



## **Conservation objectives & management advice**

### **WEST OF SCOTLAND POSSIBLE MPA**

AUGUST 2019

This advice provides JNCC's assessment of the conservation objectives for the proposed protected features of the West of Scotland possible Marine Protected Area (pMPA) and on the management measures considered necessary to conserve or recover the proposed protected features accordingly. It is intended to support discussions with stakeholders around the implementation of management measures, should the pMPA be taken forward to the point of designation.

The advice does not attempt to cover all possible future activities that could be carried out within the pMPA. However, it does consider a range of activities and developments considered to be taking place within the pMPA at the point of writing and focuses on whether JNCC consider there could be a risk to the proposed protected features not achieving their conservation objectives. On this basis, the information JNCC provides as part of this current advice document is necessarily generic and therefore indicative.

The following documents provide further information about the West of Scotland pMPA and should be read in conjunction with this advice:

Data Confidence Assessment – provides an overview of JNCC's confidence in the data underpinning presence and extent for the proposed protected features of the pMPA.

Ecological Overview Document – provides an overview of our ecological understanding of the pMPA; both in terms of the proposed protected features and the geographic area more broadly with regards to its functional significance.

# CONSERVATION OBJECTIVES AND MANAGEMENT ADVICE FOR THE WEST OF SCOTLAND POSSIBLE MPA

## 1. Introduction

This document presents JNCC's conservation objectives and advice on management for the West of Scotland possible MPA (pMPA). At the point of public consultation, this pMPA becomes a material consideration in the licensing process. As well as supporting the public consultation on deep-sea marine reserves, this advice must be referred to if you are:

- intending to carry out any licensed activity in or near the pMPA and need to find out how to operate within the law;
- an authority providing advice on specific proposals; and/or
- an authority responsible for putting management measures in place.

This advice has been developed to take into account existing activities and management measures already in place within the pMPA. In so doing, it considers management requirements over and above measures which are actively in place.

## 2. Conservation objectives

The pMPA is intended to safeguard the conservation of a range of Scotland's deep-sea marine habitats, wildlife, geology and undersea landforms i.e. the proposed protected features of the pMPA. Please see Figures 1a, 1b, 1c and 1d for an overview of the distribution of the proposed Vulnerable Marine Ecosystems (VME), sedimentary habitats, fish species and key geodiversity/large scale features of the pMPA respectively.

Conservation objectives set out the desired ecological quality of the proposed protected features. The overall ambition for the proposed protected features of the pMPA is that:

- so far as they are already at favourable condition, they remain in such condition; and
- so far as they are not already in favourable condition, they be brought into such condition, and remain in such condition.

With respect to **burrowed mud, coral gardens, cold-water coral reefs, deep-sea sponge aggregations, offshore deep-sea muds, offshore subtidal sands and gravels and seamount communities** within the pMPA, this means that:

Their extent is stable or increasing; and  
Their structures and functions, quality, and the composition of their characteristic biological communities (which includes a reference to the diversity and abundance of marine fauna forming part of or inhabiting that habitat) are such as to ensure that they remain in a condition which is healthy and not deteriorating;

Any temporary deterioration in condition is to be disregarded if the habitats are sufficiently healthy and resilient to enable their recovery from such deterioration.  
Any alteration to that feature brought about entirely by natural processes is to be disregarded.

With respect to **Blue ling, Leafscale Gulper shark, Gulper shark, Orange roughy, Portuguese dogfish, Round-nose grenadier** within the pMPA, this means that:

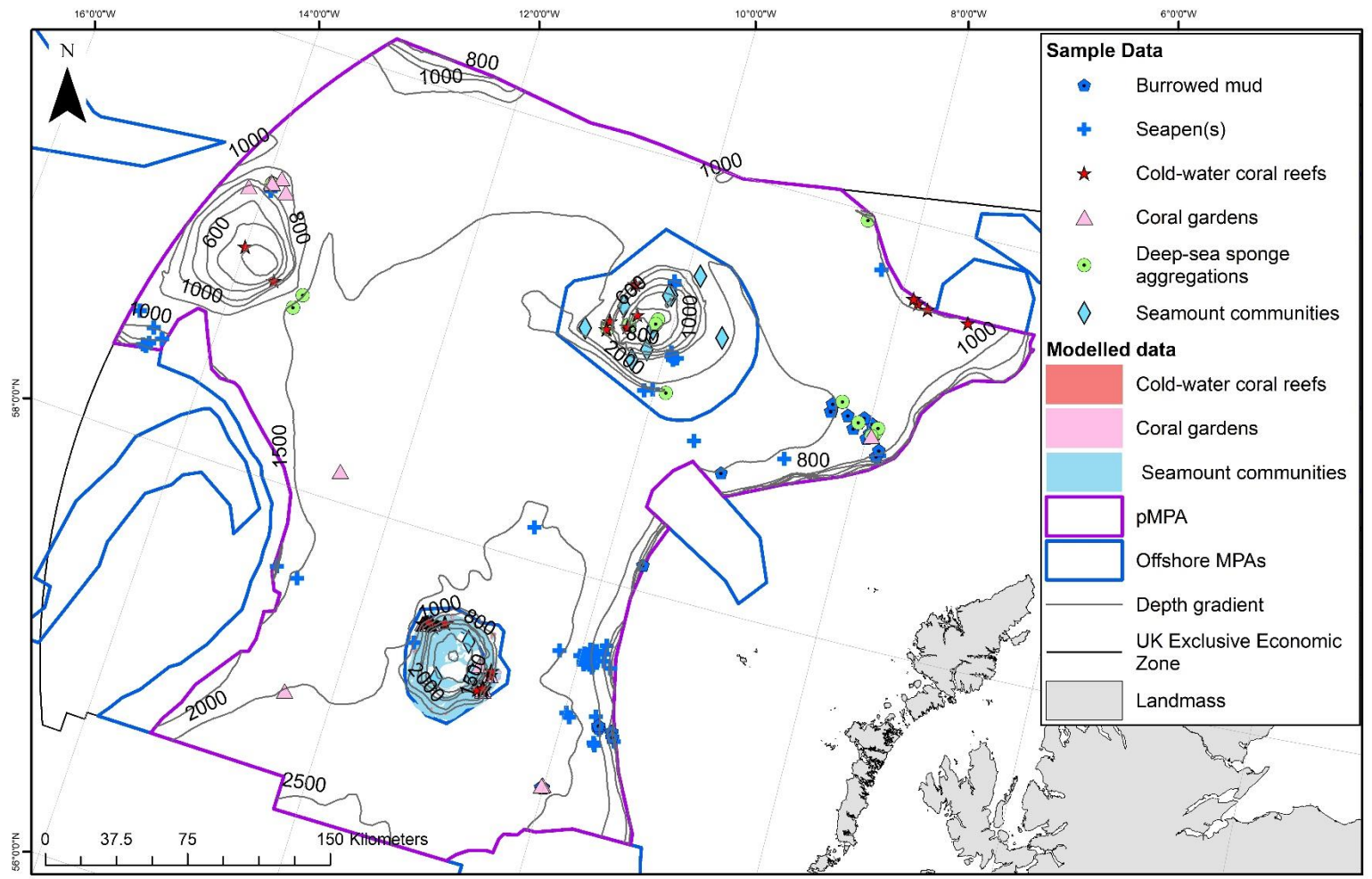
The quality and quantity of their habitat; and  
The composition of their population is such that they ensure that the population is maintained in numbers which enable it to thrive.

Any temporary reduction of numbers is to be disregarded if the population of **Blue ling, Leafscale Gulper shark, Gulper shark, Orange roughy, Portuguese dogfish, Round-nose grenadier** is thriving and sufficiently resilient to enable its recovery from such reduction.  
Any alteration to a feature brought about entirely by natural processes is to be disregarded.

With respect to the geological and geomorphological features characterising the proposed protected Key Geodiversity Areas within the pMPA; **bioherm reefs, cliff, continental slope turbidite canyons, erosional scour fields, iceberg ploughmarks, ice-distal and glacimarine facies, ice-proximal and ice-contact facies (e.g. mega-scale glacial lineations), large bank (Palaeogene igneous centre), parasitic cones, prograding wedge, scour moat, seamount, sediment drifts, sediment wave field, slide deposit, slide scars, small scale ridges, sub-glacial tills, turbidite accumulations** and the large-scale feature **seamounts** this means that:

Their extent, component elements and integrity are maintained;  
Their structure and functioning are unimpaired; and  
Their surface remains sufficiently unobscured for the purposes of determining whether the aforementioned points are satisfied.

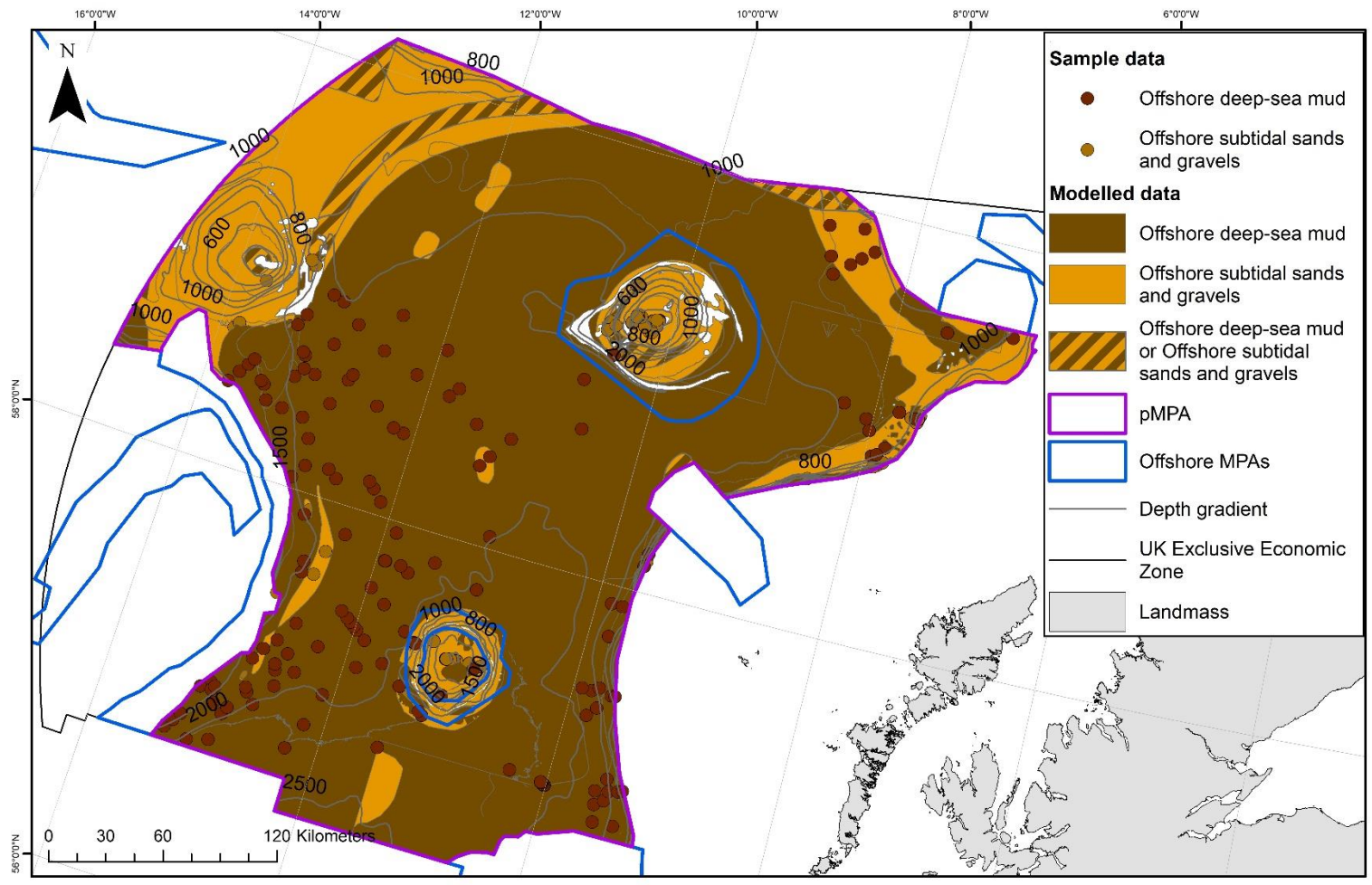
Any obscuring of the geological and geomorphological features characterising the proposed protected Key Geodiversity Areas within the pMPA entirely by natural processes is to be disregarded.






© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



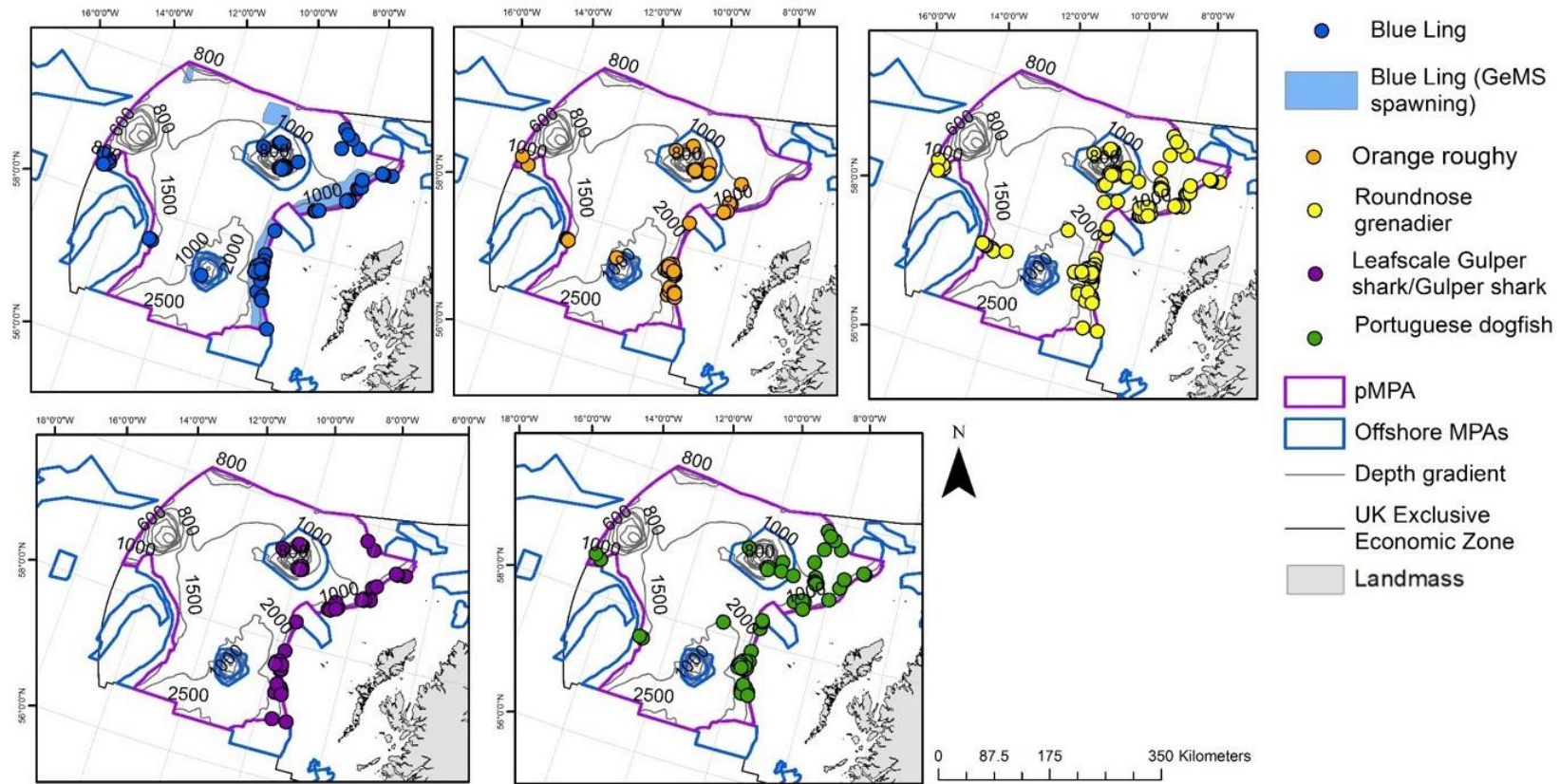
**Figure 1a.** The West of Scotland pMPA and the distribution of proposed protected Vulnerable Marine Ecosystem (VME) features.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.

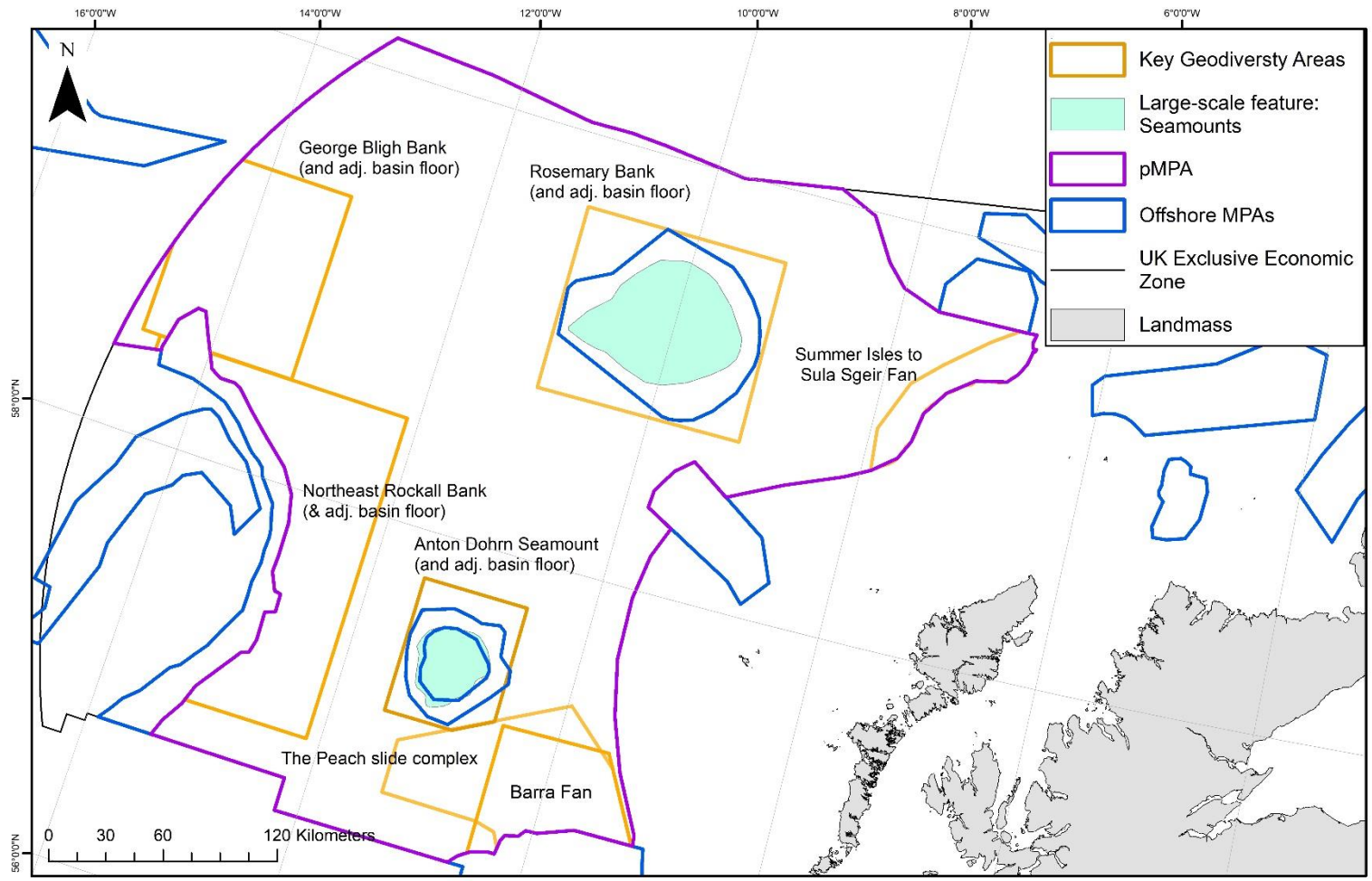
**Figure 1b.** The West of Scotland pMPA and the distribution of proposed protected sedimentary habitat features.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.

marine scotland Scottish Government Rìghdhaas na h-Alba gov.scot

Figure 1c. The West of Scotland pMPA and the distribution of proposed protected deep-sea fish species.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
Map Projection: Europe Albers Equal Area Conic.



