

Joint Recommendation regarding the protection of Submarine structures made by leaking gases within the Croker Carbonate Slabs Site of Community Importance under the Habitats Directive 92/43/EEC of 21 May 1992 under Article 11 and Article 18 of Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy (the Basic Regulation).

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1. Introduction

This joint recommendation contains a proposal for the regulation of fisheries activity and is initiated by the UK and submitted to the European Commission jointly by the United Kingdom (UK) and the following Member States, Ireland and Belgium being those Member States having a direct management interest affected by the joint recommendation.

The overall aim of this joint recommendation is to ensure the protection of Annex I Habitat 1180 Submarine structures made by leaking gases within the Croker Carbonate Slabs Site of Community Importance (SCI) from fisheries, thereby contributing to the obligation of maintaining this habitat type in favourable condition in accordance with Article 6 of the Habitats Directive¹.

It is the intention of the UK government (as the initiating Member State) to take forward measures in respect to fisheries activities exercised by all vessels including fishing vessels carrying the flag of other Member States of the EU.

2. The Recommendations to be Implemented

The following recommendations are proposed for adoption within the Croker Carbonate Slabs SCI:

- The exclusion of demersal trawls, dredges and seine nets (Table 1) to protect Annex I 1180 Submarine structures made by leaking gases feature within the site's management boundaries (Figure 1 of Supporting Documentation, page 16, and an increased reporting zone around the site's management boundaries (see Section 8 of Annex A).

¹ Council Directive 92/43/EEC, of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1992L0043:20070101:EN:PDF>

Table 1: Gear types to be prohibited within the management boundary of Croker Carbonate Slabs SCI as shown in Figure 1 of Supporting Documentation (page 12).

Gear types to be prohibited within the site's management boundary	Gear code Annex XI in EU Regulation No 404/2011	International Standard Classification of Fishing Gears
Beam Trawls	TBB	TBB
Bottom/Otter Trawls	OTB, OTT, PTB,TBN,TBS,TB	OTB,OTT,OT,PTB,TB
Demersal seine nets	SDN, SSC, SX, SV	SB, SPR, SDN, SSC, SX, SV
Dredges	DRB	DRB, DRH

The coordinates of the site and management boundary are as follows:

Table 2: Coordinates for the Croker Carbonate Slabs SCI site and management boundary.

Point	Latitude	Longitude
1	53° 27' 37" N	5° 18' 60" W
2	53° 28' 07" N	5° 17' 50" W
3	53° 29' 39" N	5° 16' 26" W
4	53° 31' 07" N	5° 14' 37" W
5	53° 32' 10" N	5° 14' 16" W
6	53° 32' 20" N	5° 14' 03" W
7	53° 32' 05" N	5° 11' 39" W
8	53° 32' 44" N	5° 11' 38" W
9	53° 32' 41" N	5° 10' 54" W
10	53° 32' 25" N	5° 10' 23" W
11	53° 32' 04" N	5° 09' 08" W

12	53° 31' 43" N	5° 08' 41" W
13	53° 30' 45" N	5° 09' 18" W
14	53° 30' 26" N	5° 08' 45" W
15	53° 29' 37" N	5° 08' 38" W
16	53° 29' 13" N	5° 09' 28" W
17	53° 29' 12" N	5° 10' 15" W
18	53° 27' 15" N	5° 10' 53" W
19	53° 26' 53" N	5° 09' 56" W
20	53° 26' 09" N	5° 09' 51" W
21	53° 25' 00" N	5° 10' 23" W
22	53° 24' 23" N	5° 11' 53" W
23	53° 24' 49" N	5° 13' 09" W
24	53° 24' 40" N	5° 14' 02" W
25	53° 24' 32" N	5° 14' 43" W
26	53° 24' 38" N	5° 15' 27" W
27	53° 24' 59" N	5° 16' 14" W
28	53° 25' 09" N	5° 16' 33" W
29	53° 25' 23" N	5° 16' 47" W
30	53° 25' 17" N	5° 17' 30" W
31	53° 25' 13" N	5° 18' 04" W
32	53° 25' 10" N	5° 18' 57" W
33	53° 24' 49" N	5° 19' 37" W
34	53° 24' 48" N	5° 19' 59" W
35	53° 25' 16" N	5° 19' 59" W
36	53° 25' 30" N	5° 19' 59" W

37	53° 25' 60" N	5° 19' 59" W
38	53° 26' 00" N	5° 19' 00" W
39	53° 27' 37" N	5° 18' 60" W

3. Control and enforcement of the proposed fisheries management measures

Control and enforcement of the proposed fisheries management measures will be based on the risk-based systems in accordance with the model developed by the UK's Marine Management Organisation (MMO).

