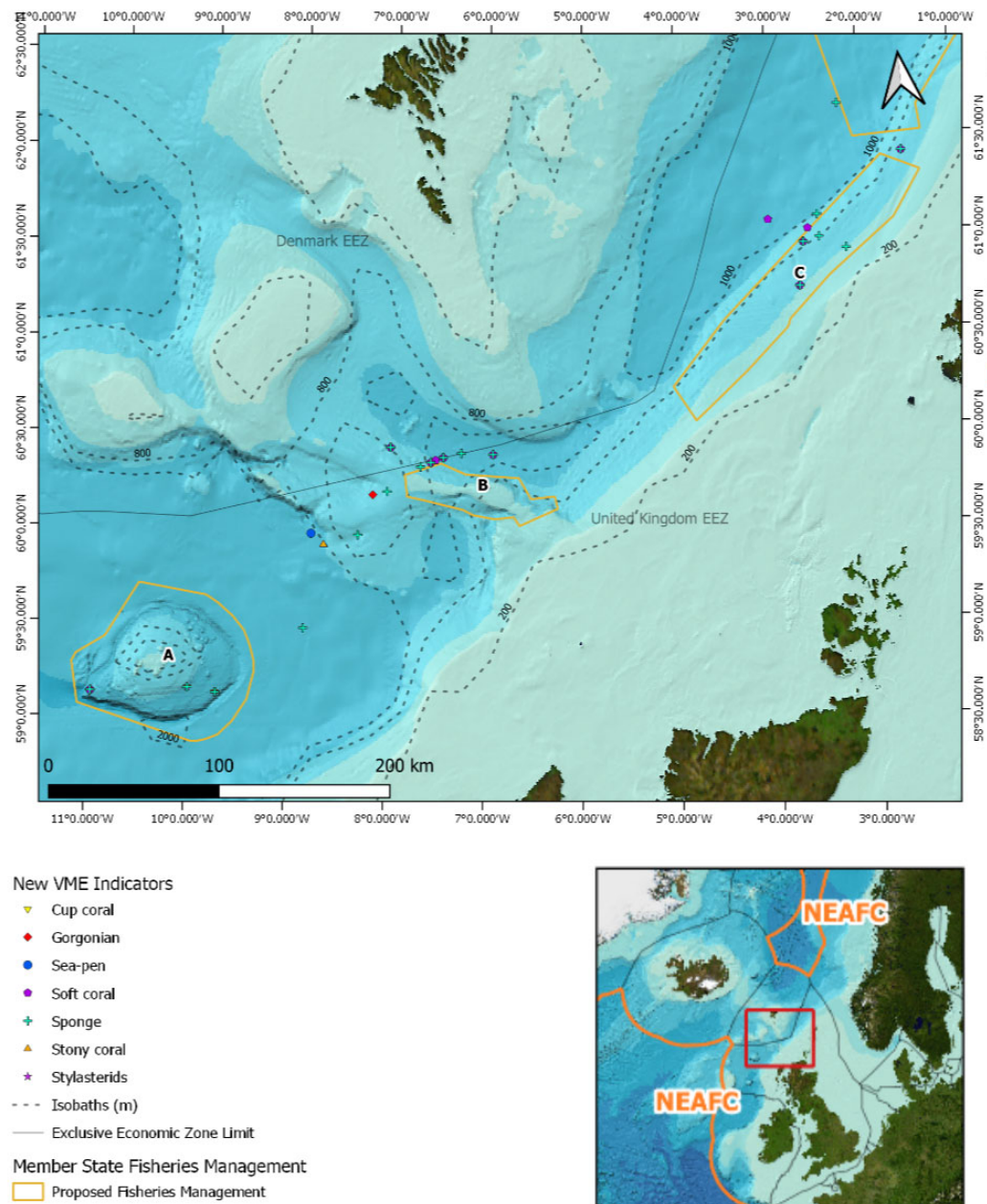


Figure 1 New VME indicator records for the Rosemary Bank Seamount (A), Wyville–Thomson Ridge (B), and the Faroe–Shetland Channel (C).

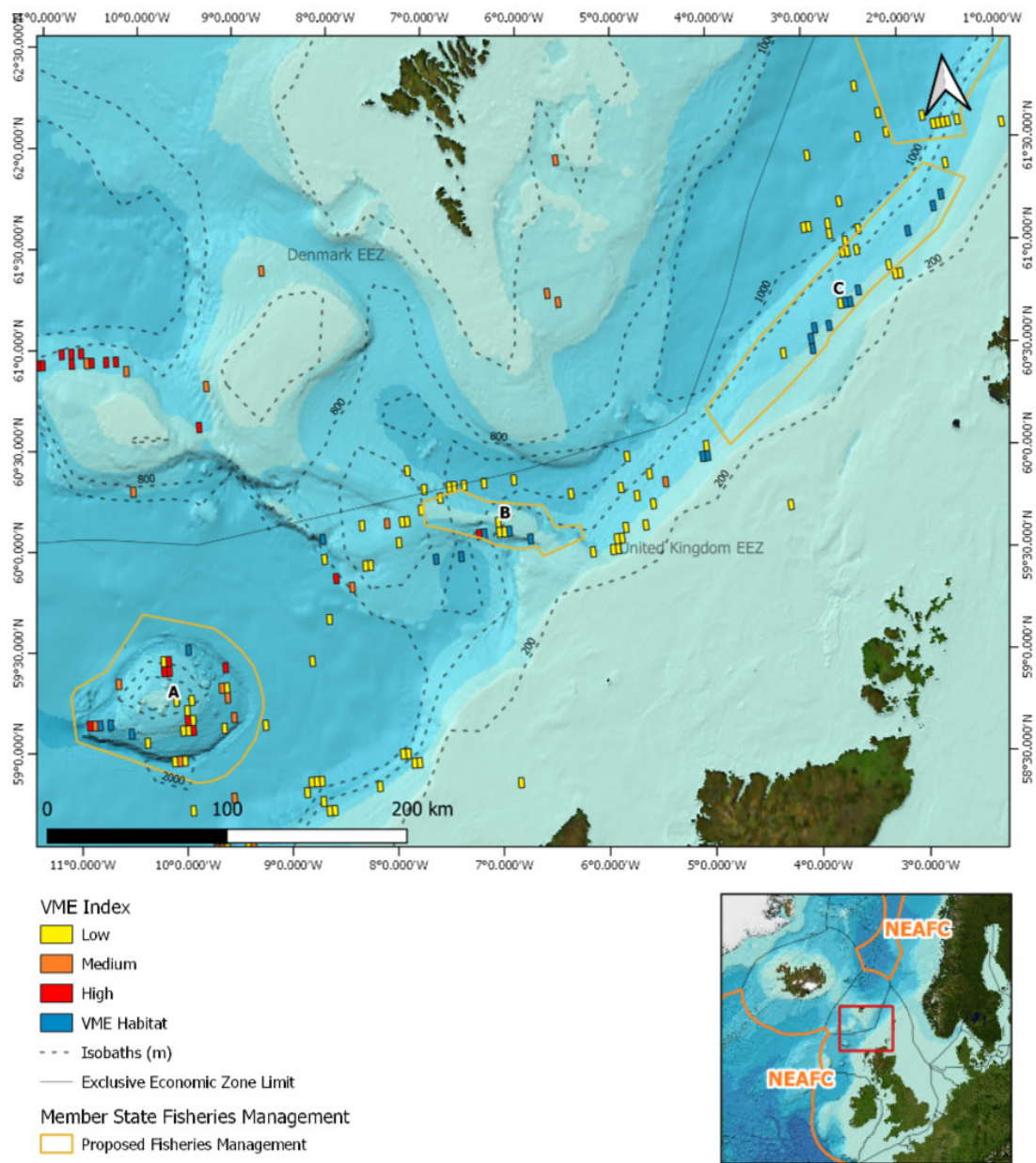


Figure 2

VME index (based on all records for the area) for the Rosemary Bank Seamount (A), the Wyville Thomson Ridge (B), and the Faroe–Shetland Channel (C), showing the presence of actual VME (blue cells) and the likelihood of encountering a VME within each grid cell (ranging from low to high).