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

**Figure 1d.** The West of Scotland pMPA and the distribution of proposed protected Key Geodiversity Areas, and large-scale features (seamounts).



### 3. Advising on conservation objectives

To advise on the management requirements for the pMPA, it is critical to understand whether the proposed protected features are currently achieving favourable condition. A feature which is failing to achieve favourable condition needs to be managed in a way that allows it to recover to favourable condition. In such instances a 'recover' objective is advised. A feature which is achieving favourable condition needs to be managed in a way as to conserve it in favourable condition. In such instances a 'conserve' objective is advised. It is important to note that a conserve objective does not preclude the need for additional management; now or in the future.

Direct sources of evidence are available from which to infer condition of the proposed protected deep-sea fish species of this pMPA (based on information available from the International Council for the Exploration of the Seas (ICES) and the Oslo-Paris Convention (OSPAR)). However, no such direct sources of evidence exists for the other proposed protected features of the pMPA. As such, a proxy assessment has been undertaken based on the exposure of the proposed protected features to pressures associated with activities taking place to which they are considered to be sensitive. A pressure is the mechanism through which an activity has an effect on any part of the proposed protected features. The nature of the pressure is determined by activity type, intensity and distribution. Different activities may cause the same pressure, e.g. fishing using bottom-contacting gears and oil and gas extraction both cause surface abrasion that can damage the seabed, although the scale and intensity of the pressure can vary between activities. The same activity can cause a range of different pressures. Proposed protected features are considered sensitive to activities that could adversely affect their condition, especially if they are unable or are very slow to recover from damage as in the case of Vulnerable Marine Ecosystems. With increasing vulnerability i.e. exposure to and sensitivity to pressures, the less likely a proposed protected feature is to be in favourable condition.

Unless otherwise stated, JNCC have drawn from sensitivity information contained in [Marine Scotland's Feature Activity Sensitivity Tool](#) (FeAST) and [JNCC's Pressures Activities Database](#) to undertake an assessment of the likely condition of each proposed protected feature of the pMPA where direct information on feature condition is not available (Table 1). In cases where a proxy assessment has been undertaken, levels of certainty are set as 'uncertain' by virtue of the fact that likely condition is inferred from the levels of exposure to human activities associated with pressures to which the proposed protected features are considered to be sensitive. In each case, Table 1 provides a brief rationale underpinning JNCC's judgement as to whether the feature is likely to be in favourable condition (and therefore needs to be conserved) or unfavourable condition (and therefore needs to be recovered). Figures 2a-v provide an overview of JNCC's understanding of the activities taking place within the pMPA which was used as a basis for undertaking the exposure assessment that informed this advice. Recover objectives are advised for all the proposed protected features of the pMPA with the exception of blue ling., This reflects our understanding that these features are highly sensitive to combined pressures associated with historical and ongoing activities, with prolonged recovery times expected and/or as a conclusion from direct sources of evidence.

The geological/geomorphological features representing the proposed protected Key Geodiversity Areas of the pMPA are not considered to be sensitive to the pressures associated with human activities taking place within the pMPA (after Brooks, 2013<sup>1</sup>). With respect to the

---

<sup>1</sup> available at: <https://www.nature.scot/sites/default/files/2018-09/Publication%202013%20-%20SNH%20Commissioned%20Report%20590%20->

large-scale features, their biological components broadly comprise the proposed protected habitat and VME features for the pMPA, for which individual objectives are advised reflecting our understanding of their sensitivity to pressures from human activities as previously described. As such, JNCC considers there to be no significant risk to the geological/geomorphological or large-scale features not achieving their conservation objectives and a default conserve objective is advised accordingly.

**Table 1.** Proposed protected feature objectives, level of certainty and rationale underpinning the assessment.

| Proposed protected feature            | Feature objective                | Certainty | Rationale   |
|---------------------------------------|----------------------------------|-----------|---|
| Burrowed mud                          | Recover to favourable condition  | Uncertain | The proposed protected feature is considered moderately or highly vulnerable to combined pressures associated with demersal fishing activity and oil and gas exploration/maintenance.   |
| Cold-water coral reefs                | Recover to favourable condition  | Uncertain | The proposed protected feature is considered moderately or highly vulnerable to combined pressures associated with demersal fishing activity.   |
| Coral gardens                         | Recover to favourable condition  | Uncertain | The proposed protected feature is considered moderately or highly vulnerable to combined pressures associated with demersal fishing activity and oil and gas exploration/maintenance.   |
| Deep-sea sponge aggregations          | Recover to favourable condition  | Uncertain | The proposed protected feature is considered moderately or highly vulnerable to combined pressures associated with demersal fishing activity and oil and gas exploration/maintenance.   |
| Offshore deep-sea muds                | Recover to favourable condition  | Uncertain | The proposed protected feature is considered moderately or highly vulnerable to combined pressures associated with demersal fishing gears, telecommunication cable laying/maintenance and oil and gas exploration/maintenance.    |
| Offshore subtidal sands and gravels   | Recover to favourable condition  | Uncertain | The proposed protected feature is considered moderately or highly vulnerable to combined pressures associated with demersal fishing activity, telecommunication cable laying/maintenance and oil and gas exploration/maintenance. |
| Seamount communities                  | Recover to favourable condition  | Uncertain | The proposed protected feature is considered moderately or highly vulnerable to combined pressures associated with demersal fishing activity.   |
| Blue Ling ( <i>Molva dypterygia</i> ) | Conserve at favourable condition | Certain   | The pMPA includes several conservation measures designed  |

[%20%20Assessing%20the%20sensitivity%20of%20geodiversity%20features%20in%20Scotlands%200seas%20to%20pressures%20associated%20with%20human%20activities.pdf](#)

|   |                                 |         |   |
|---|---------------------------------|---------|---|
|   |                                 |         | to protect blue ling during the spawning season <sup>2</sup> and ICES advice suggests positive trends in stock and exploitation status across the region <sup>3</sup>                                   |
| Leafscale gulper shark<br>( <i>Centrophorus squamosus</i> ) /<br>Gulper shark<br>( <i>Centrophorus granulosus</i> ) | Recover to favourable condition | Certain | ICES advice suggests a strong declining trend across the region <sup>4</sup> and OSPAR have identified the species to be under threat/subject to decline across the North-east Atlantic <sup>56</sup> . |
| Orange roughy<br>( <i>Hoplostethus atlanticus</i> )   | Recover to favourable condition | Certain | ICES advice suggests a strong declining trend across the region <sup>7</sup> and OSPAR have identified the species to be under threat/subject to decline across the North-east Atlantic <sup>8</sup> .  |
| Portuguese dogfish<br>( <i>Centroscymnus coelolepis</i> )   | Recover to favourable condition | Certain | ICES advice suggests a strong declining trend across the region <sup>9</sup> and OSPAR have identified the species to be under threat/subject to decline across the North-east Atlantic <sup>10</sup> . |
| Round-nose grenadier<br>( <i>Coryphaenoides rupestris</i> )   | Recover to favourable condition | Certain | ICES advice suggests a strong declining trend across the region <sup>11</sup> .   |

<sup>2</sup> Available at: <https://academic.oup.com/icesjms/article/67/3/494/733188>

<sup>3</sup> Available at: <http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/bli-5b67.pdf>

<sup>4</sup> Available at: [http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/Special\\_requests/eu.2018.11.pdf](http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/Special_requests/eu.2018.11.pdf)

<sup>5</sup> Available at: <https://www.ospar.org/documents?d=7215>

<sup>6</sup> Available at: <https://www.ospar.org/documents?d=7214>

<sup>7</sup> Available at: <http://ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/ory-comb.pdf>

<sup>8</sup> Available at: <https://www.ospar.org/documents?d=7257>

<sup>9</sup> Available at: [http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/Special\\_requests/eu.2018.11.pdf](http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/Special_requests/eu.2018.11.pdf)

<sup>10</sup> Available at: <https://www.ospar.org/documents?d=7211>

<sup>11</sup> Available at: [http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/Special\\_requests/eu.2018.11.pdf](http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/Special_requests/eu.2018.11.pdf)

## 4. Management advice

Management advice for this pMPA sets out where JNCC consider that additional management of activities may be required to achieve the conservation objectives for the pMPA. Management advice is provided in the context of human activities known to take place and management already in place within the pMPA.

### 4.1 Overview of activities taking place

#### Telecommunications cables

Three telecommunications cables run through the west and north of the pMPA (Figures 2a and 2b), which might have localised impacts on the proposed protected features: offshore deep-sea muds and offshore subtidal sands and gravels.

#### Oil and gas exploration

Oil and gas exploration is taking place within the pMPA. Figures 2a and 2b show JNCC's understanding of the known distribution of:

- Oil and gas infrastructure (comprising eight wells clustered on the continental slope north-west of Lewis where activity is currently considered suspended although it is unclear if infrastructure has been removed and or remains in place and continues to impact proposed protected features);
- Licence awarded blocks for further potential development (in the west of the pMPA and in the north and south of the continental slope within the pMPA). It is understood no activity is currently occurring in this area and therefore not considered to be impacting any features.

#### Military activity

Military of Defence practice areas occur in the south-eastern part of the pMPA (Figure 2c), south of the Geikie slide. This overlaps with the proposed protected features: burrowed mud (including sea-pens), cold-water coral reefs, coral gardens, seamount communities, offshore deep-sea muds, offshore subtidal sands and gravels and the deep-sea fish proposed features. There is limited information on what this activity entails. It is therefore not possible to determine whether it is capable of impacting any of the proposed protected features.

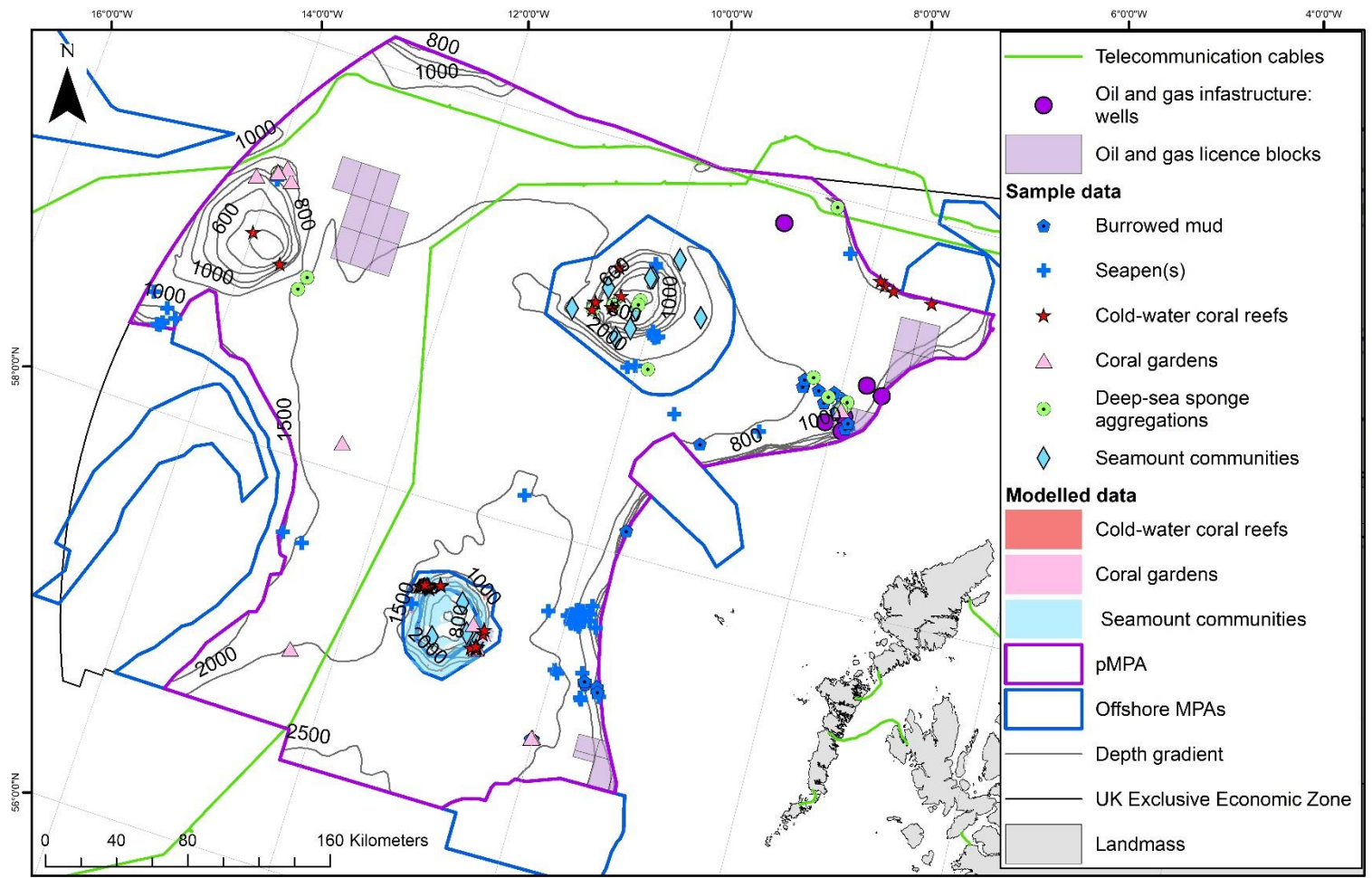
#### Shipping

Shipping occurs within the pMPA, but at low levels compared with other areas of UK and Scottish waters. Figure 2d shows an Automatic Identification System (AIS) grid of vessel densities from 2015 and anonymised vessel track lines from 2014. Shipping activity overlaps with the proposed protected features: burrowed mud (including sea-pens), cold-water coral reefs, coral gardens, deep-sea sponge aggregations, seamount communities, offshore deep-sea muds, offshore subtidal sands and gravels and the deep-sea fish proposed features. The features are not considered to be sensitive to i.e. impacted by, pressures associated with shipping taking place within the pMPA.

#### Noise activity

Noise activity can encompass pile driving, geophysical surveys (seismic, sub bottom profiling and multibeam echosounders), explosives and some acoustic deterrent devices. Seismic activity occurs throughout the site but occurs more frequently in the east of the pMPA along the continental shelf (Figure 2e). Seismic activity overlaps with the proposed protected features: burrowed mud (including sea-pens), cold-water coral reefs, coral gardens, deep-sea sponge aggregations, seamount communities, offshore deep-sea muds, offshore subtidal sands and gravels and the proposed deep-sea fish features. Based on evidence currently

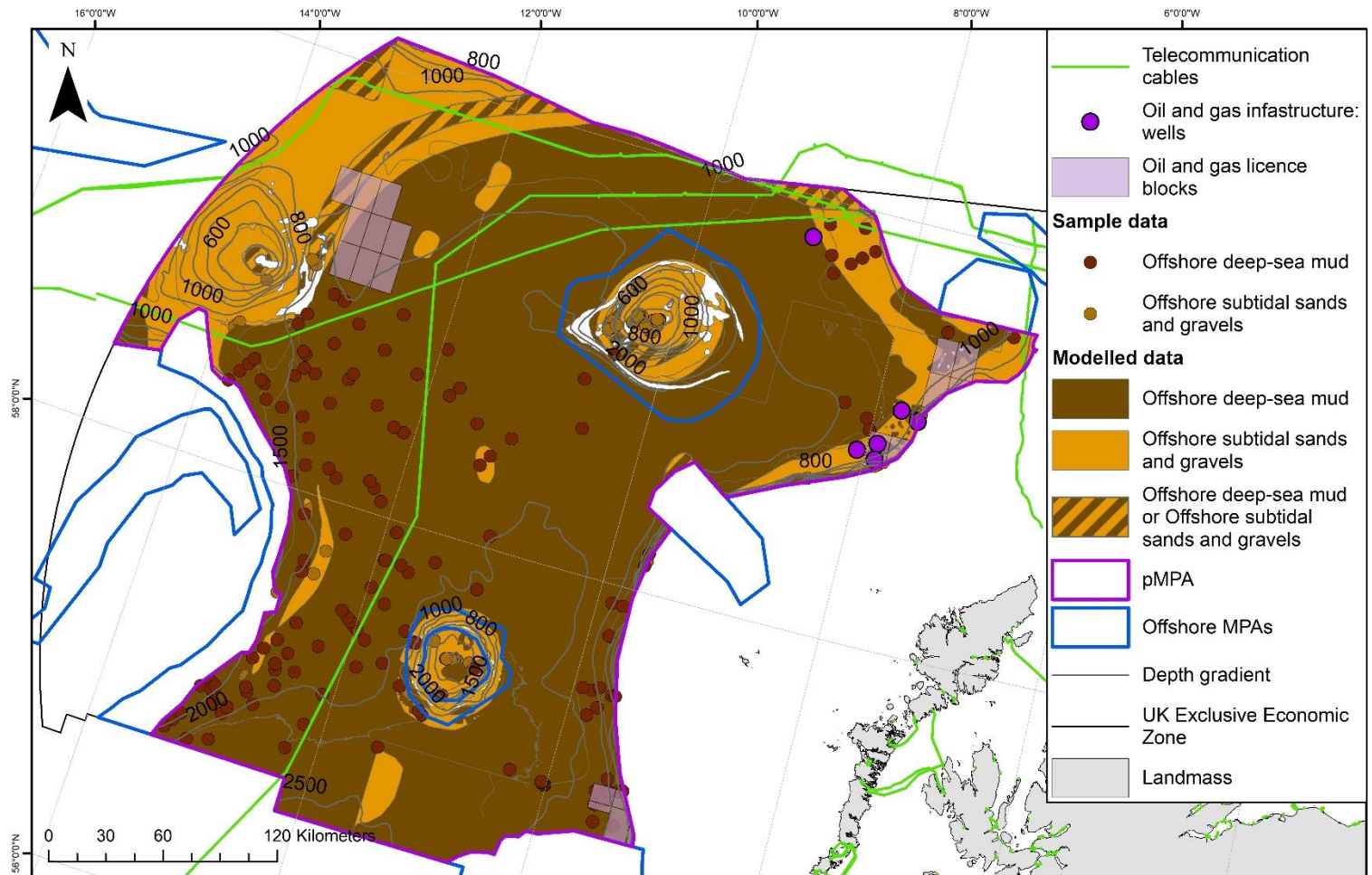
available the features are not considered to be sensitive to i.e. impacted by, pressures associated with noise taking place within the pMPA (FeAST, Carroll *et al.* 2017).



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.

marine scotland Scottish Government Riaghaltas na h-Alba gov.scot

**Figure 2a.** Location of cables, and oil and gas infrastructure (wells) and licence blocks in relation to proposed protected VME features.

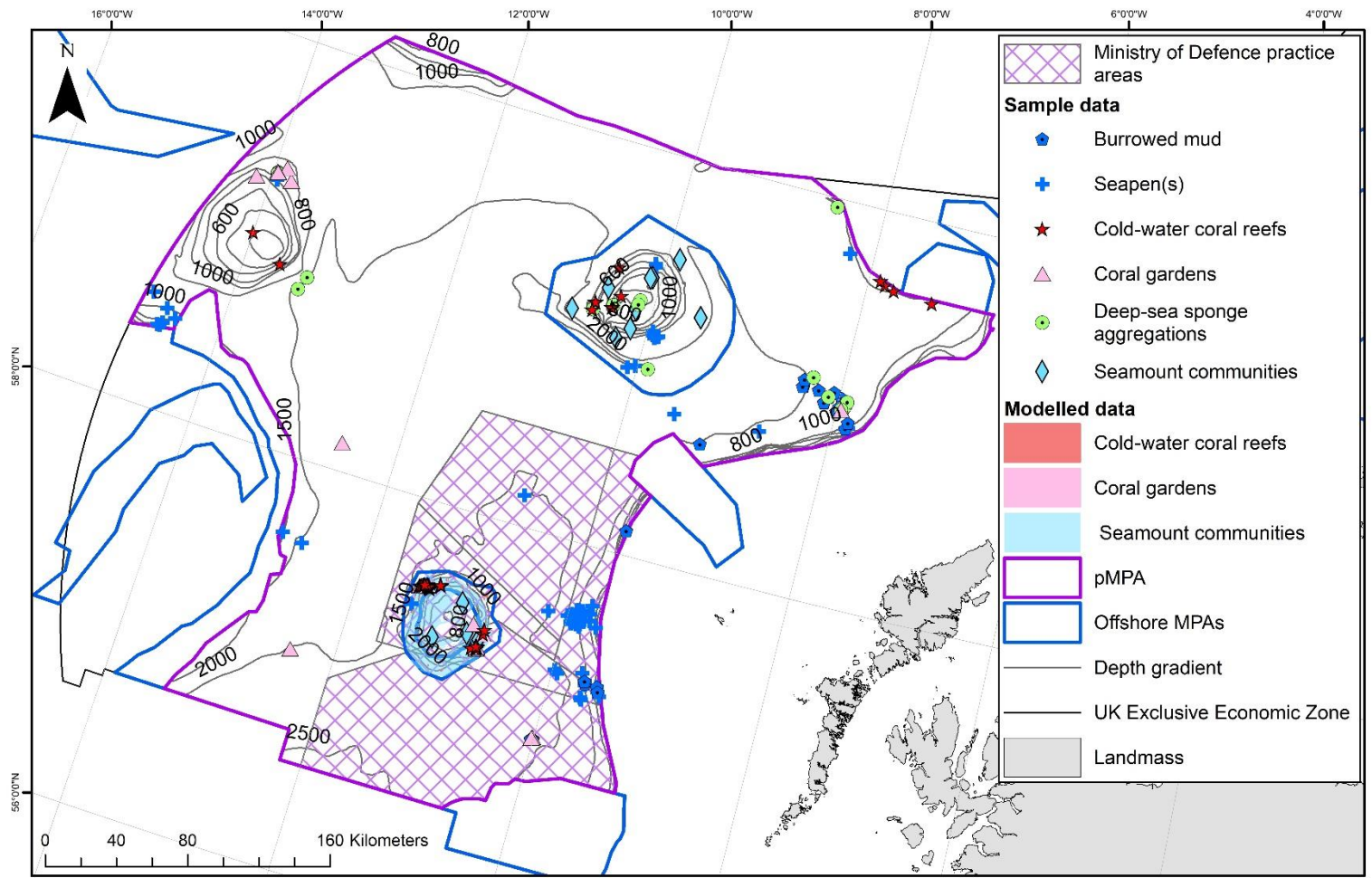


© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
 Map Projection: Europe Albers Equal Area Conic.



Scottish Government  
 Riaghaltas na h-Alba  
 gov.scot

**Figure 2b.** Location of cables, and oil and gas infrastructure (wells) and licence blocks in relation to proposed protected sedimentary features.

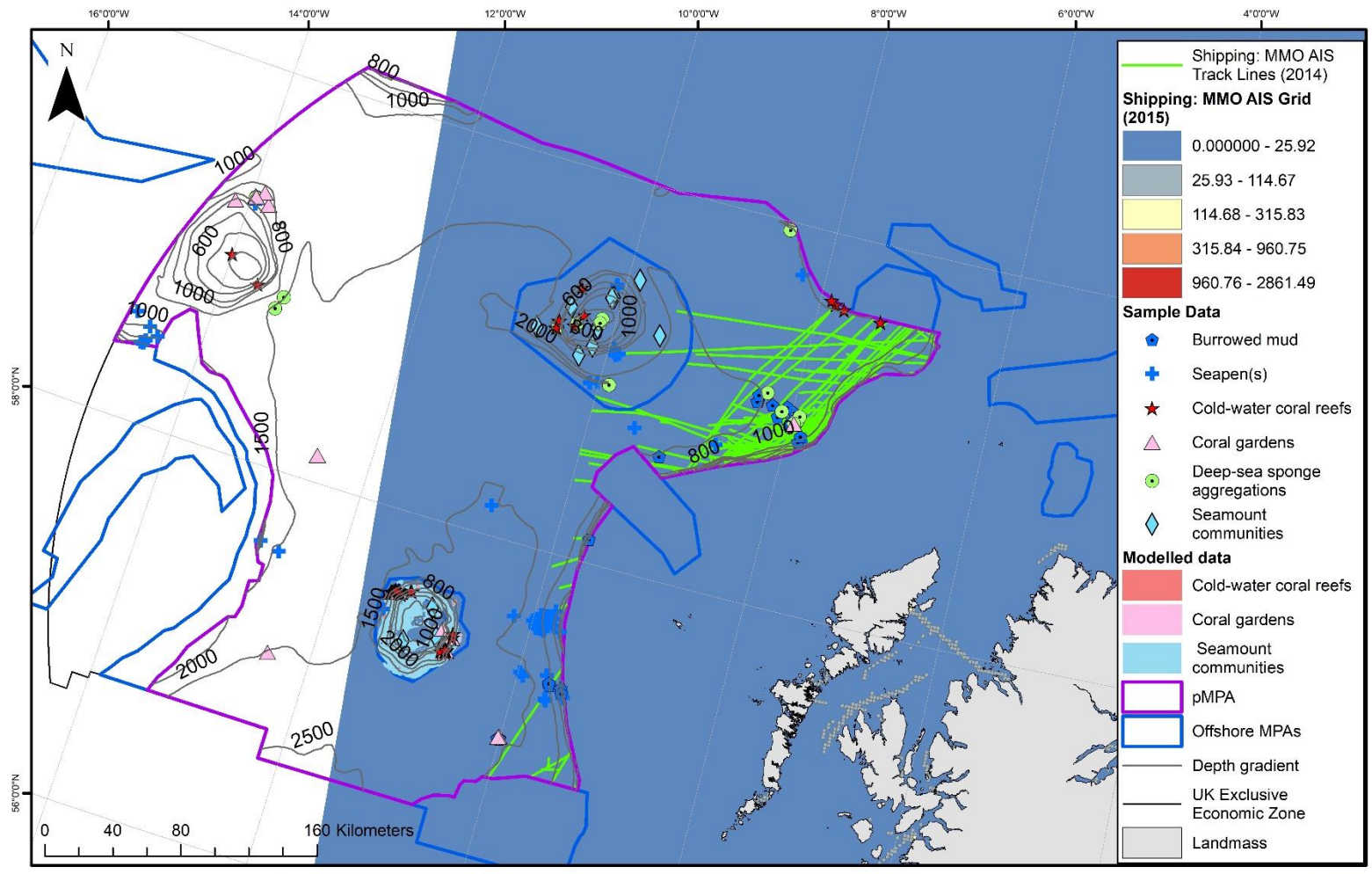


© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.

marine scotland Scottish Government Riaghaltas na h-Alba gov.scot

Figure 2c. Location of Military activity in relation to proposed protected VME features.

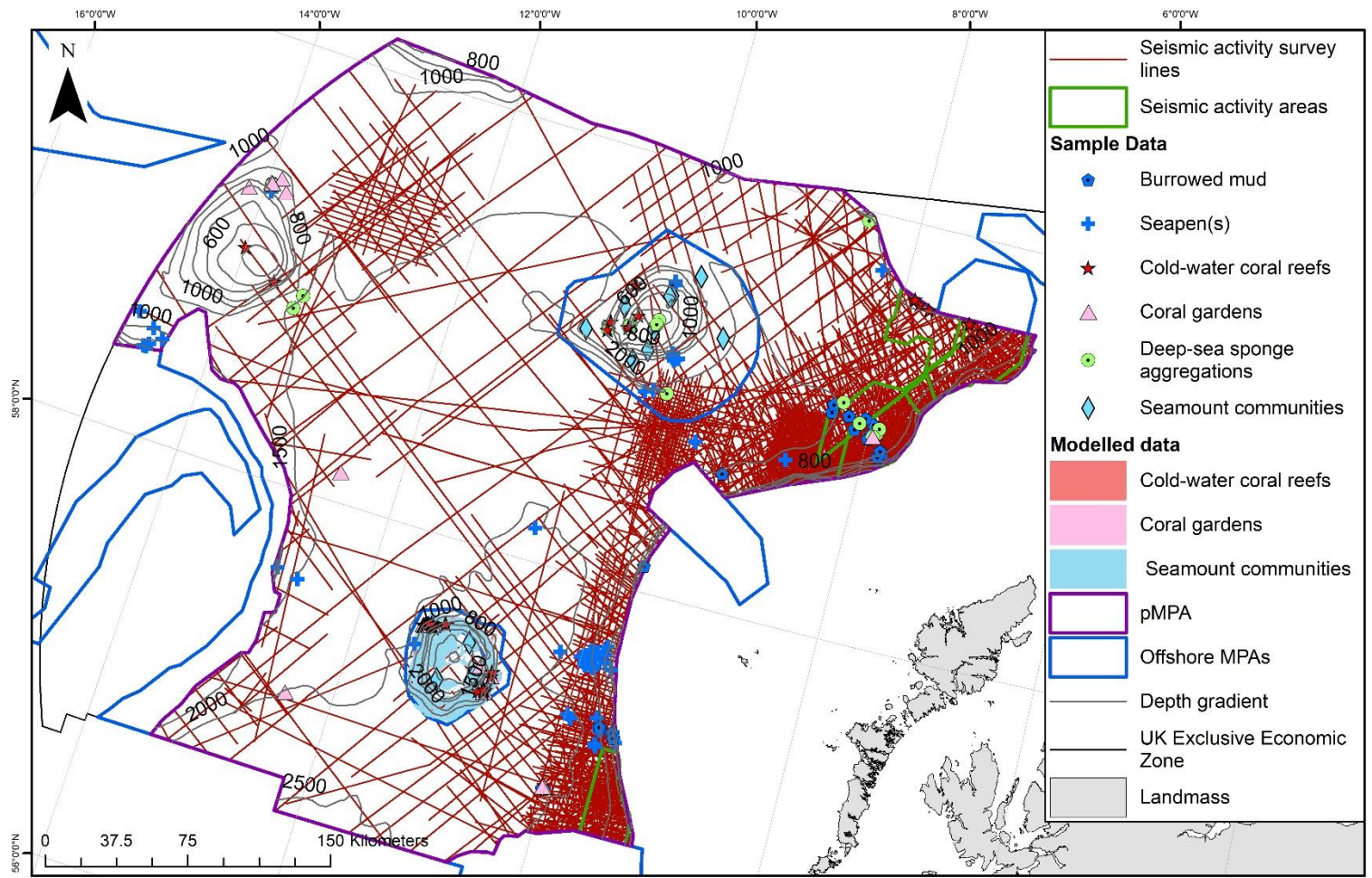




© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



**Figure 2d.** Location of shipping activity in relation to proposed protected VME features.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



**Figure 2e.** Location of seismic activity in relation to proposed protected VME features.

### **Fishing activity**

UK and non-UK mobile demersal fishing activity is reported to be taking place across the pMPA, albeit at relatively low levels. Effort is concentrated along the continental slope, particularly in the north-east of the pMPA and also on the topographic features of the seamounts and George Bligh Bank (Figures 2f-j). Data are unavailable to support an overview of mobile demersal fishing activity beyond 2016 at the time of writing. This activity is reported as occurring throughout the pMPA every year between 2009 and 2016. At the time of this advice the most recent available data on fishing activity is provided by Vessel Monitoring System (VMS) summed effort data 2009-2016. The deep-sea Regulation (EU) [2016/2336](#), which prohibits all bottom trawling activity below 800m came into force at the end of 2016 and there should be no demersal trawling effort below 800m since that time. However, historic fishing activity is considered relevant in assessing the condition of the proposed protected features of the pMPA. Many of the proposed protected features' communities are long-lived and slow growing, with recovery from impacts anticipated to take a relatively long time i.e. they are expected to still be impacted.

Demersal mobile fishing activity was until 2016 concentrated along the continental slope, particularly in the north-east of the pMPA and also on the topographic features of the seamounts and George Bligh Bank. Demersal trawling also occurred along the north boundary of the site and effort was scattered across the Rockall Basin in the southern half of the pMPA (Figures 2f-j) as well. Demersal mobile fishing activity overlapped with all of the proposed protected biodiversity features: burrowed mud (including sea-pens), cold-water coral reefs, coral gardens, deep-sea sponge aggregations, seamount communities, offshore subtidal sands and gravels, offshore deep-sea mud, Blue ling, Leafscale gulper shark / Gulper shark, Orange roughy, Portuguese dogfish and Roundnose grenadier.

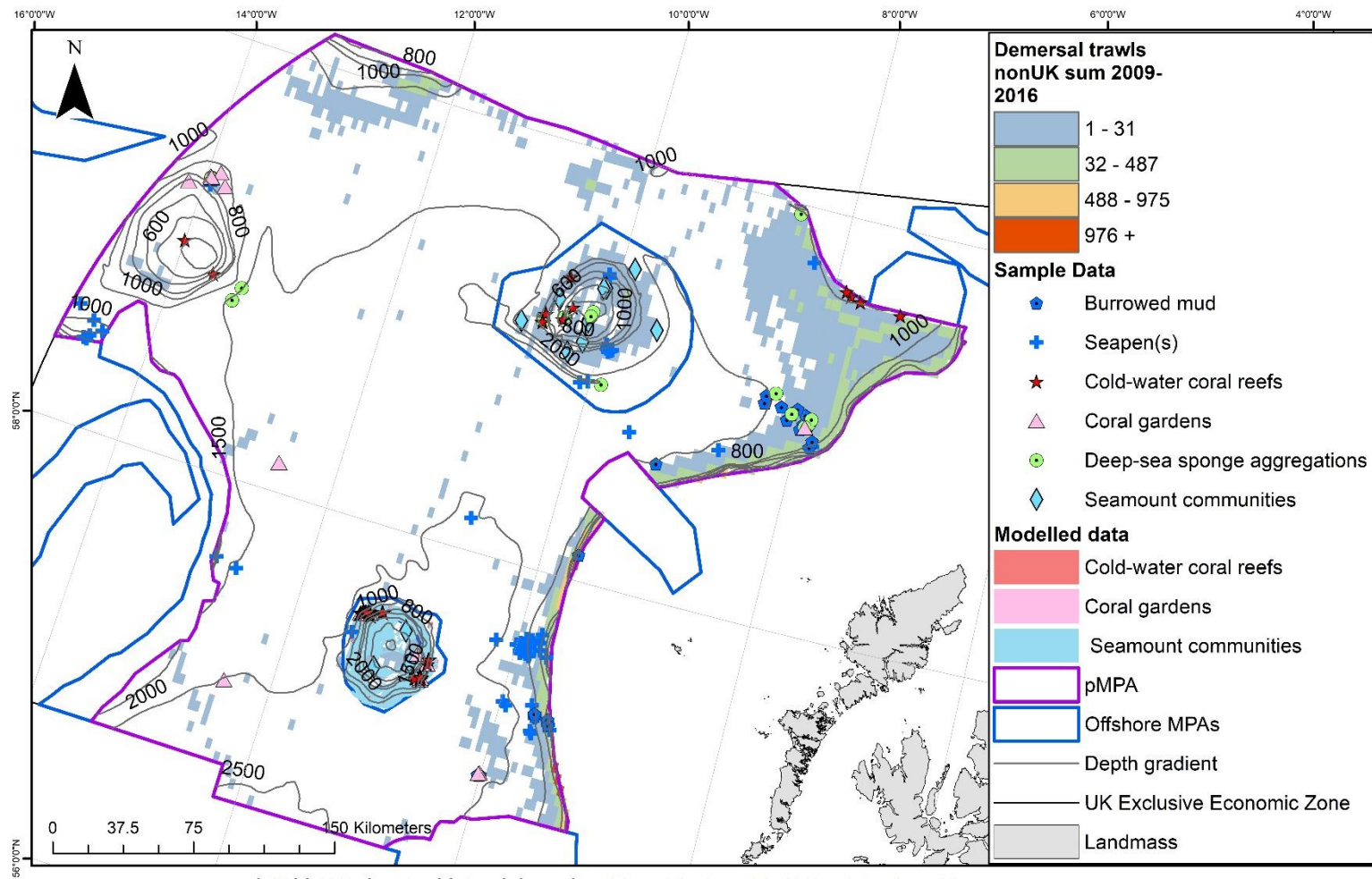
According to available VMS data, bottom contacting static fishing activity, (gillnets, hooks and lines, pots) is concentrated over topographic features such as Anton Dohrn Seamount, Rosemary Bank Seamount and George Bligh Bank, but also occurs along the continental shelf and there is scattered activity (from gillnets and hooks and lines) over the Rockall basin (Figures 2k-v). Impacts can arise from hooks, lines, nets and ropes becoming entangled with corals and other fragile species, including 'plucking' them from the seabed during hauling (Mortensen *et al.*, 2005; Muñoz *et al.*, 2010; OSPAR, 2010). Static gears (set nets, hook and lines, pots and traps) can produce localised physical seabed effects depending on how far they travel over the seabed during setting or retrieval (Gubbay, 2015).

### **Scientific research**

The area of the pMPA has been subject to numerous scientific research cruises to collect further information about the marine environment. Sampling methods range from non-interactive to potentially damaging e.g. extractive and disturbing the benthos. There is insufficient information to be able to comment on the nature, location or frequency of scientific research in the pMPA.

### **Deep-sea mining**

It is not thought that deep-sea mining is occurring in the pMPA or therefore impacting any of the proposed protected features. However, there is the potential for the pMPA to be of interest for deep-sea mining activities in the future; most notably for the mining of ferromanganese crusts that occur on the seamounts within the pMPA. Deep-sea mining would be capable of damaging the proposed protected biodiversity features of the site were it to occur.