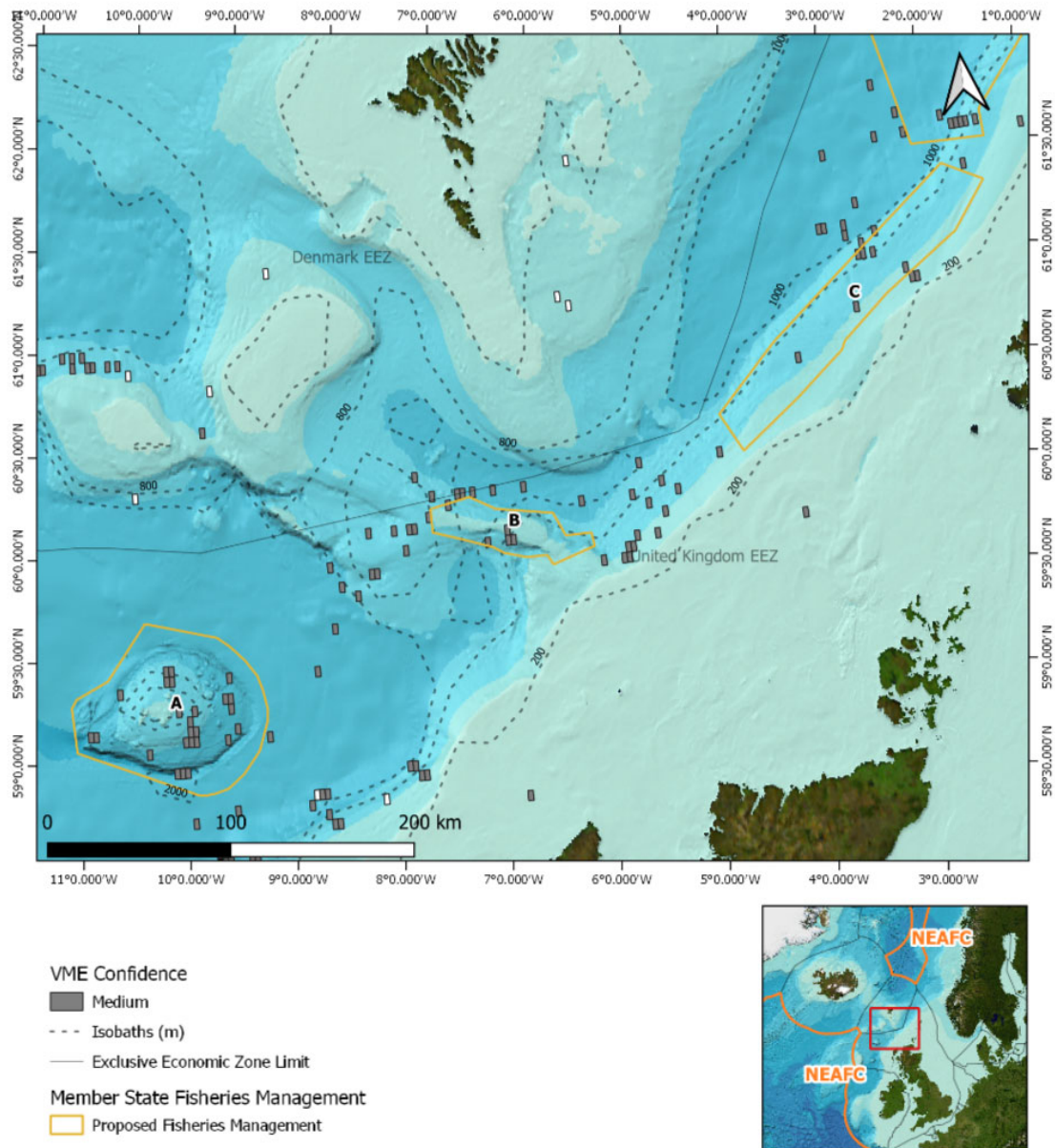


Figure 3 VME index confidence (based on all records for the area) for the Rosemary Bank Seamount (A), the Wyville Thomson Ridge (B), and the Faroe-Shetland Channel (C).

Rockall Bank

A total of 86 new VME indicator records have been added for Rockall Bank within EU waters (Figure 4). There are no new records of VME habitats. Most of these new VME indicator records, mainly comprising sponges, stony corals, cup corals, and sea-pens, are located outside any current or proposed protection measures (blue, purple, and yellow lines in Figure 4). However, 22 VME indicator records are located within the area of the Rockall Haddock Box inside the EEZs of the UK and the Republic of Ireland. This area was closed to bottom fishing in EU waters in 2002.

Figure 5 shows the VME index (based on all records for the area) and Figure 6 the associated VME index confidence for the Rockall Bank.

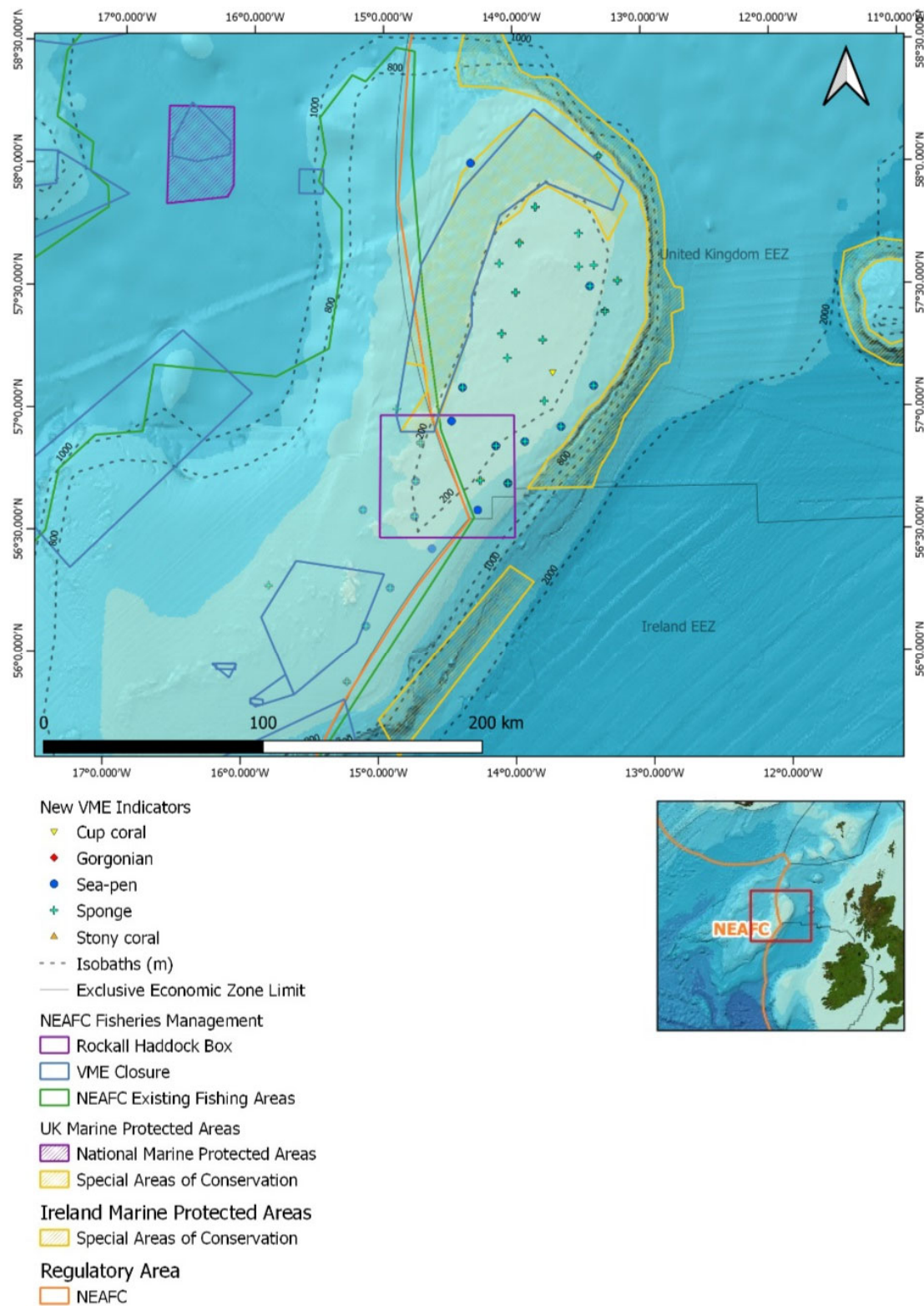


Figure 4 New VME indicator records for Rockall Bank.