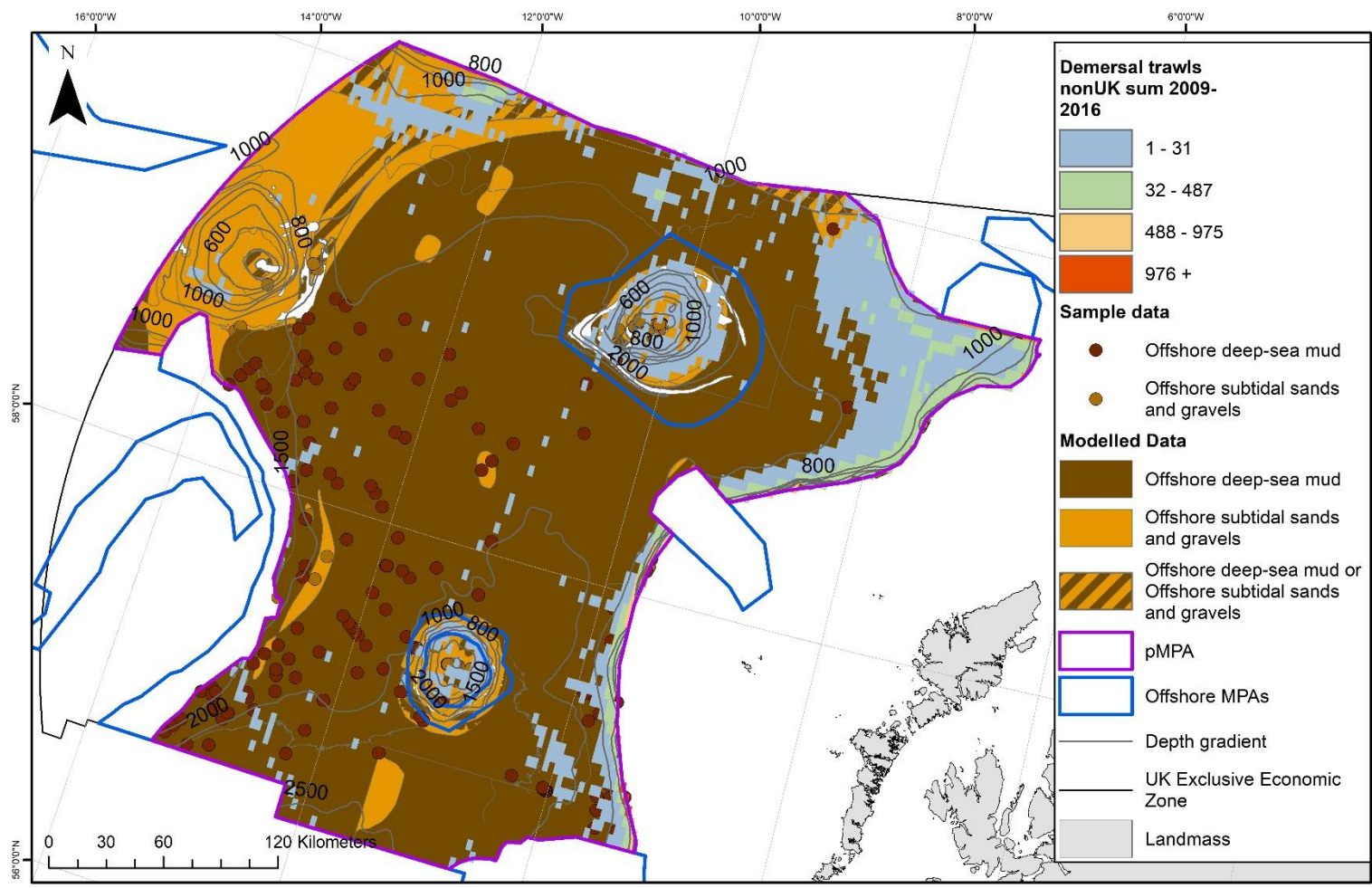


© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

**Figure 2f.** Location of demersal trawls non-UK fishing activity (2009-2016) in relation to proposed protected VME features.



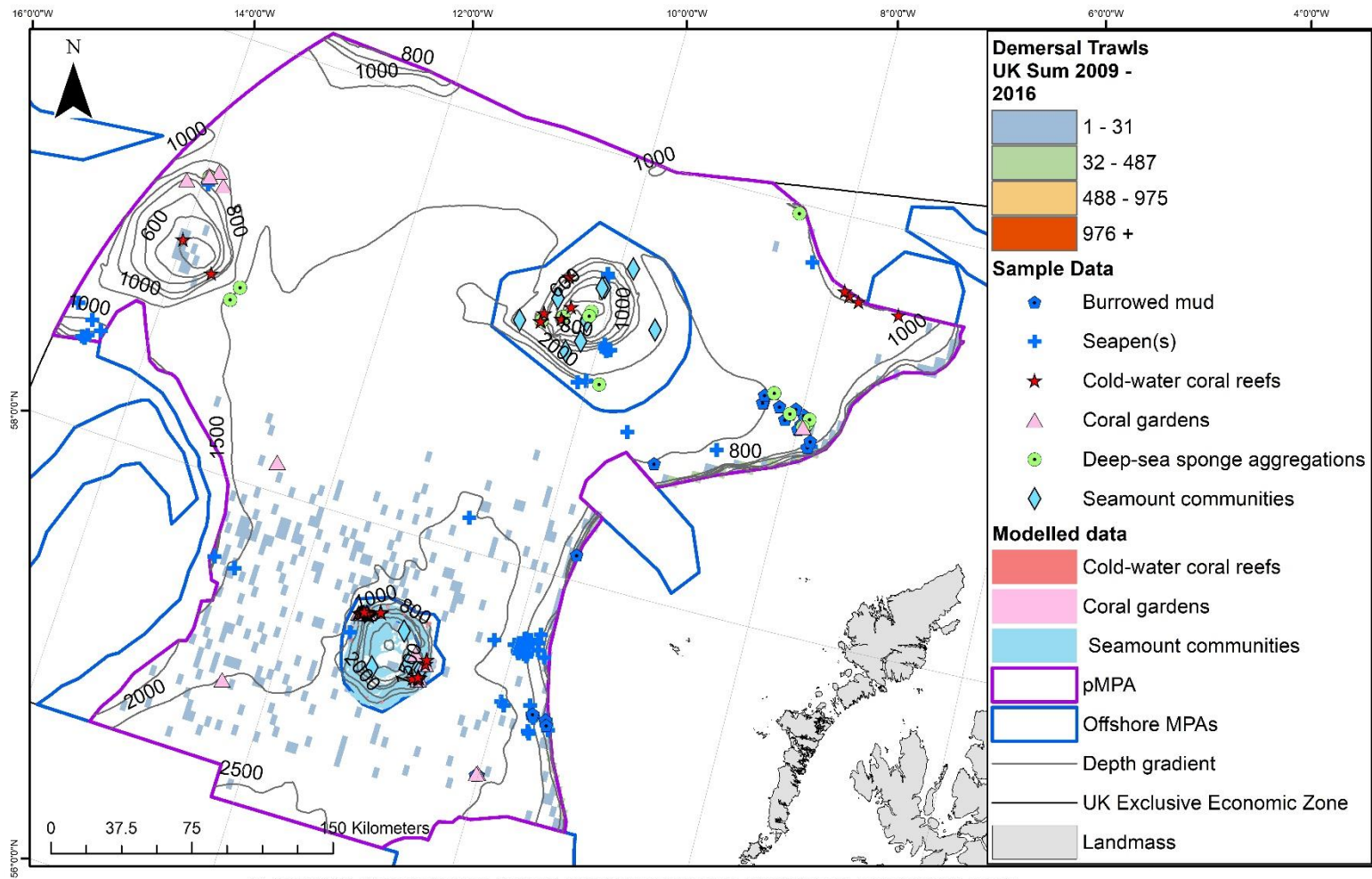
© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
Map Projection: Europe Albers Equal Area Conic.

marine  
scotland



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

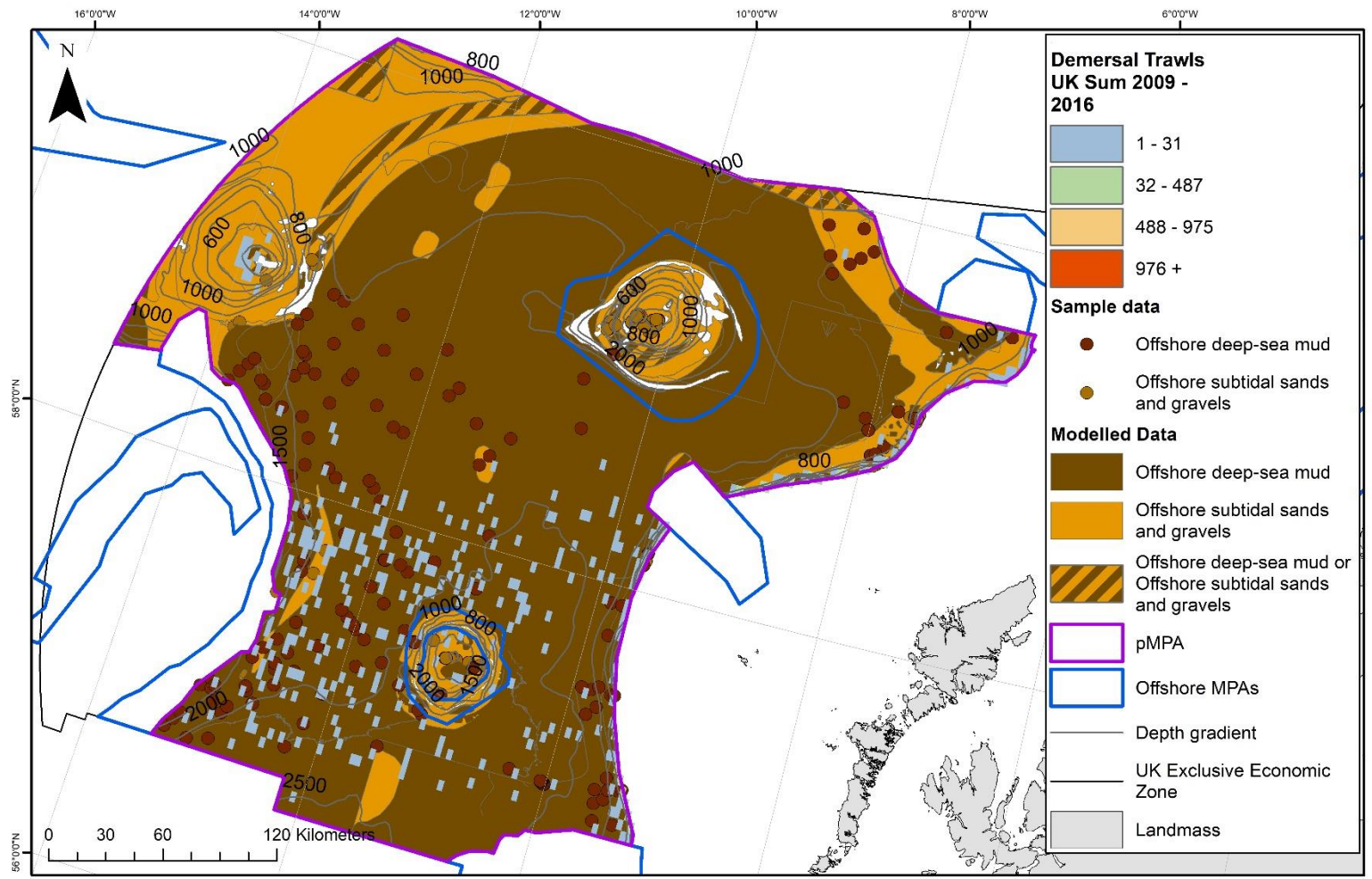
**Figure 2g.** Location of demersal trawls non-UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
 Map Projection: Europe Albers Equal Area Conic.

marine scotland Scottish Government Rìghaltas na h-Alba gov.scot

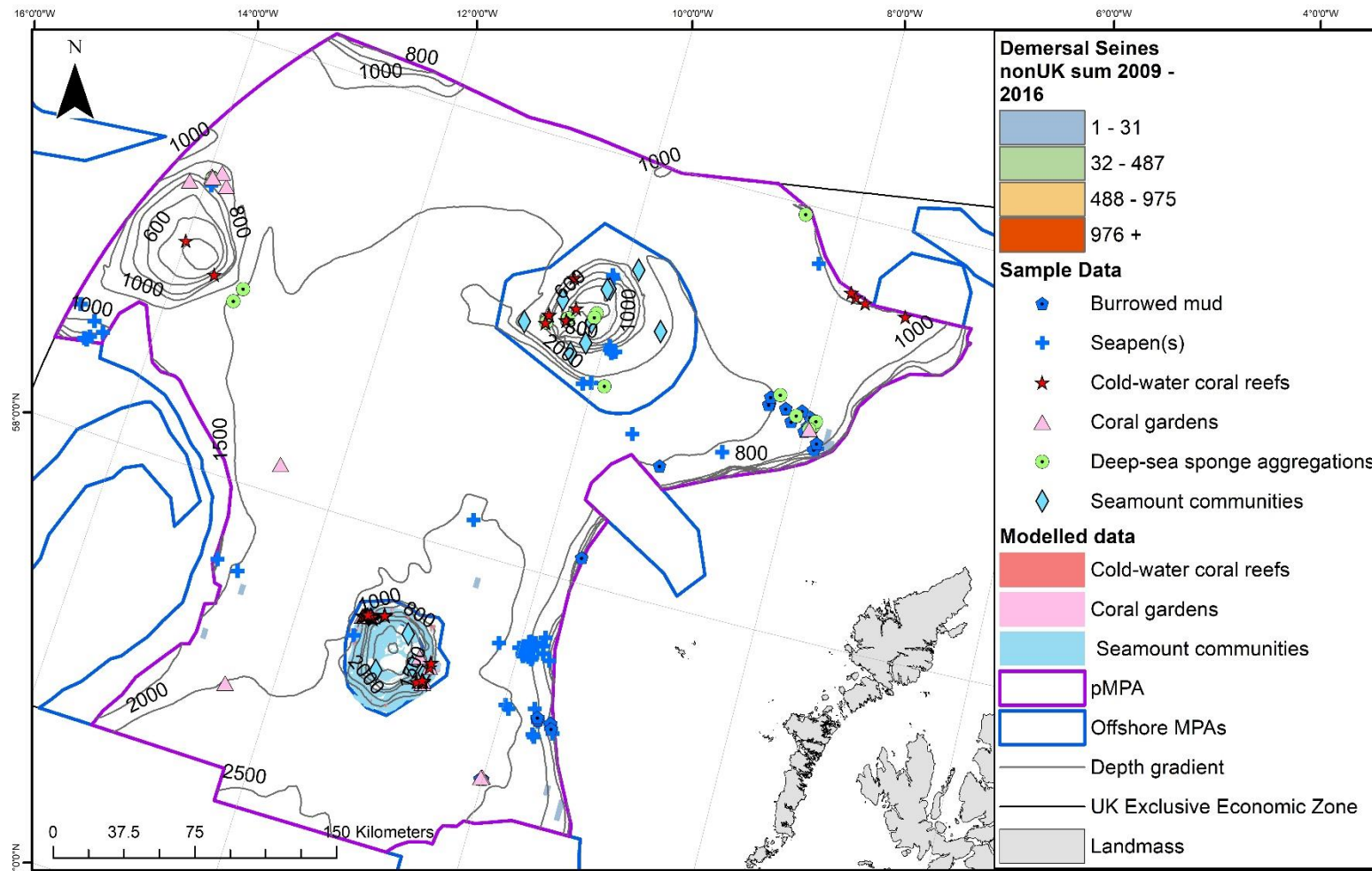
**Figure 2h.** Location of demersal trawls UK fishing activity (2009-2016) in relation to proposed protected VME features.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



**Figure 2i.** Location of demersal trawls UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.



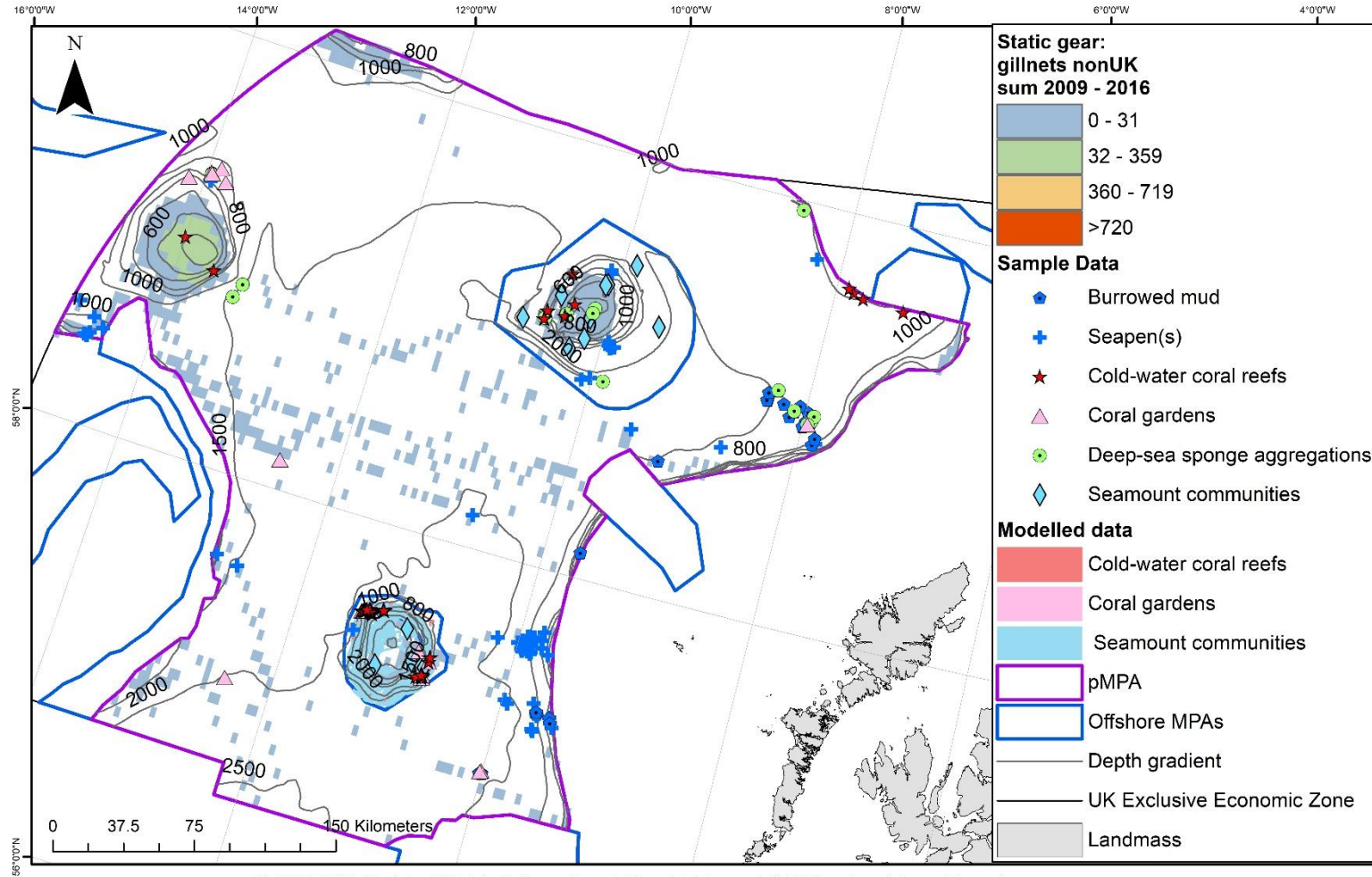
© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