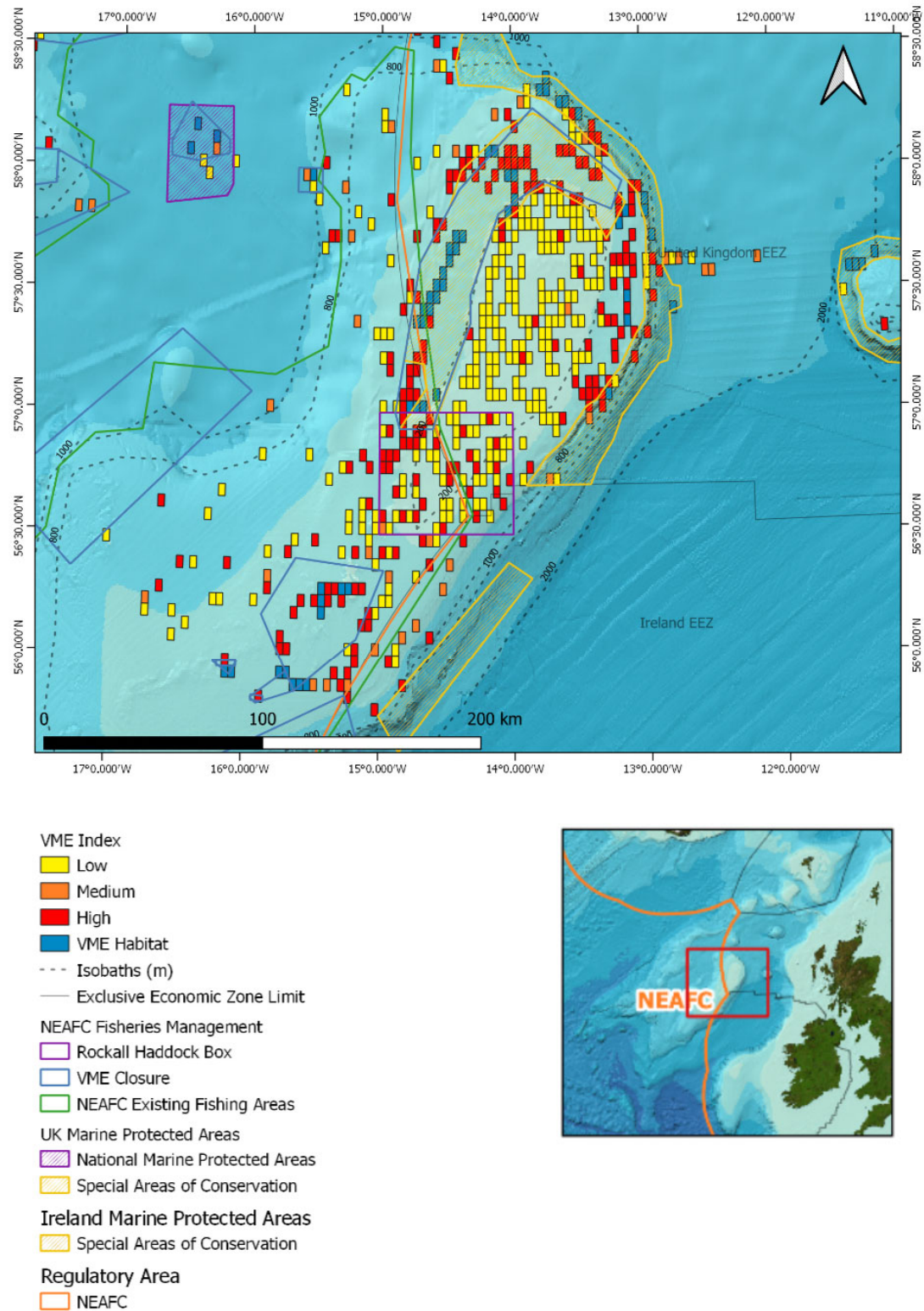


Figure 5 VME index (based on all records for the area) for Rockall Bank, showing the presence of actual VMEs (blue cells) and the likelihood of encountering a VME within each grid cell (ranging from low to high).

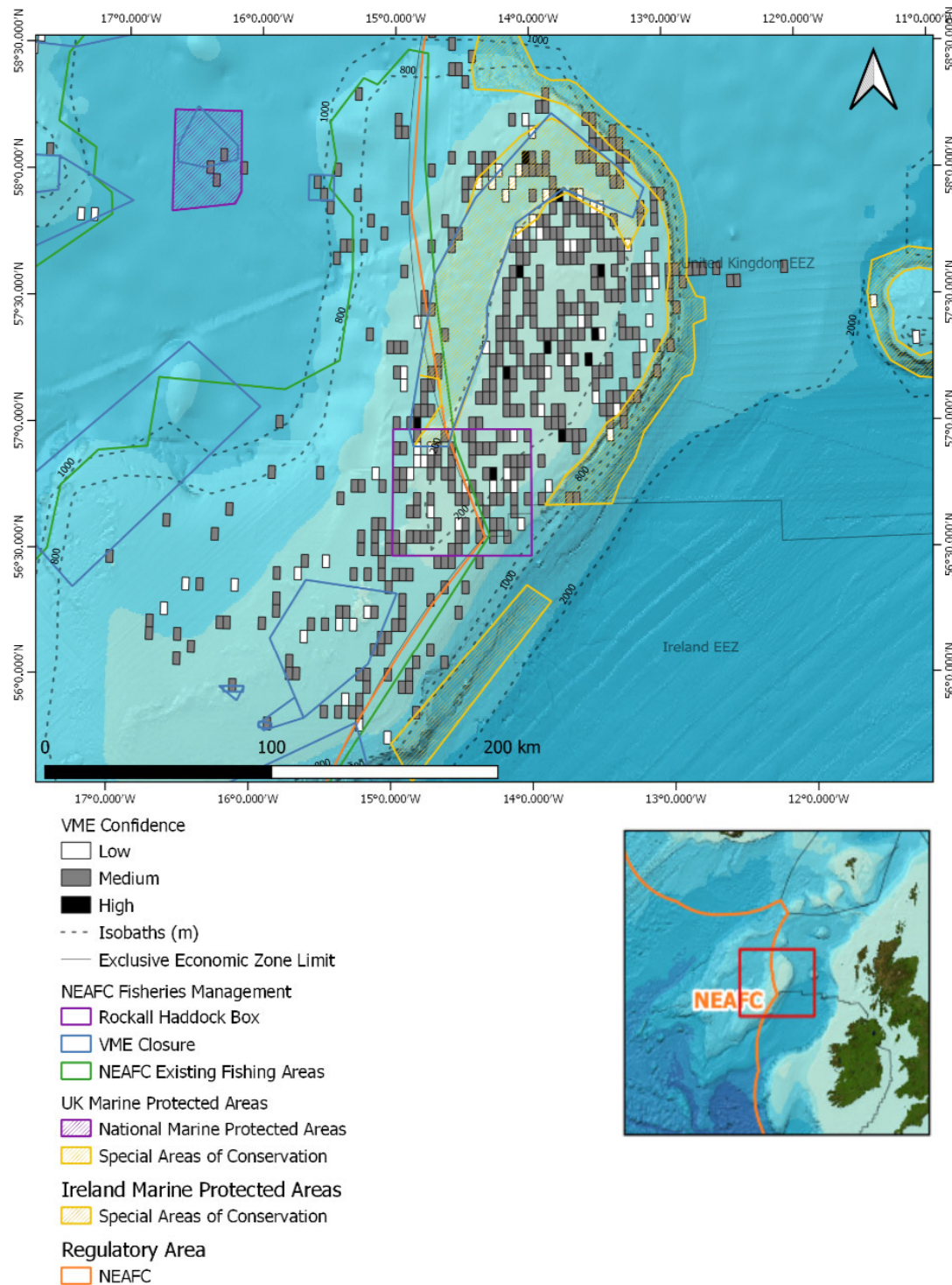


Figure 6 VME index (based on all records for the area) confidence for Rockall Bank (ranging from low to high).

Irish continental shelf

A total of 132 new VME habitat records within EU waters were added for the Irish/Scottish Continental Shelf (Figure 7 and Figure 10). These include anemone aggregations, cold-water coral reefs, coral gardens, mud and sand emergent fauna, and sea-pen fields. 13 of these new VME habitat records are located within a Special Area of Conservation (East Rockall Bank [Site Code: UK0030389], yellow line in Figure 10), where fisheries are regulated according to amendments to Council Regulation (EU) 2019/1241 (EU, 2019) for bottom-contacting gears, but not for pelagic trawls.

Figure 8 and Figure 11 show the VME index (based on all records for the area), while Figure 9 and Figure 12 indicate the associated VME index confidence for the Irish Continental Shelf.

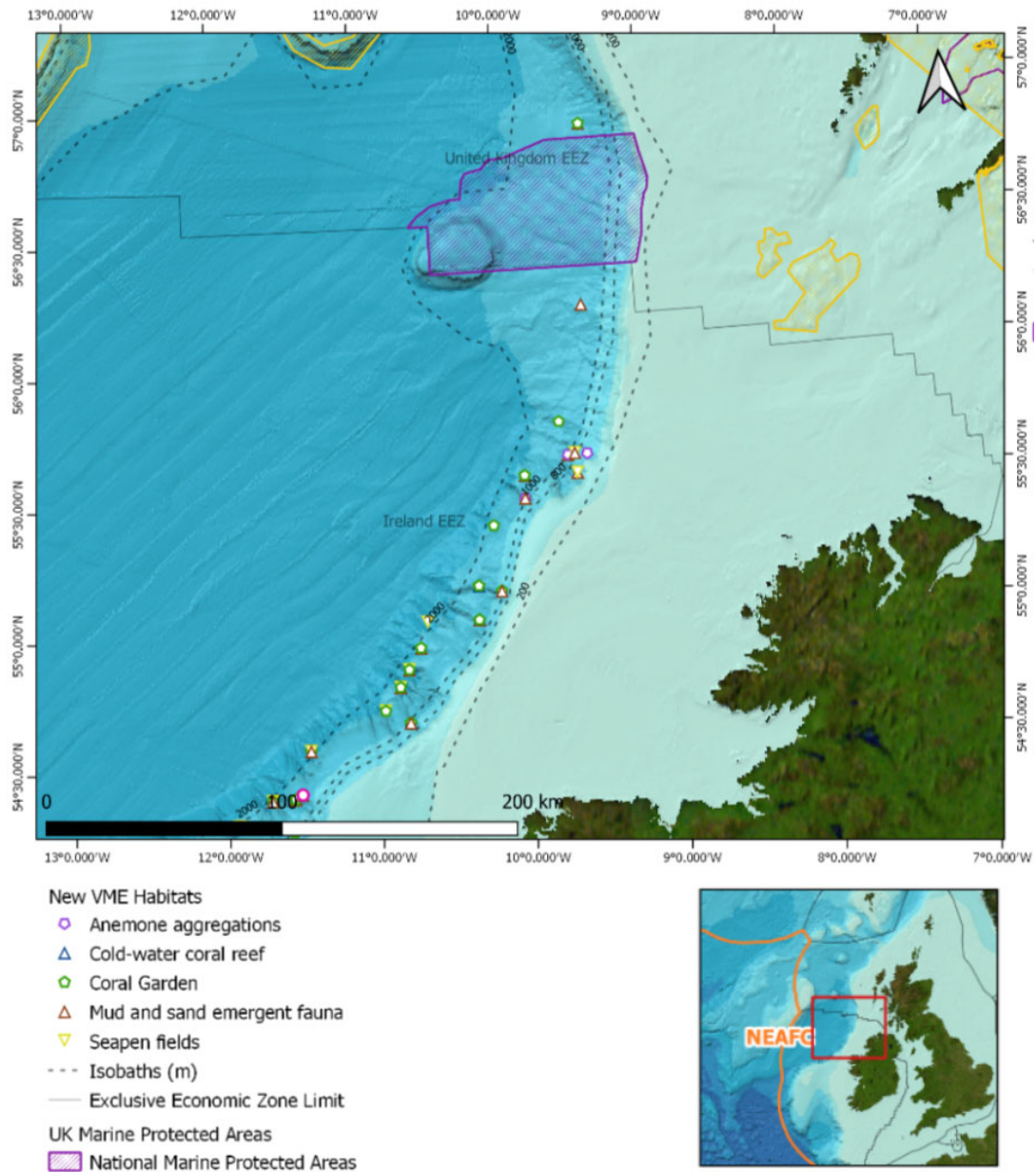


Figure 7 New VME records within EU waters, re-submitted to the VME database in 2019 for the Irish/Scottish Continental Shelf (see also Figure 10).

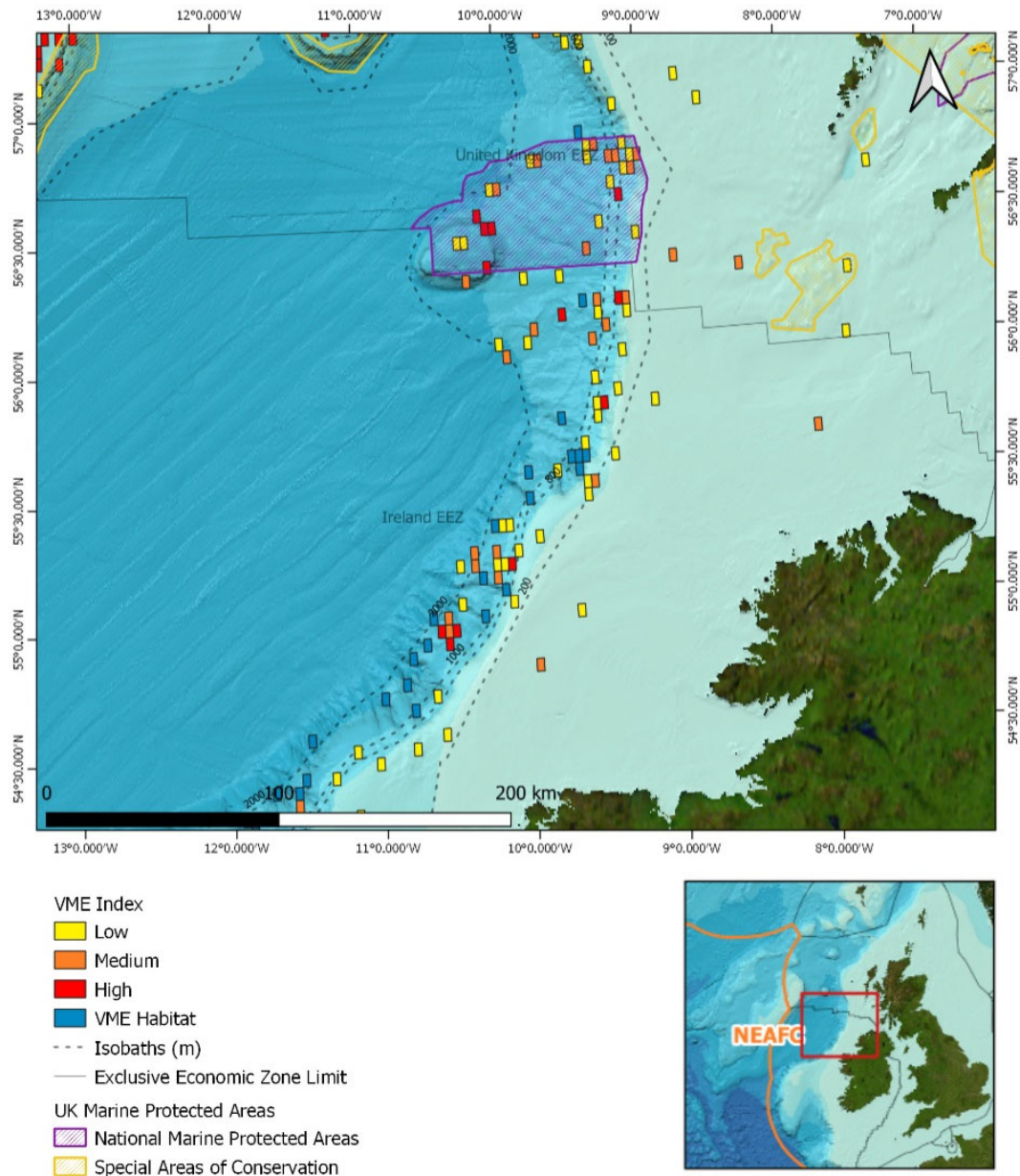


Figure 8 VME index (based on all records for the area) for the Irish/Scottish Continental Shelf, showing the presence of actual VME (blue cells) and the likelihood of encountering a VME within each grid cell (ranging from low to high).

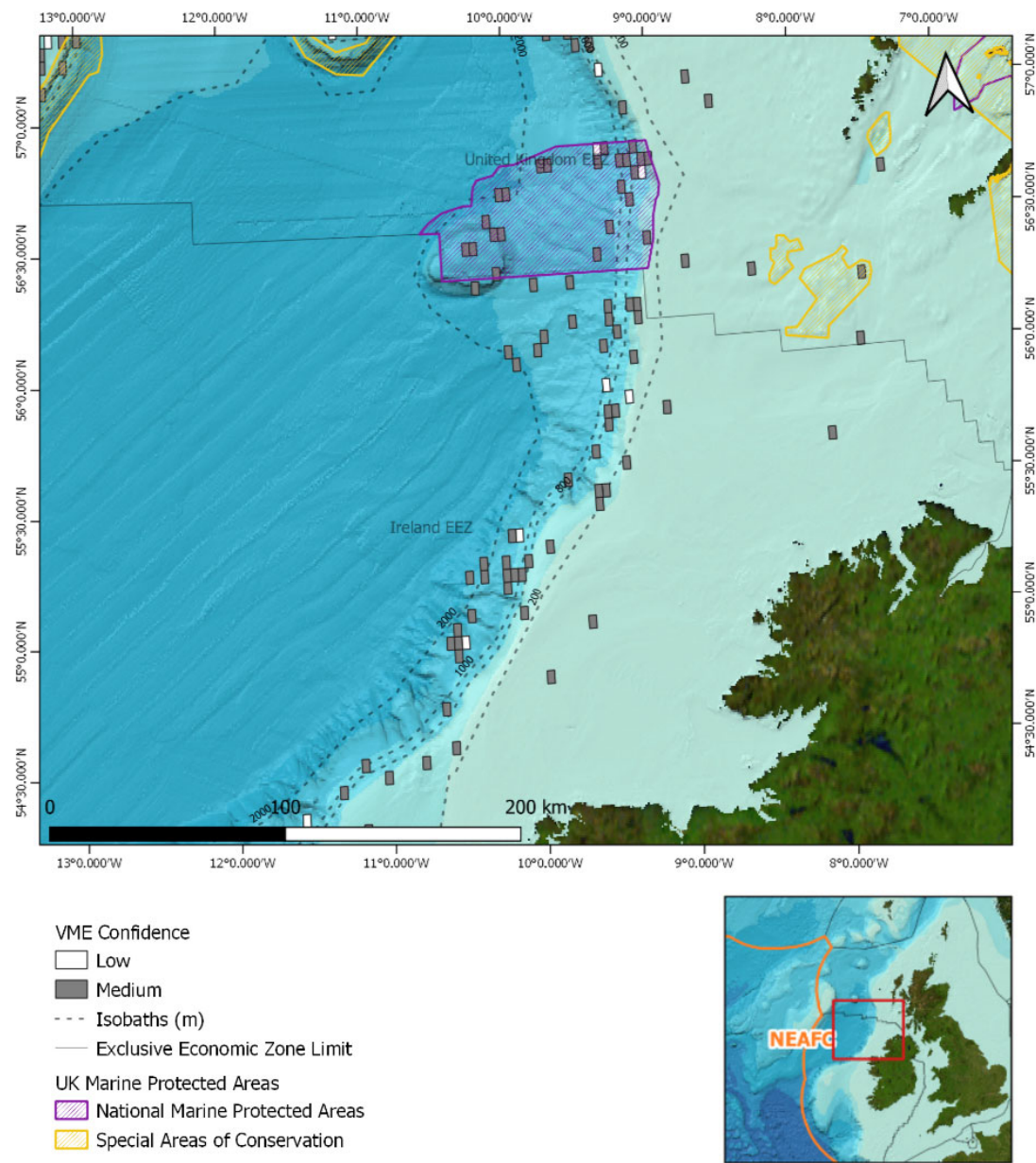


Figure 9 VME index confidence (based on all records for the area) for the Irish/Scottish Continental Shelf (ranging from low to high).