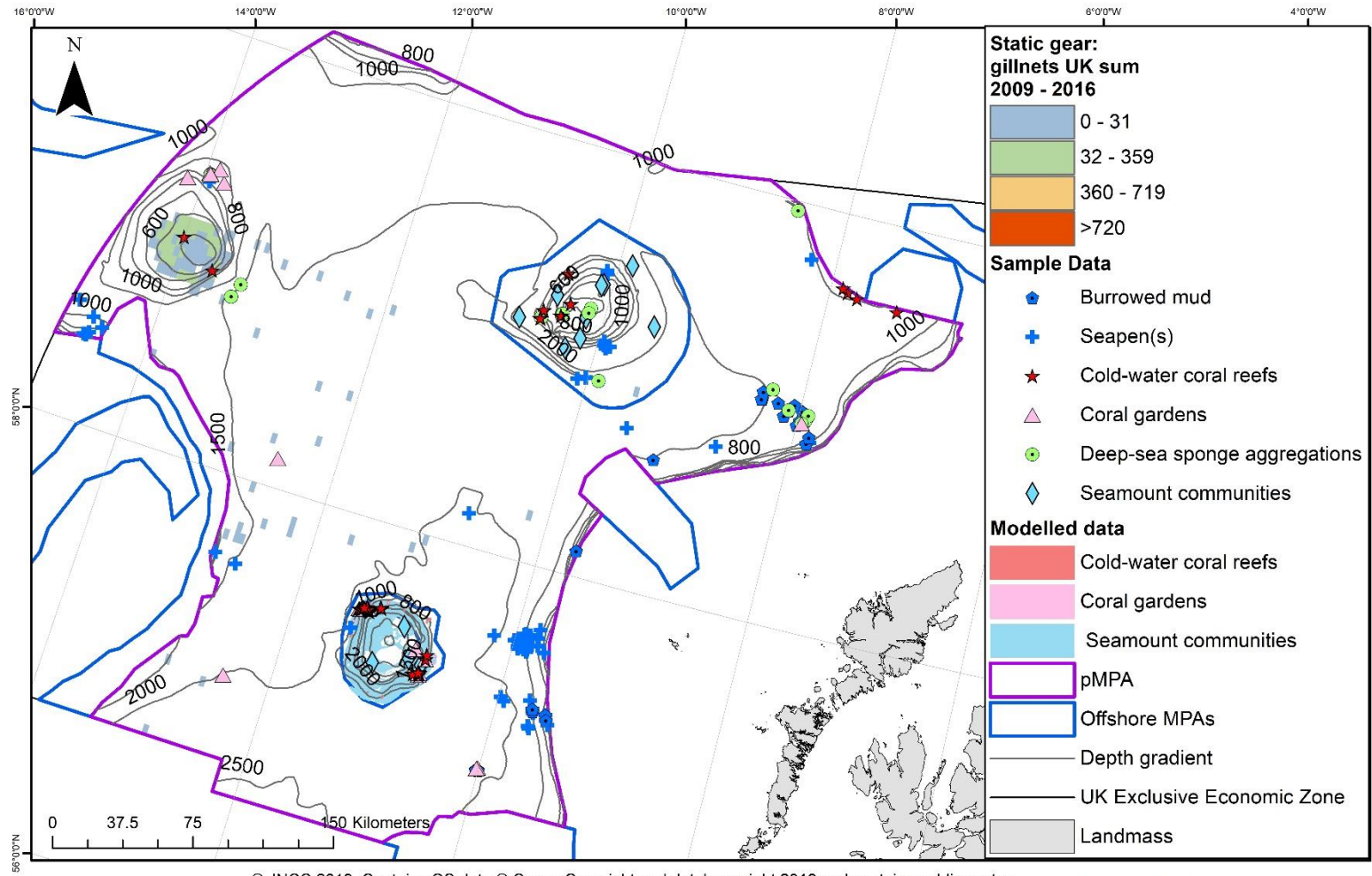
**Figure 2j.** Location of demersal seines non-UK fishing activity (2009-2016) in relation to proposed protected VME features.



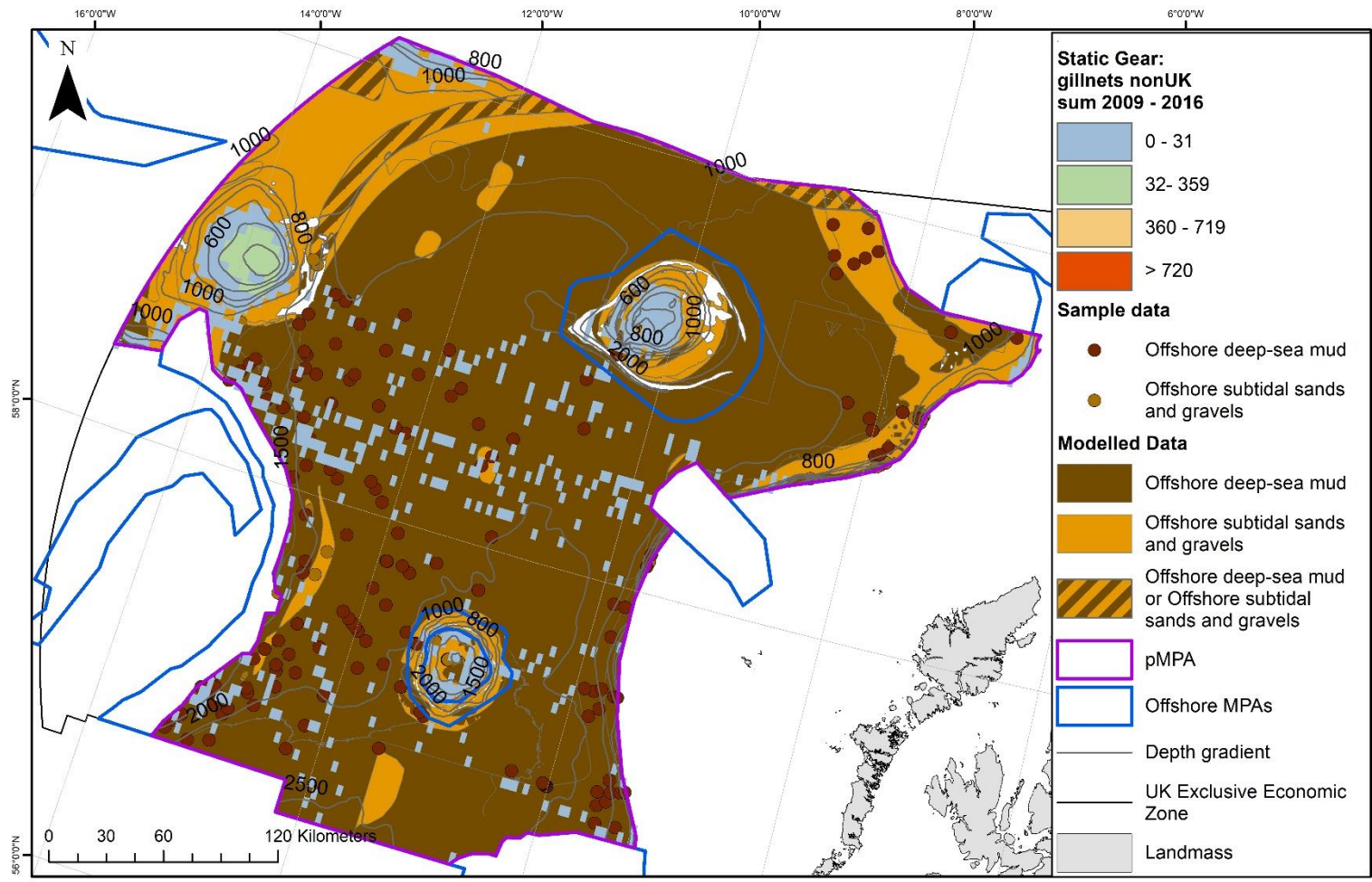


© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.

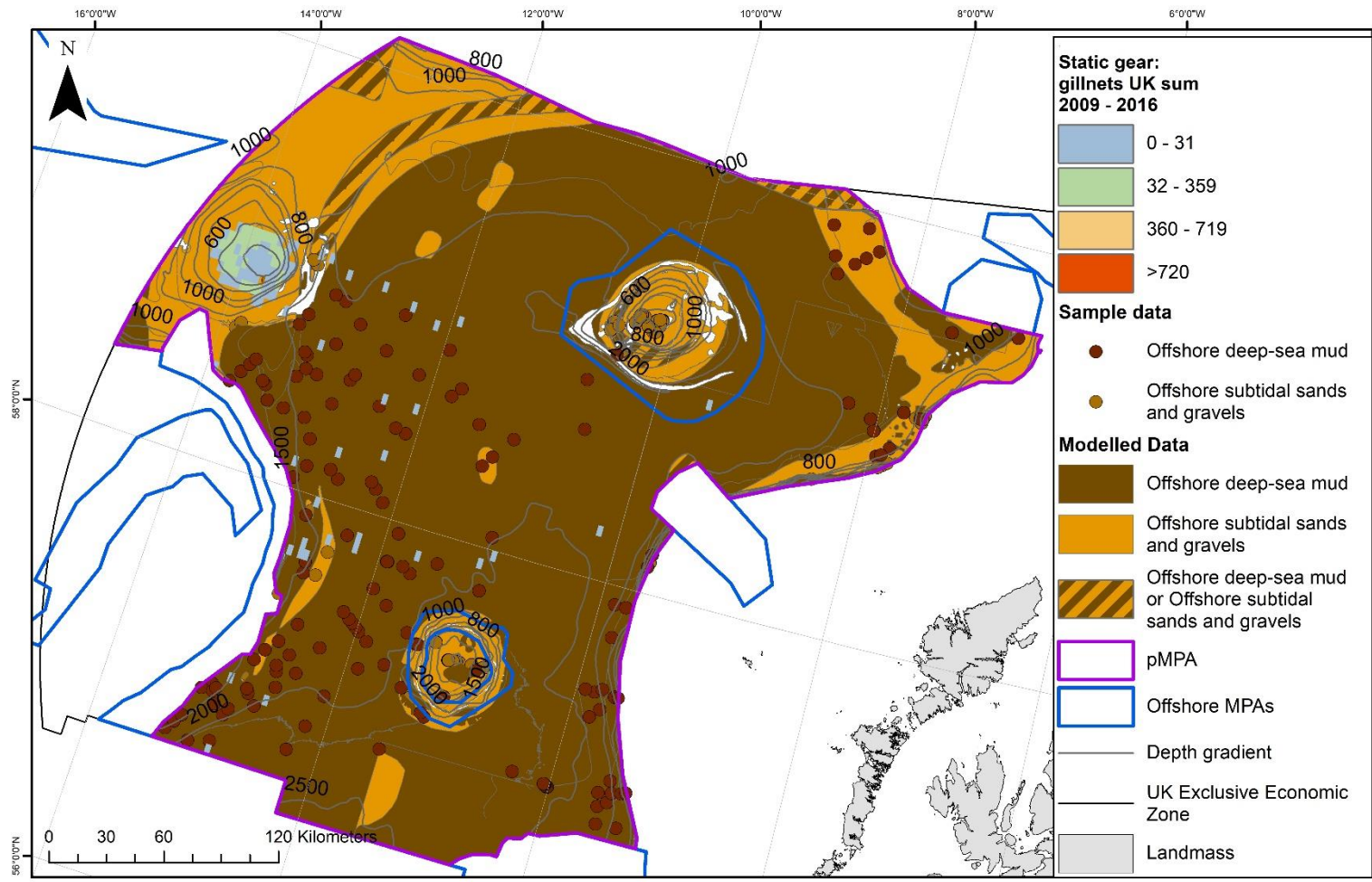
**Figure 2k.** Location of static gears gillnet non-UK fishing activity (2009-2016) in relation to proposed protected VME features.



**Figure 2I.** Location of static gears gillnet UK fishing activity (2009-2016) in relation to proposed protected VME features.



**Figure 2m.** Location of static gears gillnet non-UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.

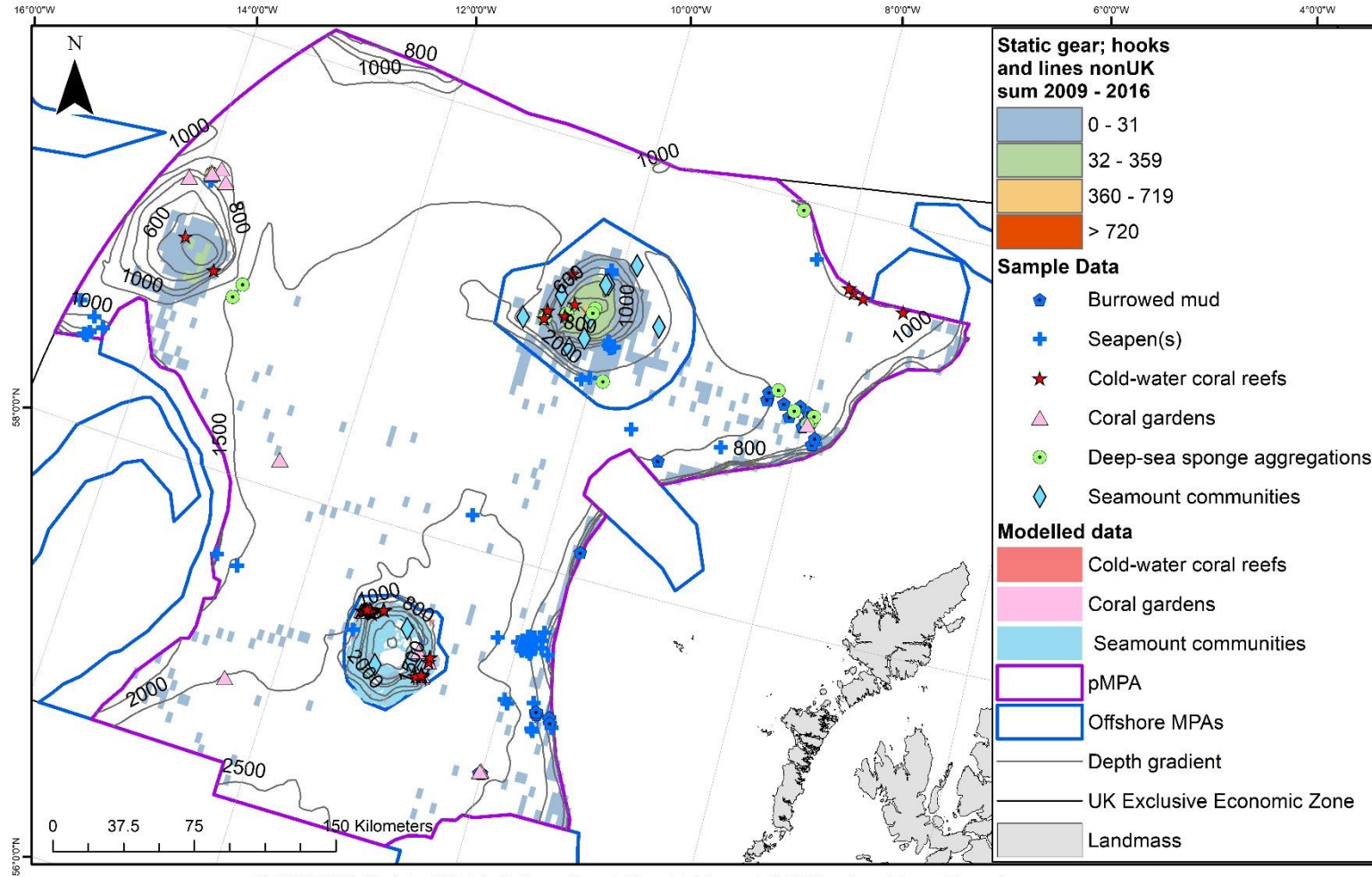


© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.