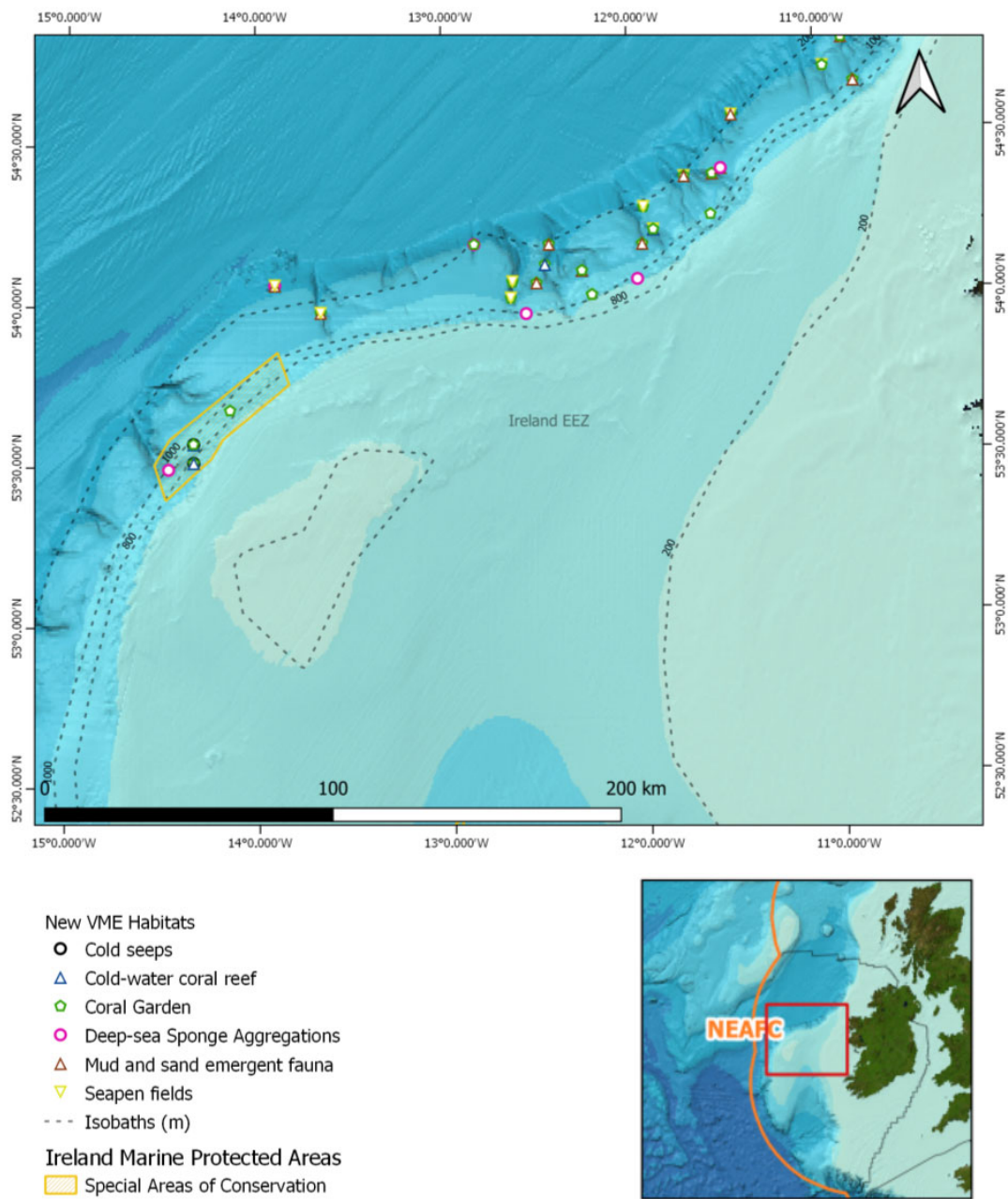


Figure 10 New VME records within EU waters, re-submitted to the VME database in 2019 for the Irish Continental Shelf (see also Figure 7).

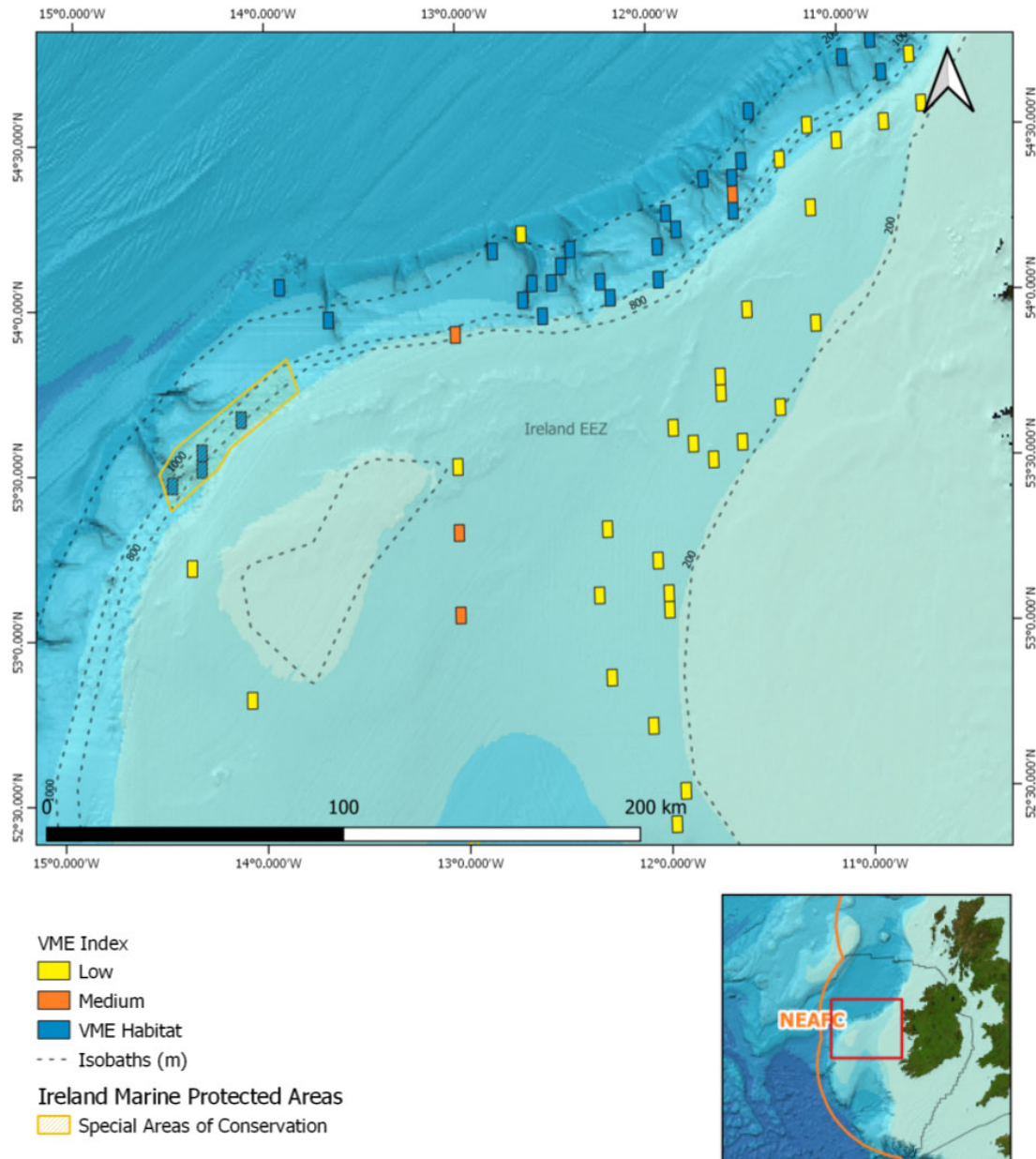


Figure 11 VME index (based on all records for the area) for the Irish Continental Shelf, showing the presence of actual VME (blue cells) and the likelihood of encountering a VME within each grid cell (ranging from low to high).

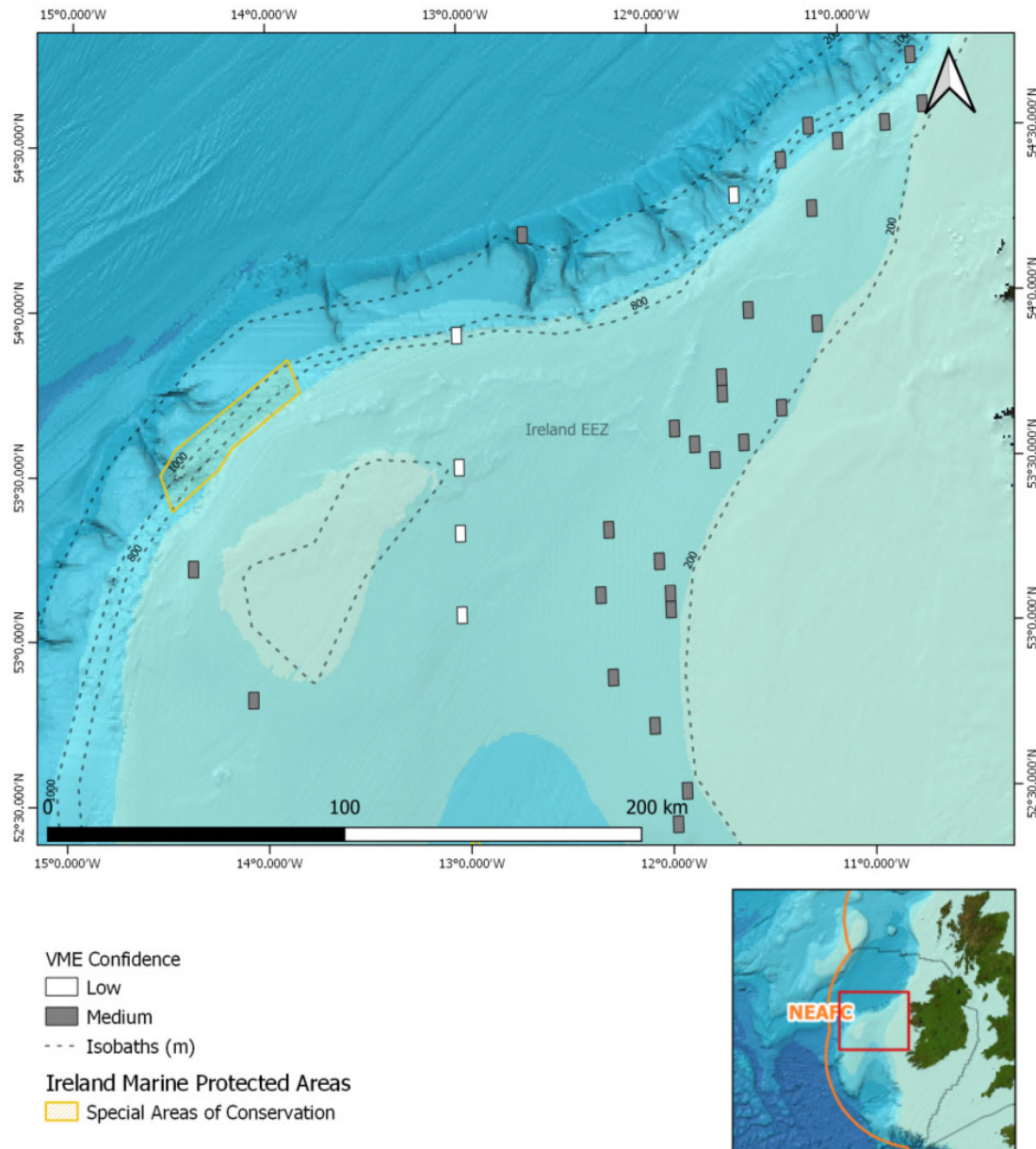


Figure 12 VME index confidence (based on all records for the area) for the Irish Continental Shelf (ranging from low to high).

Spanish continental shelf (Gulf of Cadiz)

18 new records of VME habitats within EU waters were added for the Spanish Continental Shelf in the Gulf of Cadiz (Figure 13). These include eight records of coral garden, one cold-water coral reef, four records of mud and sand emergent fauna, and five records of deep-sea sponge aggregations. All of these new VME habitat records occur within a Site of Community Importance (ESZZ12002, Volcanes de fango del Golfo de Cádiz) under the EU Habitats Directive (EU, 1992; the purple line in Figure 13).

Figure 14 shows the VME index (based on all records for the area) and Figure 15 the associated VME index confidence for the Spanish Continental Shelf (Gulf of Cadiz).

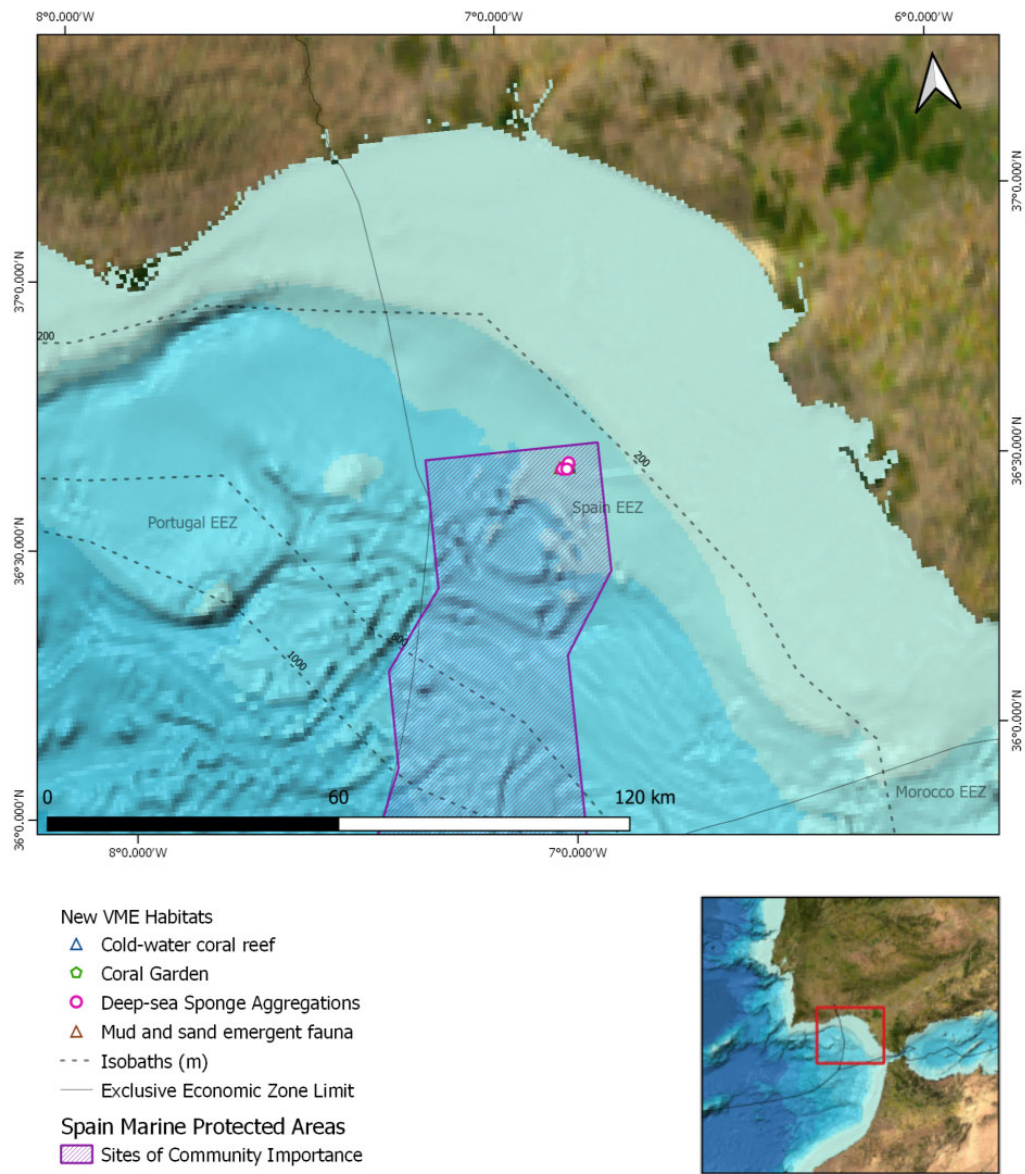


Figure 13 New VME records within EU waters, re-submitted to the VME database in 2019 for the Spanish Continental Shelf (Gulf of Cadiz).

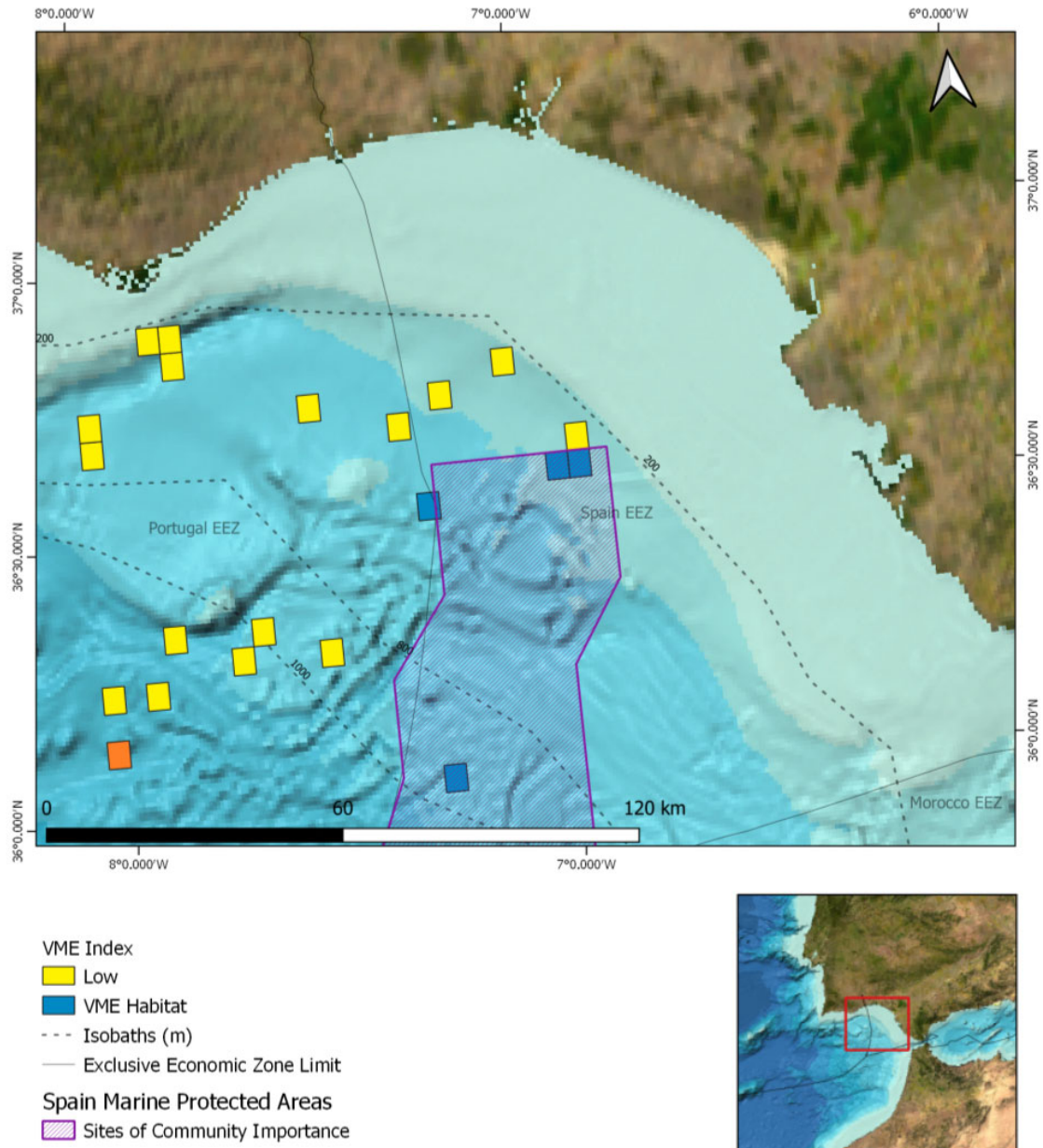


Figure 14 VME index (based on all records for the area) for the Spanish Continental Shelf (Gulf of Cadiz), showing the presence of actual VME (blue cells) and the likelihood of encountering a VME within each grid cell (ranging from low to high).