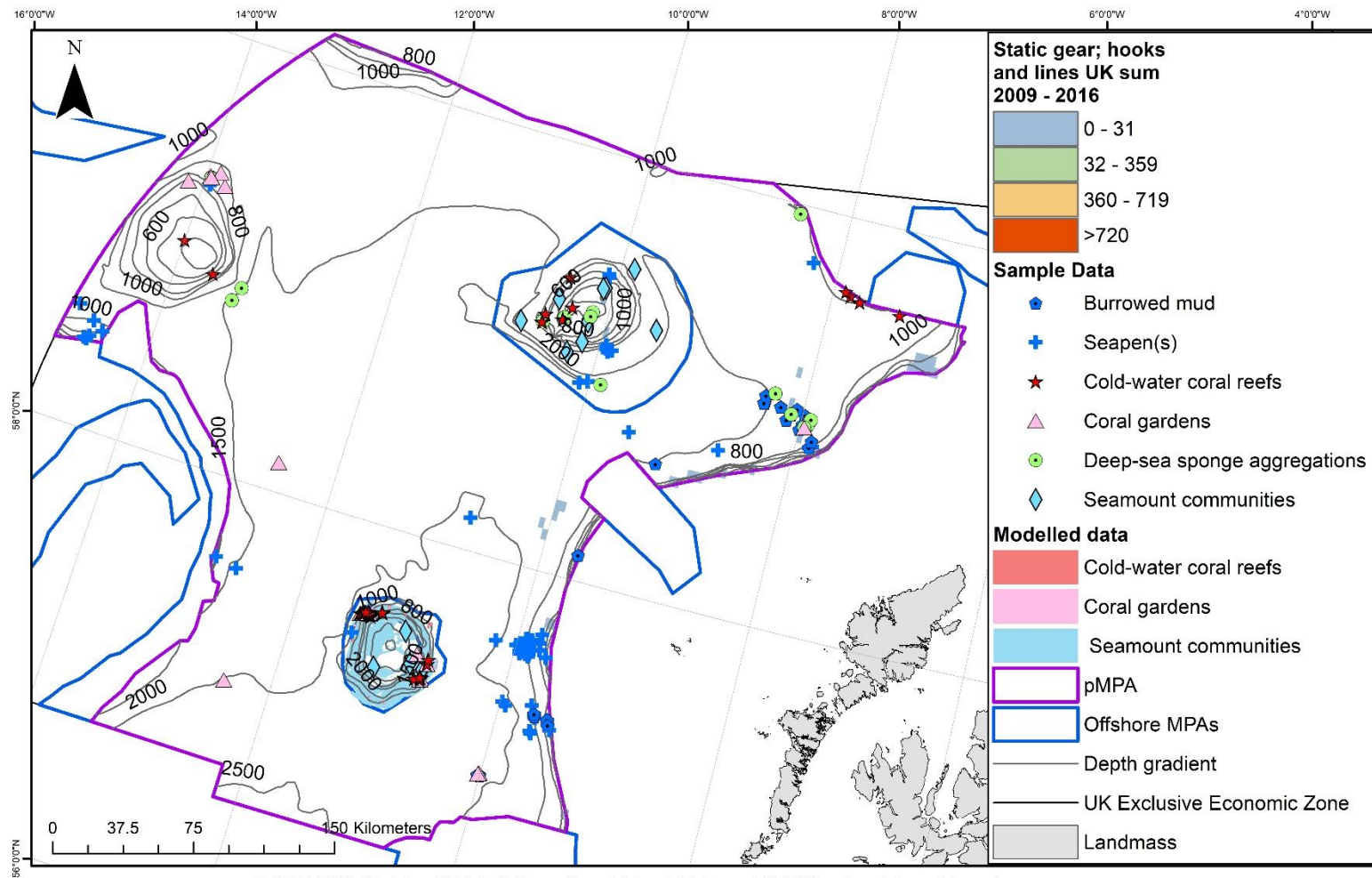


Scottish Government  
Riaghaltas na h-Alba  
gov.scot

**Figure 2n.** Location of static gears gillnet UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.



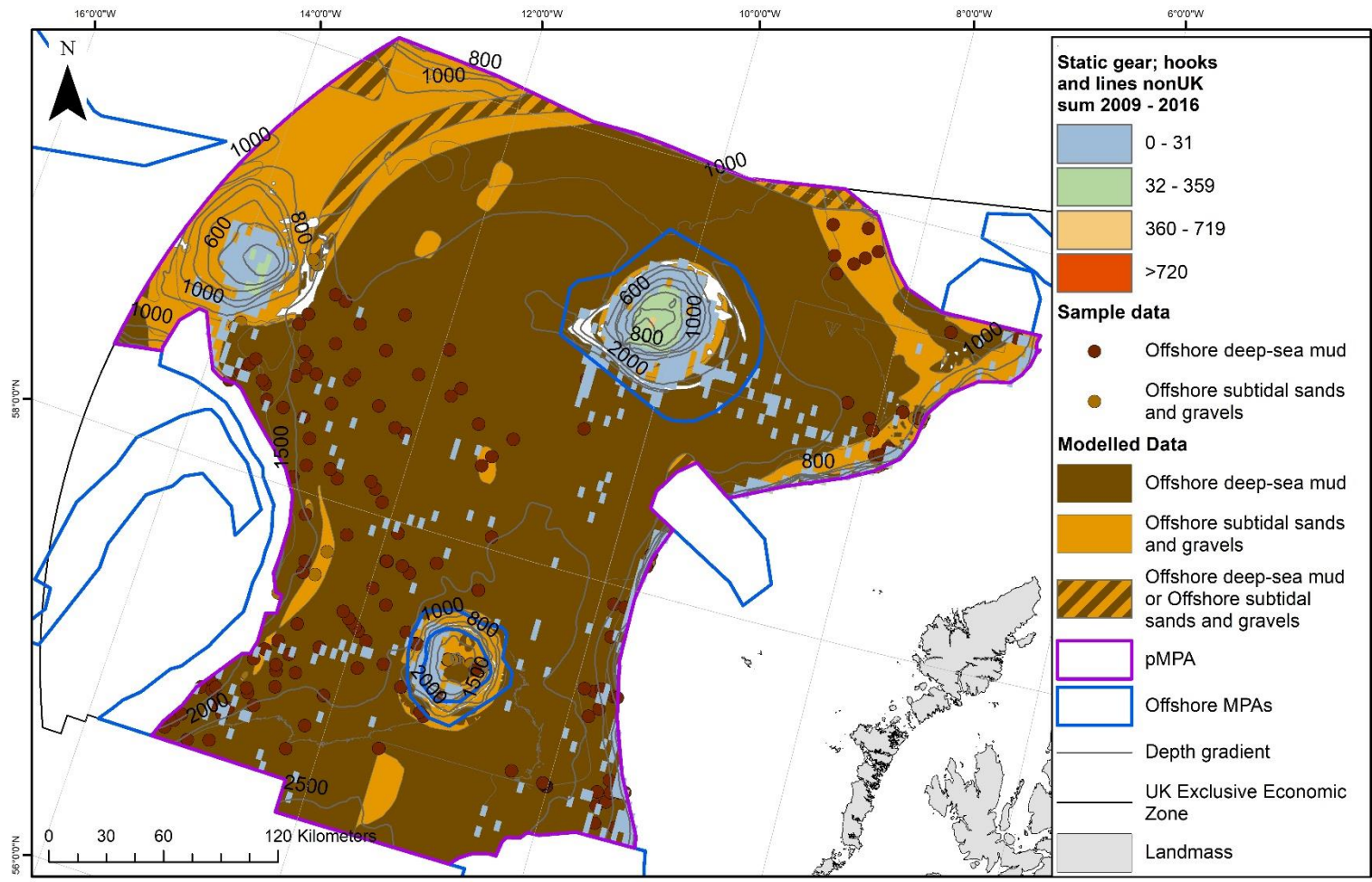
**Figure 2o.** Location of static gears hooks and lines non-UK fishing activity (2009-2016) in relation to proposed protected VME features.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
Map Projection: Europe Albers Equal Area Conic.



**Figure 2p.** Location of static gears hooks and lines UK fishing activity (2009-2016) in relation to proposed protected VME features.



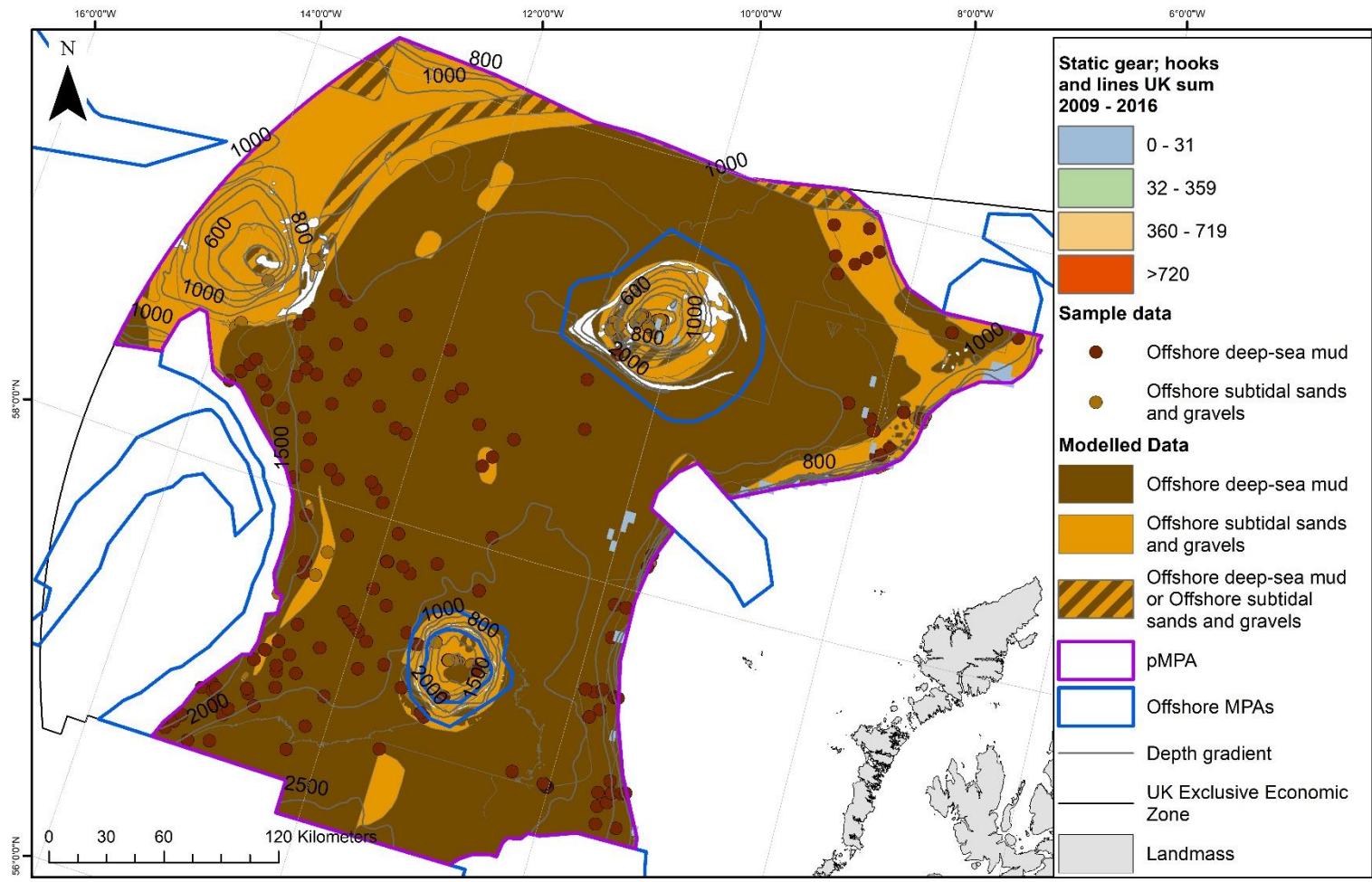
© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
Map Projection: Europe Albers Equal Area Conic.

marine  
scotland



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

**Figure 2q.** Location of static gears hooks and lines non-UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.



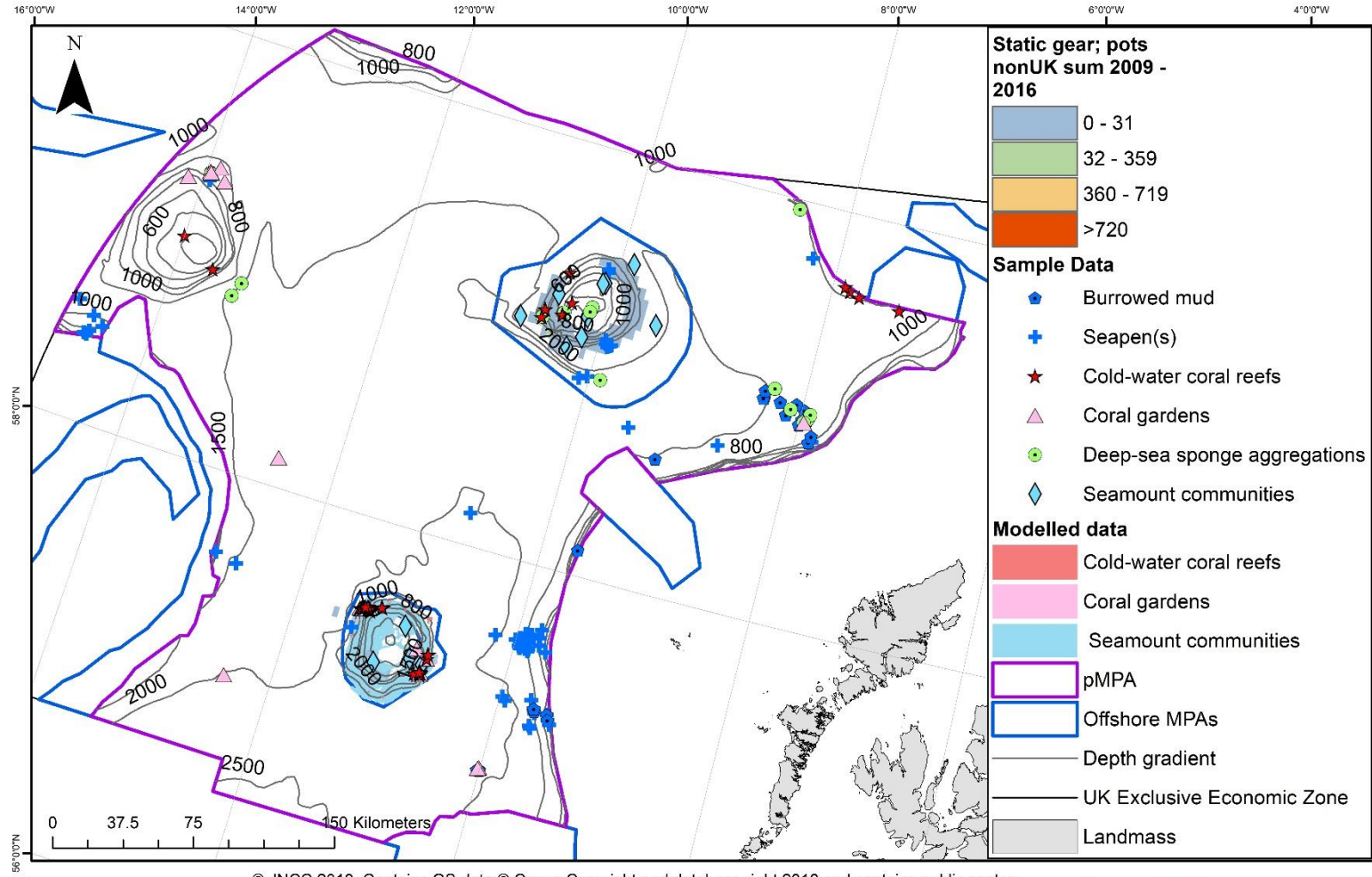
© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



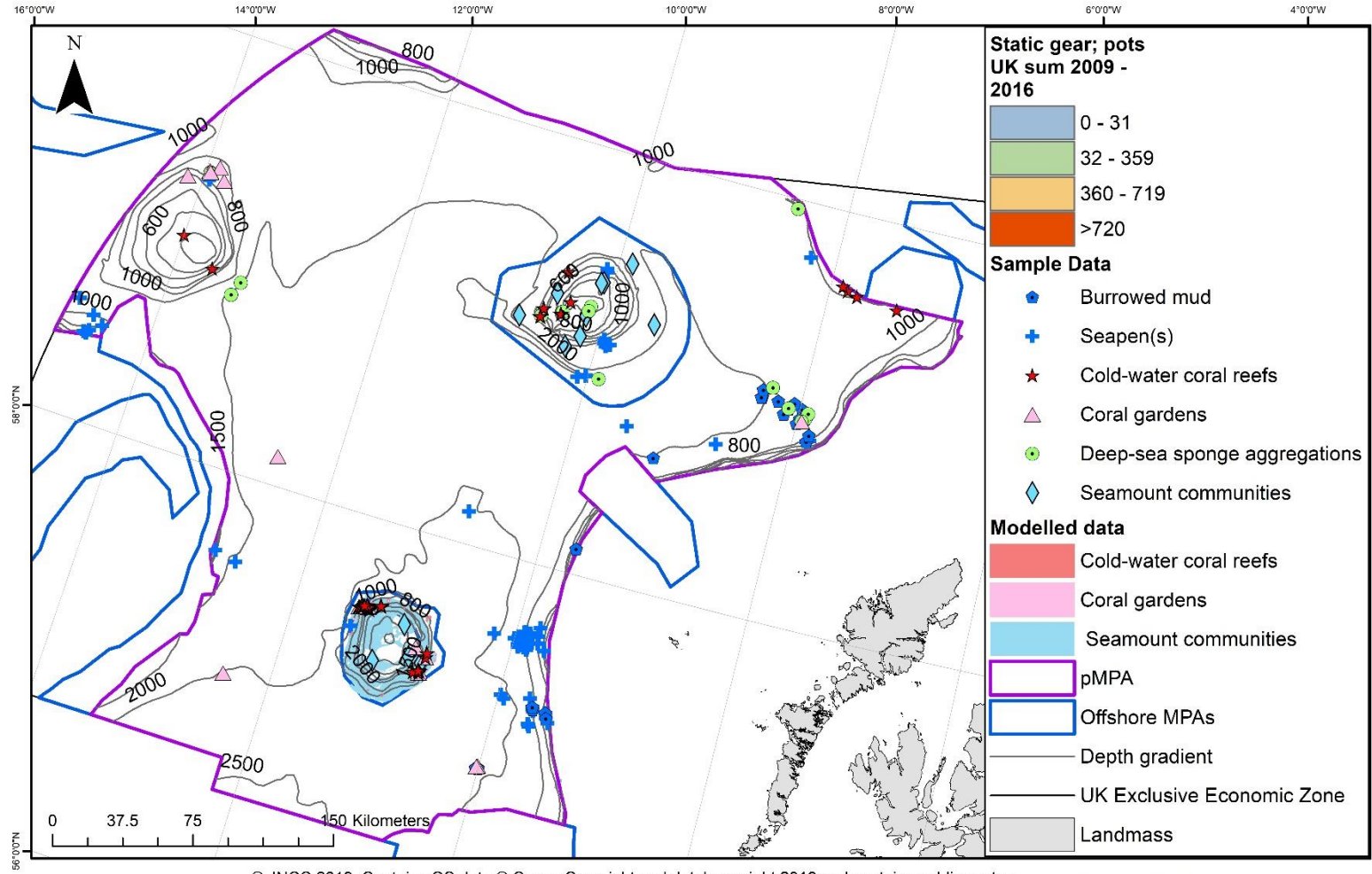
Scottish Government  
Riaghaltas na h-Alba  
gov.scot