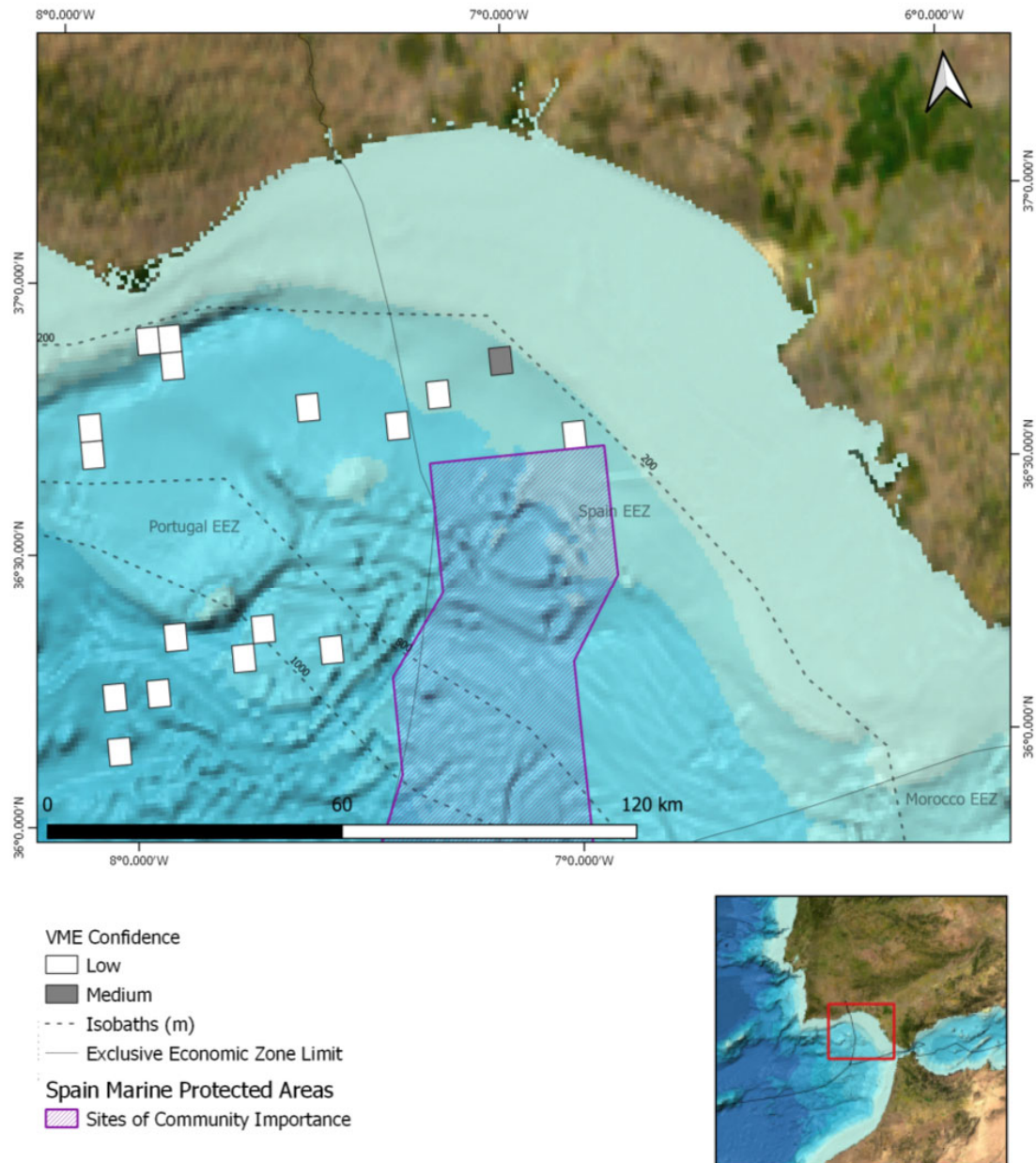


Figure 15 VME index confidence (based on all records for the area) for the Spanish Continental Shelf (Gulf of Cadiz) (ranging from low to high).

Formigas Seamount (Azores)

18 new records of VME habitats within EU waters were added for the Formigas Seamount (Figure 16). These comprise 14 records of coral garden and 4 deep-sea sponge aggregations. All the new VME habitat records occur within a national Nature Reserve (purple line in Figure 16). Within this area, no bottom-contacting gears are allowed and only hook and lines are allowed for tuna.

Figure 17 shows the VME index (based on all records for the area) and Figure 18 the associated VME index confidence for the Formigas Seamount (Azores).

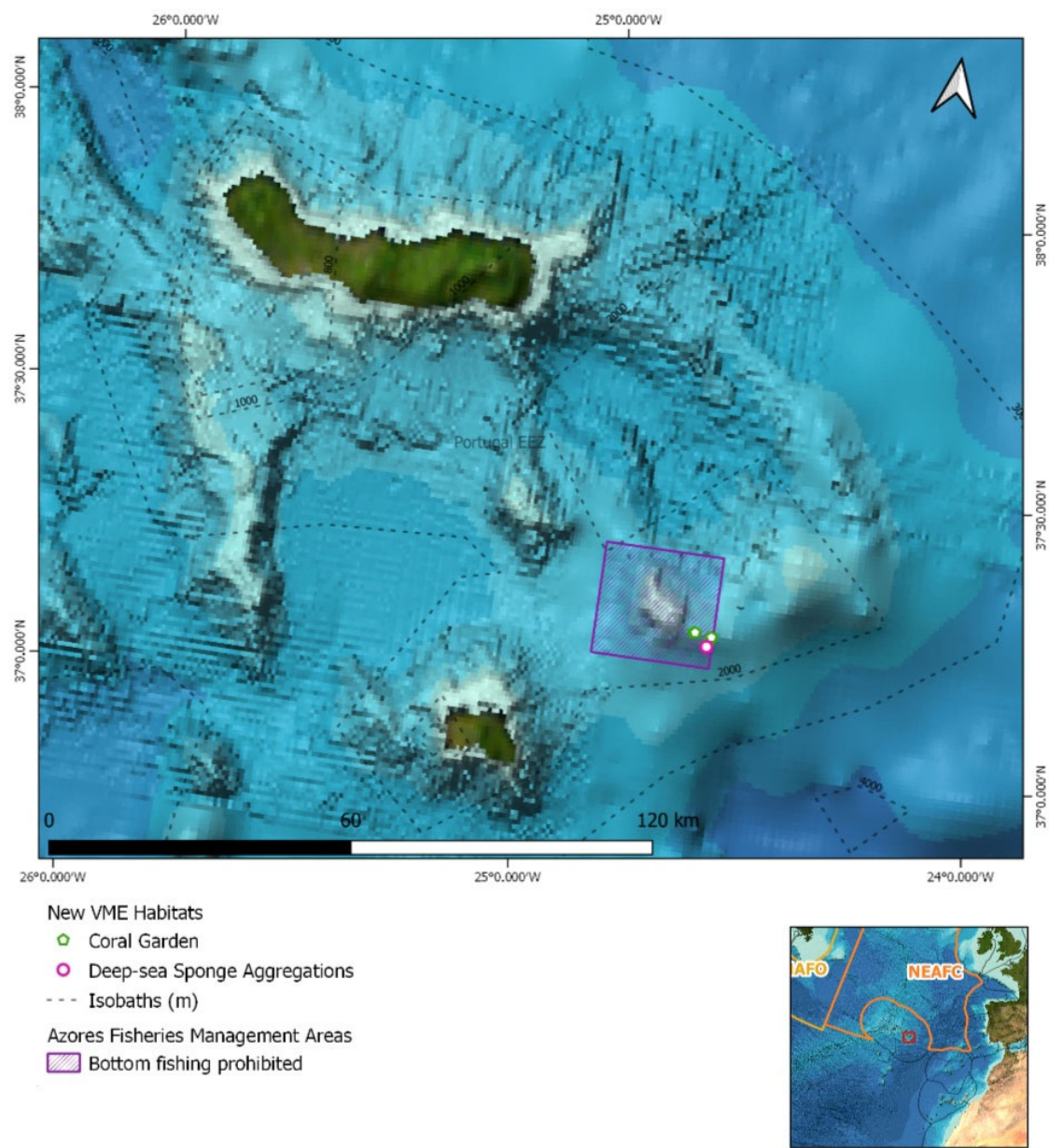


Figure 16 New VME records within EU waters, re-submitted to the VME database in 2019 for the Formigas Seamount.

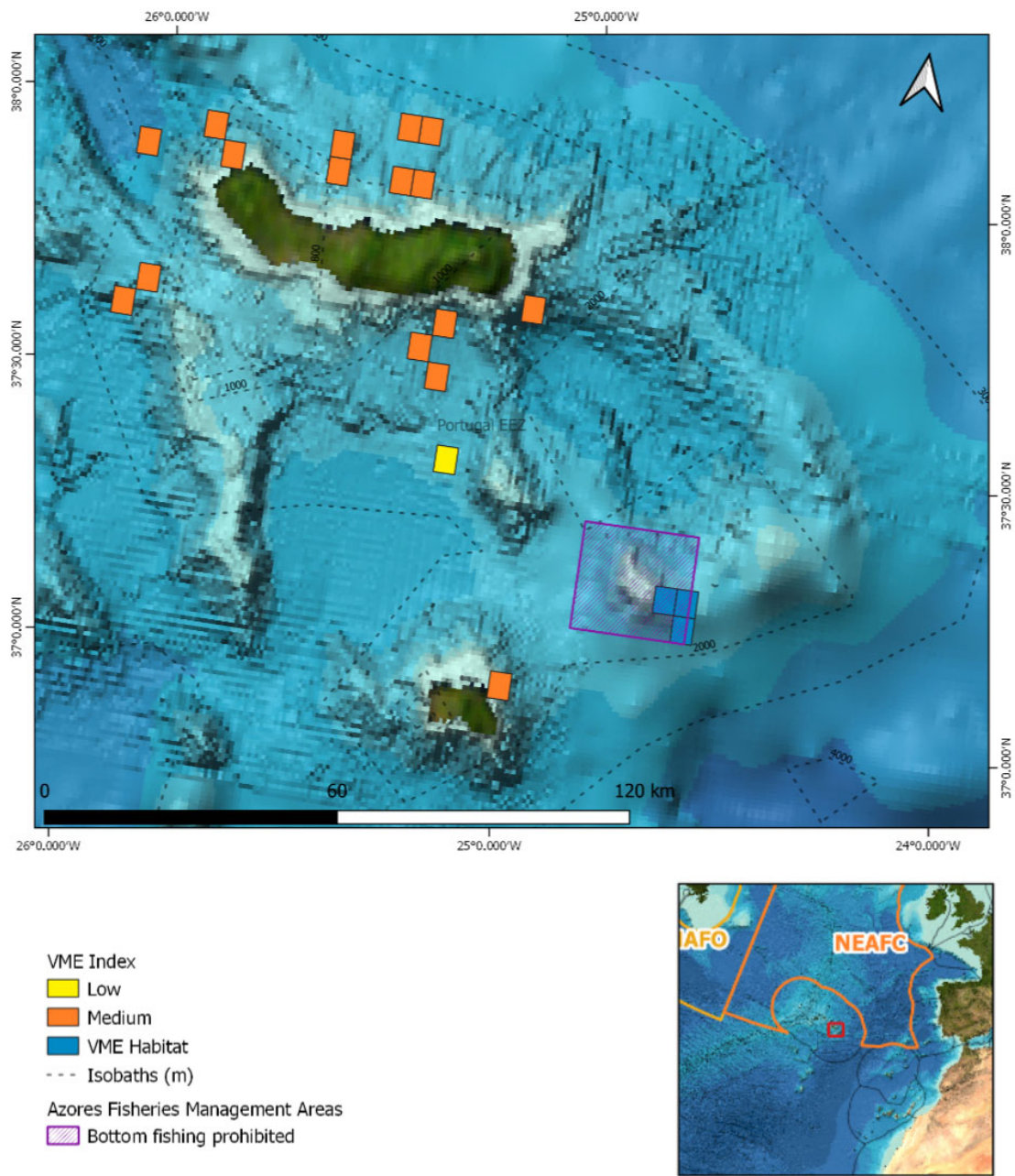


Figure 17 VME index (based on all records for the area) for the Formigas Seamount, showing the presence of actual VME (blue cells) and the likelihood of encountering a VME within each grid cell (ranging from low to high).

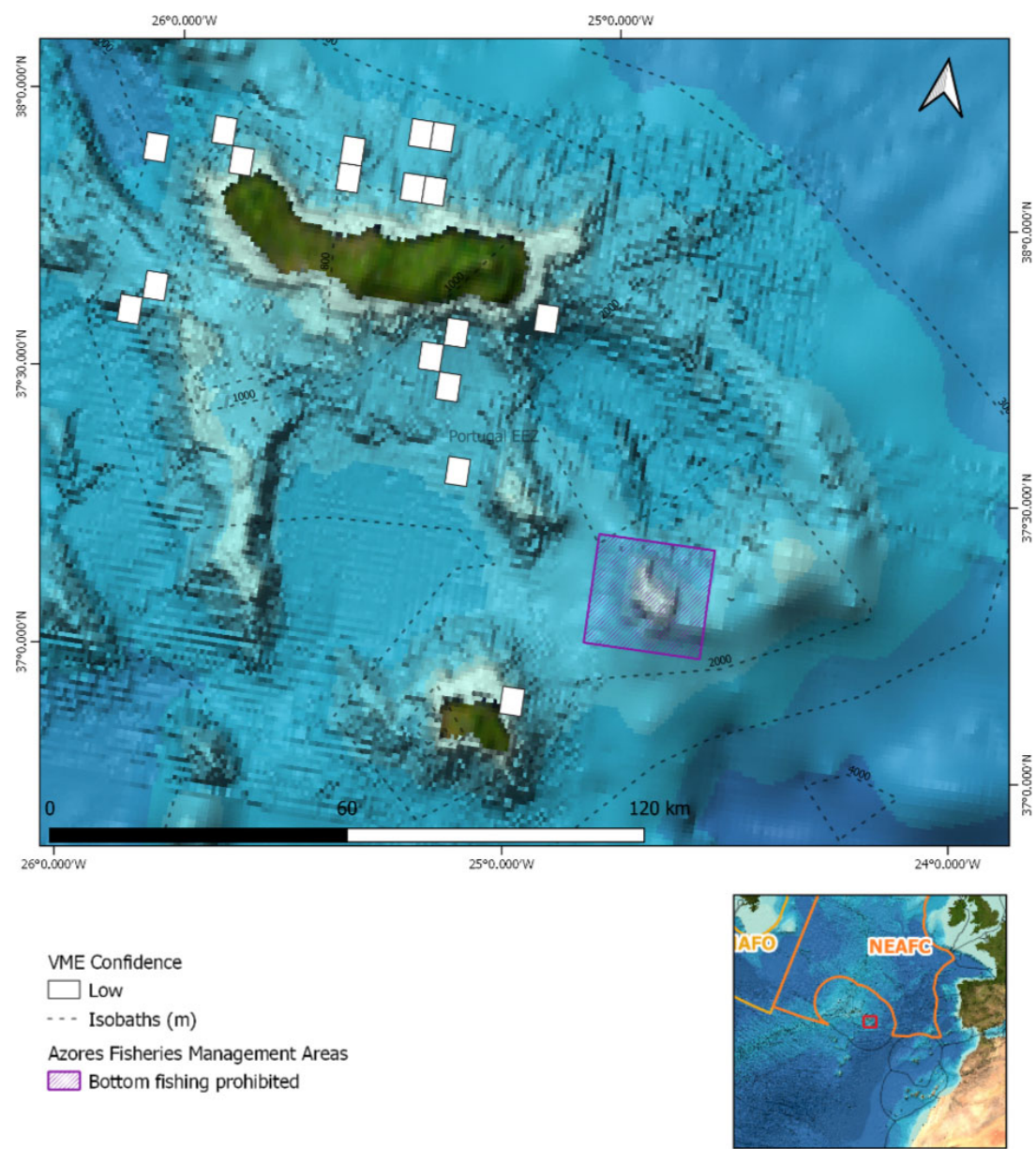


Figure 18 VME index confidence (based on all records for the area) for the Formigas Seamount (ranging from low to high).

Basis of the advice

Methods

ICES has applied its standard VME weighting algorithm to VME indicator and habitat records held within the ICES VME database for the Faroe–Shetland Channel, the Rosemary Bank Seamount, the Wyville Thomson Ridge, Rockall Bank, the Irish/Scottish continental shelf, the Spanish continental shelf (Gulf of Cadiz), and the Formigas Seamount. This database consists of two main types of records: (1) confirmed VMEs that are based on, e.g. high quality underwater imagery; and (2) VME indicator records with varying degrees of confidence, e.g. trawl bycatch records or low-quality underwater imagery. These two types of records are treated separately. The VME weighting system assigns each VME indicator a score of between 1 and 5, based on expert judgement for each of the five FAO criteria for what classifies a habitat as a VME, and also examines whether record abundances are above or below NEAFC weight thresholds. The final VME weighting output shows the likelihood of encountering a VME for each approx. 5' × 5' grid cell. Those grid cells that contain bona fide records of VME habitat are shaded blue, and are excluded from the VME weighting algorithm. The VME index for the areas detailed above are shown in Figures 2, 5, 8, 11, 14, and 17. Associated with the VME index layer is a confidence layer, which includes a consideration of the survey method, number of surveys, and age of the data. Cells range from low confidence (white) to high (black). The VME index confidence layer for the areas detailed above are shown in Figures 3, 6, 9, 12, 15, and 18.

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