**Figure 2r.** Location of static gears hooks and lines UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.

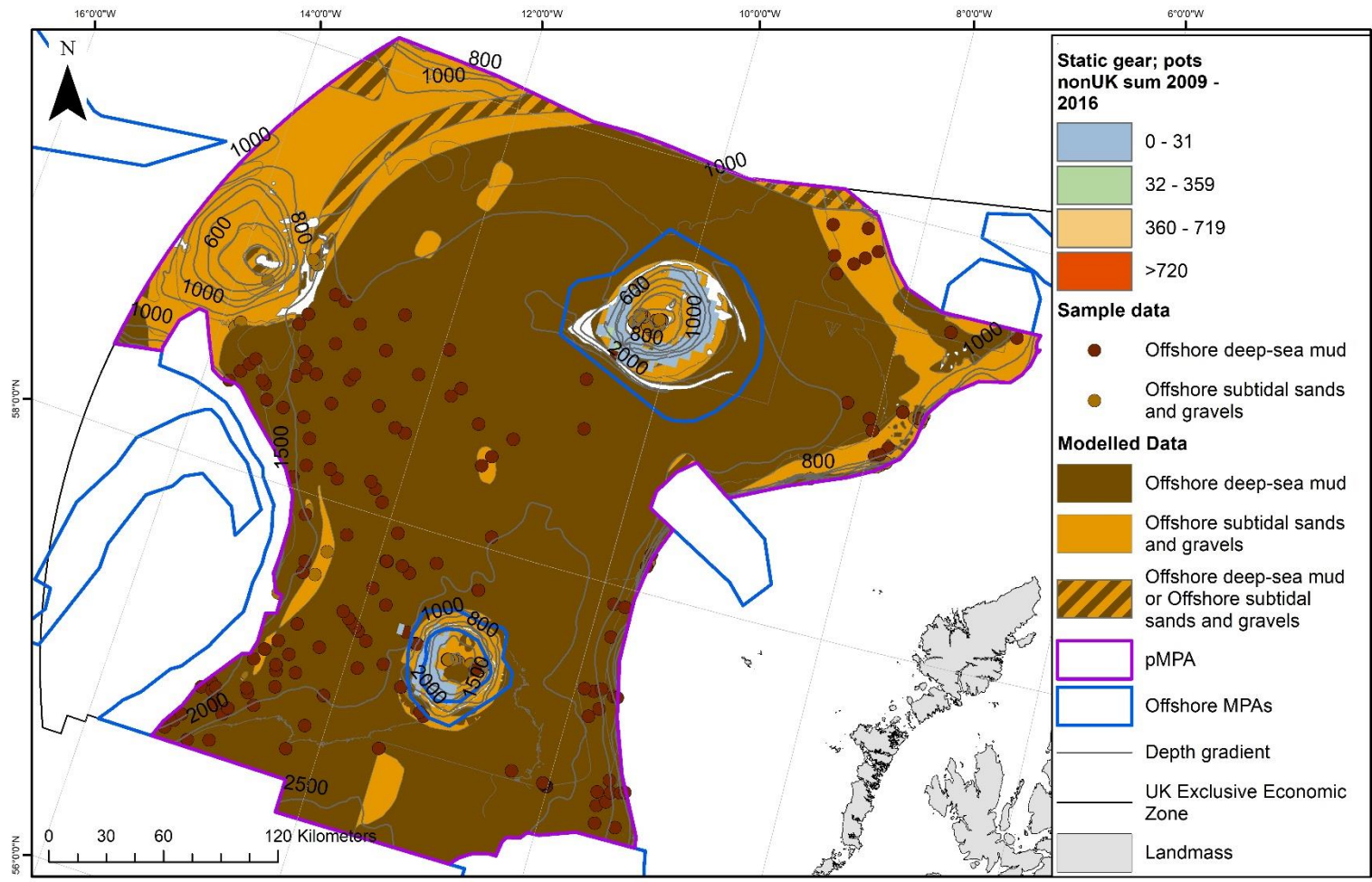




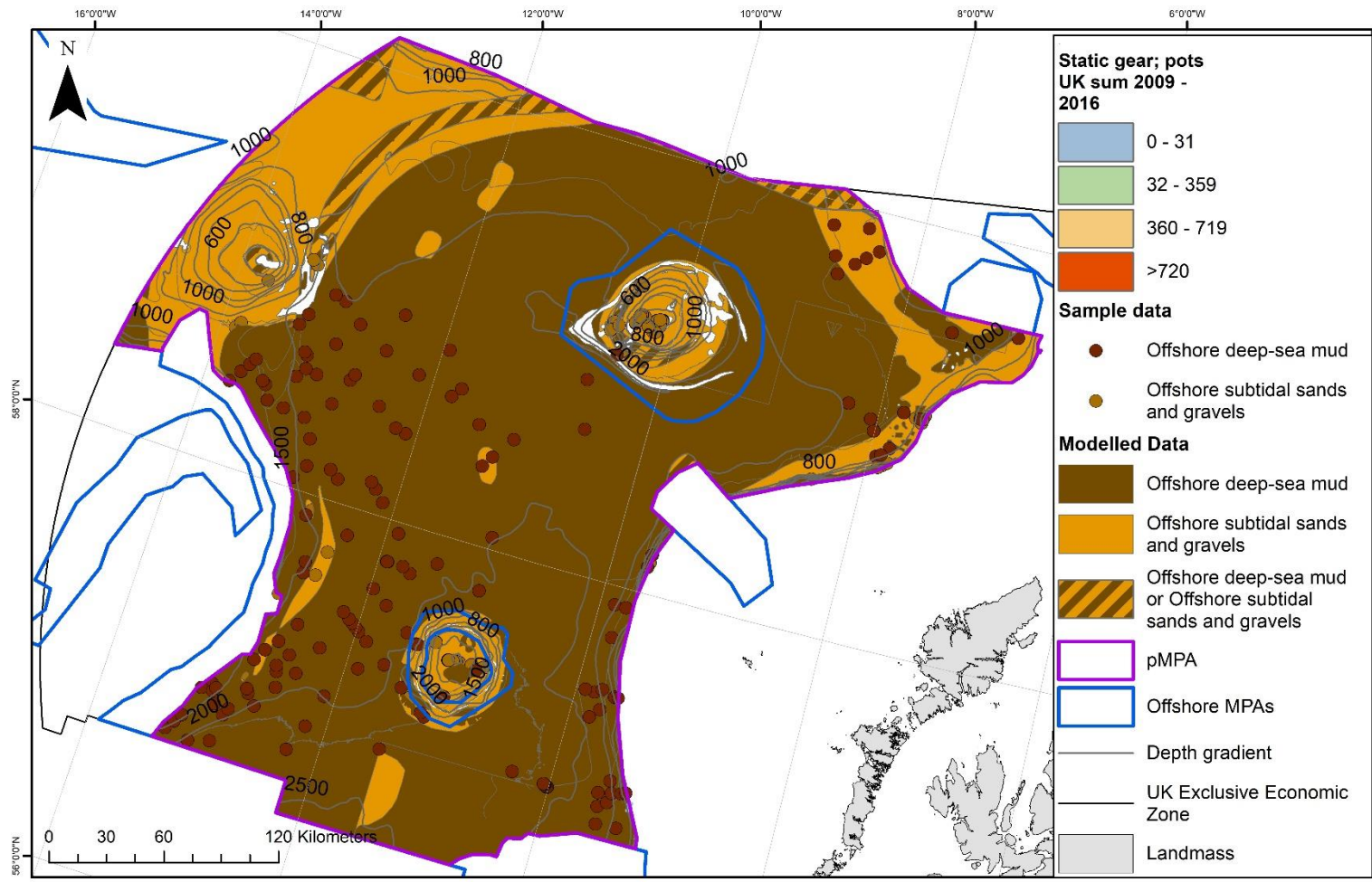
**Figure 2s.** Location of static gears pots non-UK fishing activity (2009-2016) in relation to proposed protected VME features.



**Figure 2t.** Location of static gears pots UK fishing activity (2009-2016) in relation to proposed protected VME features.



**Figure 2u.** Location of static gears pots non-UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

Figure 2v. Location of static gears pots UK fishing activity (2009-2016) in relation to proposed protected sedimentary features.

## 4.2 Overview of existing management and whether additional measures are required

In the West of Scotland pMPA, there are measures already in place to restrict activities. These measures afford some protection to the proposed protected features of the pMPA. The sections that follow provide JNCC's advice as to whether existing management is considered sufficient to achieve the objectives of the proposed protected features in the pMPA. Or whether additional management actions should be considered, by activity type.

### Telecommunication cables

Telecommunications cables are not subject to Environmental Impact Assessment and therefore do not, in general, go through the marine licensing process. As such, they are classed as an unregulated activity within the context of management advice for this pMPA.

**JNCC advice:** Early discussion with operators is welcomed regarding new telecommunications cable installation plans or for the maintenance/removal of existing cables.

### Oil and Gas exploration

The Offshore Petroleum Regulator for Environment and Decommissioning (OPRED), is the regulator for oil and gas activity in the UK offshore area and is responsible for making the decision as to whether a proposed activity and/or development is capable of affecting the proposed protected features of the pMPA.

For those activities and/or developments that OPRED considers require an EIA, JNCC is willing to engage at an early stage with OPRED and the operator to discuss the specific details of the proposed operation and/or development and offer advice on any potential effects.

In so doing, JNCC will make reference to information on the sensitivity of the proposed protected features to proposed activities and/or developments that is publicly available through, for example, [FeAST](#).

JNCC will consider the nature, scale, timing and duration of activities in providing advice. Early engagement will facilitate discussions on the information required for JNCC to advise on any possible implications to the proposed protected features achieving their conservation objectives. If JNCC identify a potentially significant effect, mitigation measures may be advised. Any such advice provided as part of the licensing process will be site and operation specific. Further information on the regulatory framework concerning oil and gas activity within Nature Conservation MPAs is included in the [MPA Management Handbook](#).

**JNCC advice:** Additional mitigation measures may be required on a case-by-case basis to avoid hindering the achievement of the conservation objectives for the pMPA.

### Ministry of Defence activity

The Ministry of Defence seek to manage its activities in a manner that minimises environmental impact. As part of its Marine Environment and Sustainability Assessment Tool (MESAT), the Royal Navy produce a layer for its electronic charts to provide advice to personnel on how military activities in the vicinity of designated MPAs may impact features. These electronic charts are used by Navy Commanders and other operational planners to ensure that military activities in the marine environment minimise their environmental impact. Environmental Protection Guidelines (Maritime) ([latest version of the EPG\(M\)](#)) have been developed over the past few years in consultation with JNCC on behalf of the UK Statutory Nature Conservation Bodies (SNCBs). These charts offer guidance for the whole UK marine area. Further information is available from [this JNCC webpage](#).

**JNCC advice:** No additional management required.

### **Shipping activity**

Shipping activities are regulated by the International Maritime Organisation and as such classed as an unregulated activity within the context of management advice for this pMPA. Shipping is not regarded as capable of impacting the proposed protected features.

**JNCC advice:** No additional management required.

### **Noise activity**

Marine Scotland are the regulator for noise activities in the Scottish offshore area with the exception of activity related to oil & gas exploration (regulated by OPRED). JNCC have developed the [Marine Noise Registry](#) (MNR) on behalf of Defra and the Devolved Administrations to record human activities in UK seas that produce loud, low to medium frequency (10Hz – 10kHz) impulsive noise. As part of the application process, information on the nature of any proposed noise activities must be added to the registry before an application can proceed and guidance is available to support this.

**JNCC advice:** No additional management required.

### **Scientific research**

Under the Marine Licensing (Exempted Activities) (Scottish Offshore Region) Order 2011 (as amended) sediment sampling and scientific instrument deployment are exempt from the requirement for a marine licence subject to certain conditions set out in [Scottish Government guidance](#).

Codes of conduct are available which communicate to marine researchers, the importance of minimising impacts from their activities on the marine environment and set out guidelines and processes to follow to do this e.g. the [Convention for the Protection of the Marine Environment of the North-East Atlantic](#) and [International Research Ship Operators](#) codes of conduct. JNCC provides advice on request on how to minimise impacts on offshore MPAs to ensure the achievement of their conservation objectives are least hindered by research activities.

**JNCC advice:** No additional management required.

### **Deep-sea mining**

Whilst deep-sea mining does not currently take place within the pMPA, there has been a significant amount of research taking place to help support development of the necessary regulatory frameworks and understanding of impacts to generate the evidence base for decision-making (e.g. the Manging Impacts of Deep Sea Resource Exploitation or [MIDAS Project](#)).

**JNCC advice:** As an evolving industry, JNCC advise a precautionary approach whereby no licenses should be granted for deep-sea mining intended to take place within the pMPA.

### **Fishing activity**

A range of measures are already in place or proposed within the pMPA, to restrict the use of certain gears or target fish species. These are set out in figures 3a-f.

In compliance with Article 8 of the deep-sea Regulation (EU) [2016/2336](#), a ban on the use of all bottom-contacting mobile gear has been introduced below 800m depth, this applies across the area of the pMPA. The same regulation also restricts bottom trawling below 400m where VMEs are present or are likely to occur. Fishing with bottom-set gillnets, entangling nets and trammel nets below 600m is also prohibited, and there are restrictions on their use between 200m and 600m, according to Council Regulation (EC) no. [850/98](#), as amended by [EU No 227/2013](#).

In addition, there are two MPAs which fall within the pMPA boundary for which fisheries management proposals have been prepared to afford protection to the protected features. [Fisheries management proposals for the Rosemary Bank Seamount and Anton Dohrn Seamount MPAs](#) are currently being progressed through the Common Fisheries Policy Joint Recommendation process. The [draft proposals](#) are for site-wide restrictions on all demersal gears (Figures 3e and f).

The wider fish stocks of the proposed fish features are managed through the Common Fisheries Policy by way of Total Allowable Catch (TAC). For Orange roughy, Portuguese dogfish and Leafscale gulper shark, the current TAC is set to zero, though there is a small transferable quota for EU vessels permitting limited landings (10 t) of unavoidable by-catch of the deep-sea shark species (WGDEEP, 2018). The TAC in 2018 for Roundnose grenadier was 3120 t, in 10 763 t for Blue ling (WGEF, 2018).

Blue ling are afforded additional protection through blue ling seasonal closures which were introduced in 2009 (Council Regulation (EC) no. [850/98](#)). Figure 3c shows the extent of seasonal closures. These restrictions protect spawning aggregations along the edge of the Scottish continental shelf and at the edge of Rosemary Bank, imposing a catch restriction of < 6 t per trip.

The proposed deep-sea fish features are protected from much of the bycatch pressure through the regulations outlined above. However, they may still be caught as non-target bycatch, in long-line and other static fisheries and to a lesser extent through demersal trawling in the site. Though not common, these species can also occur in waters < 800m outside of the area covered by deep-sea Regulation (EU) [2016/2336](#) and [EU No 227/2013](#) and so may still be caught as by-catch in demersal trawls and bottom-set gillnets, entangling nets and trammel nets above 600m.

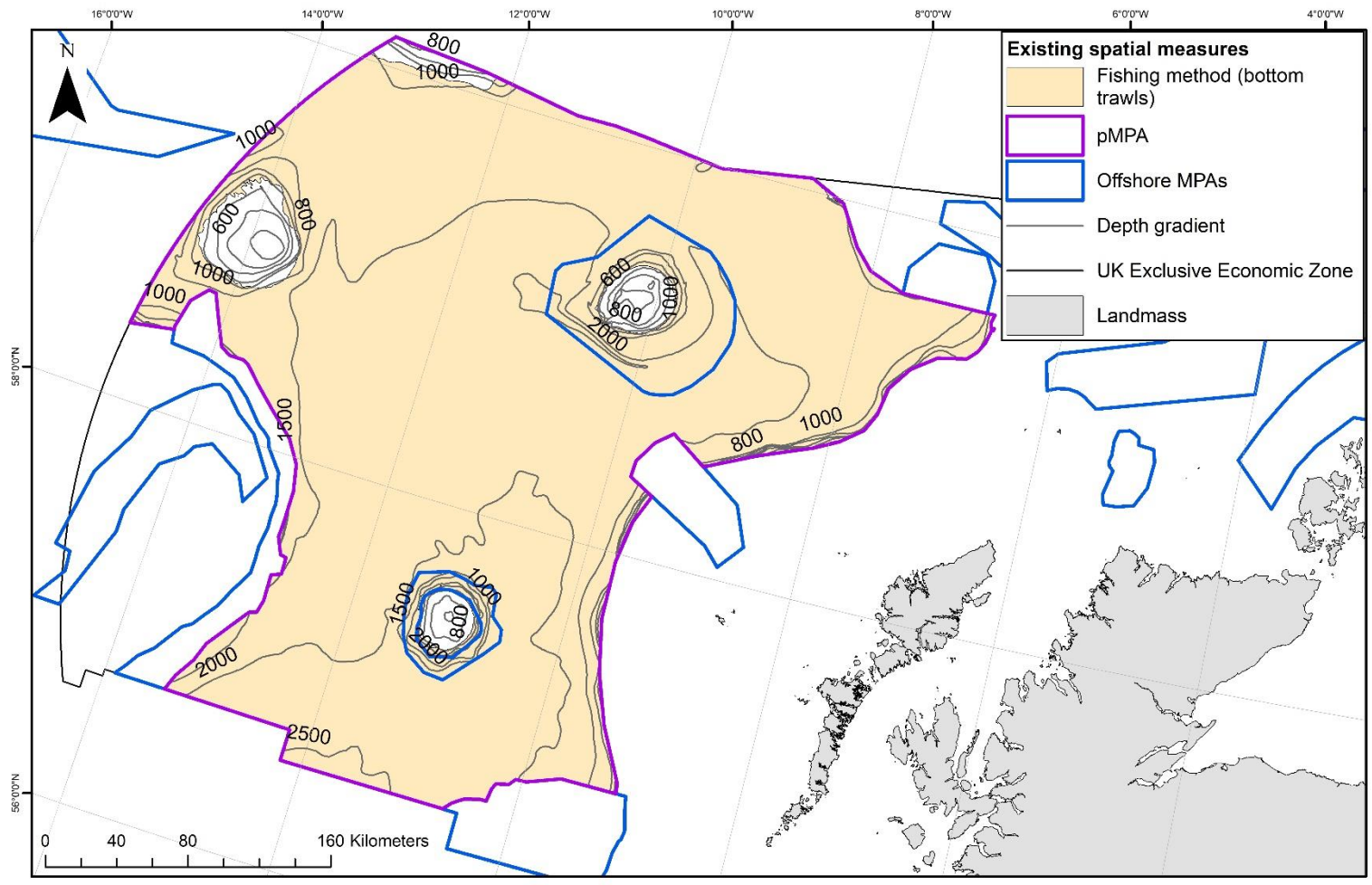
The habitat features in the site are similarly afforded much protection through existing fishery management. However, VMS indicates that static gear use (where they are not prohibited or restricted under Council Regulation (EC) no. [850/98](#)) occurs over topographic features such as Anton Dohrn Seamount, Rosemary Bank Seamount and George Bligh Bank. Fragile habitats with erect and slow growing species such as: cold-water coral reefs, coral gardens, deep-sea sponge aggregations and seamount communities occur on these topographic features and are highly vulnerable to damage from static gears where they contact the seabed. Areas shallower than 800m within the pMPA (such as Anton Dohrn Seamount, Rosemary Bank Seamount and George Bligh Bank) are not currently protected from demersal mobile fishing by the deep-sea Regulation (EU) 2016/2336, presenting a risk to the achievement of the objectives for these features.

**JNCC advice:** JNCC fully support the [draft management proposals for Rosemary Bank Seamount](#) to prohibit the use of all static and demersal mobile gears within the full extent of Rosemary Bank Seamount MPA. JNCC also fully support the [draft management proposals for Anton Dohrn Seamount](#) to prohibit demersal mobile and all static gears from the SAC.

Additional management is required to support recovery of the proposed protected biodiversity features to favourable condition. JNCC advise the prohibition of demersal mobile gears in areas shallower than 800m within the pMPA, and the prohibition of all bottom-contacting static gears where aggregations of proposed VME features occur (Rosemary Bank Seamount, Anton Dohrn Seamount, George Bligh Bank and the north-east corner of the pMPA). To support recovery of the proposed sedimentary features (offshore subtidal sands and gravels, and offshore deep-sea muds) JNCC advise that bottom-contacting static gears should be restricted or more ideally removed from the extent of these features.

As our current knowledge of the proposed deep-sea fish species is limited, JNCC advise that monitoring efforts focus on improving our understanding of their life history characteristics. In addition, in the case of Gulper shark/Leafscale gulper shark taking a sample of scales and tissue would be useful for identification purposes where any of these species are caught as bycatch.

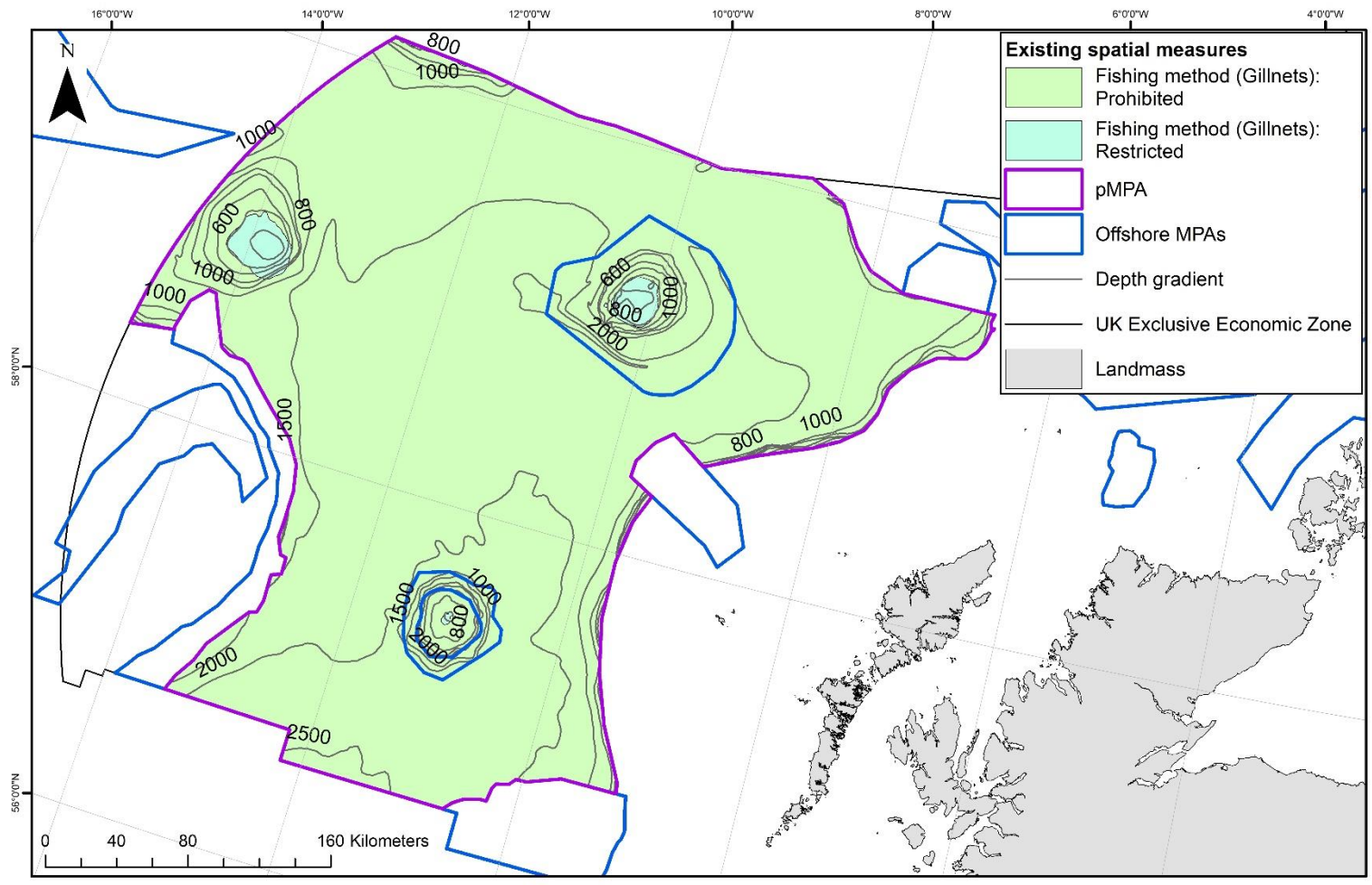





© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
 Map Projection: Europe Albers Equal Area Conic.

marine scotland | Scottish Government  
 Riaghaltas na h-Alba | gov.scot

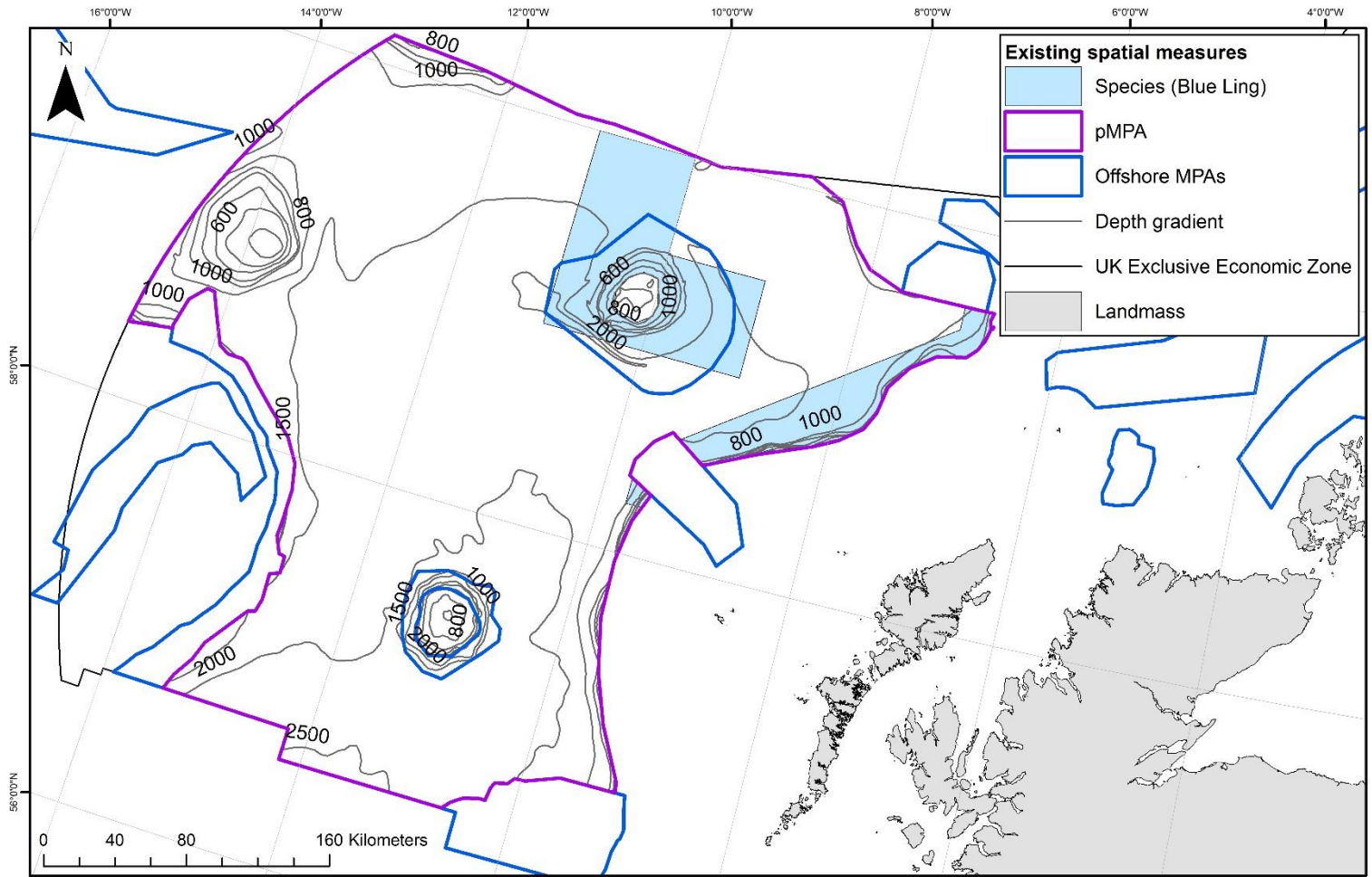
**Figure 3a.** Location of existing spatial measures in the West of Scotland pMPA for permanent closure to demersal trawling.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
 Map Projection: Europe Albers Equal Area Conic.

marine scotland  Scottish Government  
 Riaghaltas na h-Alba gov.scot

**Figure 3b.** Location of existing spatial measures in the West of Scotland pMPA for closure to gillnets, entangling nets and trammel nets in areas where depth is greater than 200m.



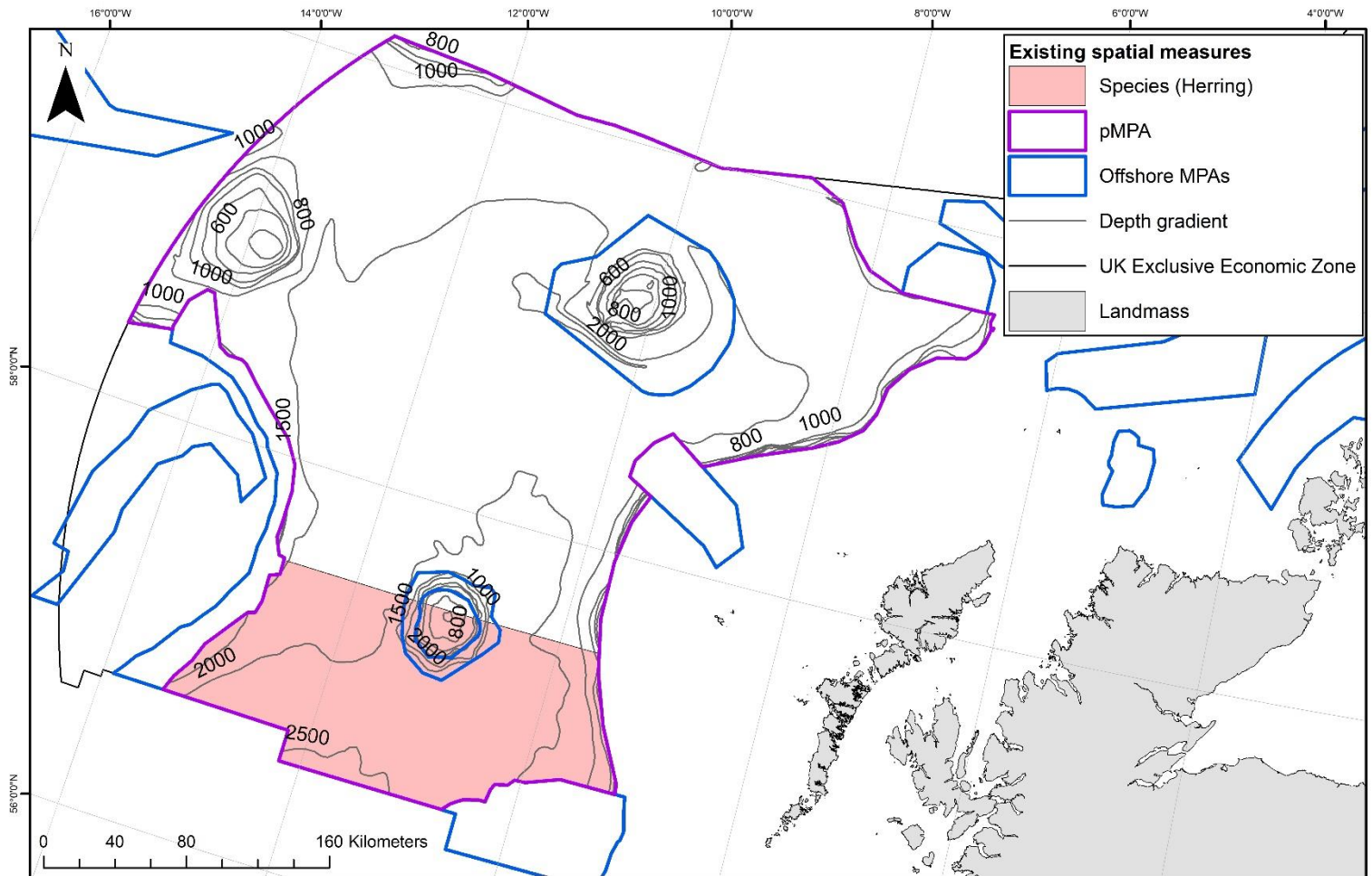
© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
 Map Projection: Europe Albers Equal Area Conic.

marine  
scotland



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

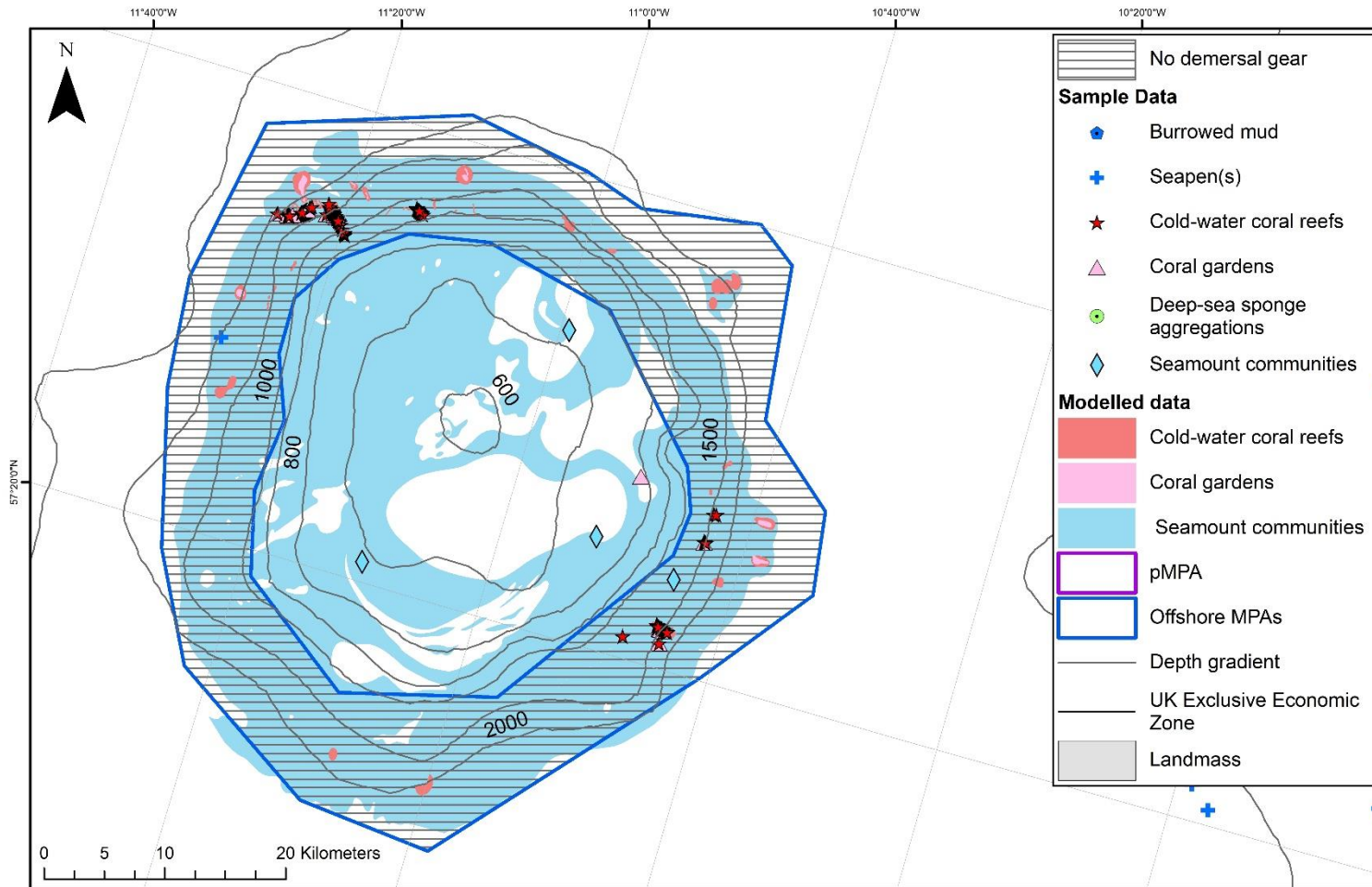
**Figure 3c.** Location of existing spatial measures in the West of Scotland pMPA for seasonal closure to Blue ling fisheries (1<sup>st</sup> March to 31<sup>st</sup> May).



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
 Map Projection: Europe Albers Equal Area Conic.

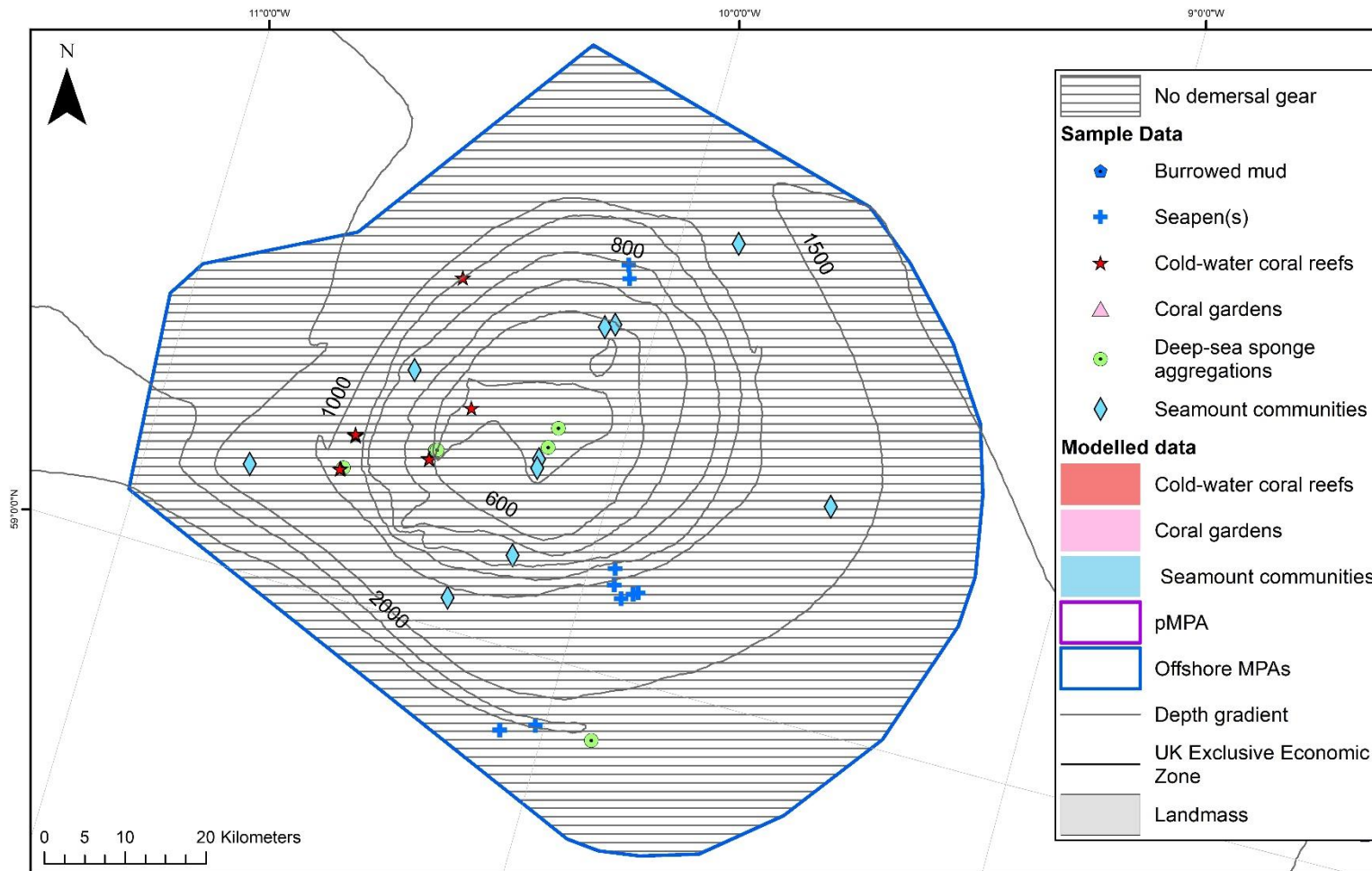
marine scotland Scottish Government  
 Riaghaltas na h-Alba gov.scot

**Figure 3d.** Location of existing spatial measures in the West of Scotland pMPA for closure to herring fisheries.



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation.  
Map Projection: Europe Albers Equal Area Conic.

**Figure 3e.** Draft management proposals for Anton Dohrn SAC, reproduced from [Marine Scotland North-west waters proposal 2016](#).



© JNCC 2019. Contains OS data © Crown Copyright and database right 2016 and contains public sector information from multiple sources, licensed under the Open Government Licence v2.0, from the United Kingdom Hydrographic Office. Contains derived data from Ordnance Survey © Crown copyright. 100019741 (2015). World Vector Shore © US Defence Mapping Agency. Not to be used for navigation. Map Projection: Europe Albers Equal Area Conic.



Figure 3f. Draft management proposals for Rosemary Bank Seamount MPA, reproduced from [Marine Scotland North-west waters proposal 2016](#).

## References

Carroll, A.G., Przeslawski, R., Duncan, A., Gunning, M., and Bruce, B. (2017). A critical review of the potential impacts of marine seismic surveys on fish and invertebrates. *Marine Pollution Bulletin* **114**, 9-24. Available online from:

<https://www.sciencedirect.com/science/article/pii/S0025326X16309584>

Gubbay, S., (2015). Overview of the potential interactions and impacts of commercial fishing methods on marine habitats and species protected under the EU Habitats Directive. The N2K Group European Economic Interest Group. Available online from:

<http://ec.europa.eu/environment/nature/natura2000/marine/docs/Fisheries%20interactions.pdf>

Mortensen, P.B., Buhl-Mortensen, L., Gordon, D.C.J., Fader, G.B.J., McKeown, D.L. & Fenton, D.G., (2005). Effects of fisheries on deepwater gorgonian corals in the Northeast Channel, Nova Scotia. In: Barnes, B.W., Thomas, J.P. (Eds.), *Benthic Habitats and the Effects of Fishing*. American Fisheries Society Symposium, pp. 369-382

Muñoz, R.D., Murillo, F.J., Sayago-Gil, M., Serrano, A., Laporta, M., Otero, I., & Gomez, C., (2010). Effects of deep-sea bottom longlining on the Hatton Bank fish communities and benthic ecosystem, north-east Atlantic. *Journal of the marine biological association of UK*, **91**, 939-952.

OSPAR (2010). Background Document for Coral gardens. Publication Number: 486/2010 OSPAR Commission, London. Available online from:

[http://www.ospar.org/documents/dbase/publications/P00486\\_Coral\\_Garden.pdf](http://www.ospar.org/documents/dbase/publications/P00486_Coral_Garden.pdf)