Key provisions which should be included in an EC regulation to facilitate control enforcement and compliance include:

- A prohibition of demersal trawls, dredges and seine nets being deployed within the SCI's management boundaries.
- Establishment of a 1nm (1.852km) reporting zone around Croker Carbonate Slabs SCI. All fishing vessels within this area shall be required to record or report vessel positions at minimum 10minute intervals. This area shall be defined by the reporting zone and coordinates displayed in Annex C.
- A requirement for all fishing vessels entering the reporting zone to have a system for recording and reporting vessel position which meets prescribed specifications (see Section 8.2 of Annex A for minimal requirements) and is installed and operative. Any fishing vessel entering Croker Carbonate Slabs SCI or the reporting zone without such a system will be committing an offence.
- A requirement for all fishing vessels transiting the prohibited area carrying prohibited gears to have all prohibited gears on board lashed and stowed.
- A requirement for all fishing vessels transiting the restricted area carrying prohibited gears to ensure that the speed during transit is not less than 6 knots except in the case of *force majeure* or adverse conditions. In such cases the master shall inform the fisheries monitoring centre of the flag member state which shall then inform the UK Fisheries Monitoring Centre (FMC) as soon as possible.

The proposal on which gears types to prohibit is formulated in terms of Gear Codes in Annex XI in EU Regulation 404/2011 and is explained in more detail in Section 8 of Annex A.

The ongoing management needs of the site will be assessed on an annual basis. If changes to the current management status are required the UK will coordinate such a requirement in accordance

with Article 11 and Article 18 of the Basic Regulation and in collaboration with those Member States with a direct management interest in the Croker Carbonate Slabs SCI.

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Supporting Documentation

1. Introduction

1.1 General Remarks

Croker Carbonate Slabs was submitted to the European Commission as a candidate Special Area of Conservation (SAC) in August 2012 and approved by the Commission as a Site of Community Importance (SCI) in November 2012. The site is designated to protect Annex I Habitat 1180 Submarine structures made by leaking gases.

The conservation objective for Croker Carbonate Slabs SCI is to maintain the Submarine structures made by leaking gases in favourable condition. Under Article 6 of the Habitats Directive, Member States have a duty to take appropriate steps to avoid the deterioration of natural habitats for which SACs have been designated. Commercial fishing has been identified as an activity which could adversely impact the integrity of the site's features and as such required to be assessed and, if necessary, managed to reduce its impact. As the proposed area of the Croker Carbonate Slabs SCI falls beyond 12 nautical miles (nm) of the UK coastline all Member States have access to the site, however the UK and Ireland are currently the only Member States with an active fishing interest in the site. It is the intention of the UK government (as the initiating Member State) to take forward measures in respect to fisheries activities exercised by all vessels including fishing vessels carrying the flag of other Member States of the EU.

This document covers the 11 information items of the Commission's guidelines from 2008 concerning development of proposals for fisheries management measures in marine Natura 2000 areas within the scope of the Common Fisheries Policy.

1.2 Overall aim of the present proposal

The overall aim of the present proposal is to ensure adequate protection of designated Submarine structures made by leaking gases from fishing activities and thereby to contribute to the obligation of achieving favourable conservation status for the feature in accordance with art. 6 (2) of the

Habitats Directive; which states that Member States shall take appropriate steps to avoid the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated.

The conservation objective for the Croker Carbonate Slabs SCI is, subject to natural change, maintain the Submarine structures made by leaking gases in favourable condition. According to advice provided by the Joint Nature Conservation Committee (JNCC), the UK Government's statutory scientific advisor for offshore habitats, where fishing using mobile demersal gear overlaps with the feature it may pose a risk to achieving the conservation objectives for the site. Management measures may focus on the removal of pressures (in order to reduce the risk of not achieving the conservation objectives to the lowest possible level), or the reduction of pressures (in order to reduce the risk of not achieving the conservation objectives).

The UK is proposing to restrict fishing activity with demersal towed gears within the site. The content of the proposed fisheries management measures is explained in more detail in section 1.3 below. The proposals have also been peer reviewed by the Centre for Environment, Fisheries and Aquaculture Sciences (Cefas) (see Section 3.6).

1.3 Recommendations to be implemented

The following recommendations are proposed for adoption the Croker Carbonate Slabs SCI:

- The exclusion of demersal trawls, dredges and seine nets (Table 1) to protect Annex I Habitat 1180 Submarine structures made by leaking gases feature within the site's management boundaries (Figure 1), and an increased reporting zone around the site's management boundaries (see Section 8 of Annex A).

Table 1: Gear types to be prohibited within the management boundary of Croker Carbonate Slabs SCI as shown in Figure 1 (page 12).

Gear types to be prohibited within the site's management boundary	Gear code Annex XI in EU Regulation No 404/2011	International Standard Classification of Fishing Gears
Beam Trawls	TBB	TBB
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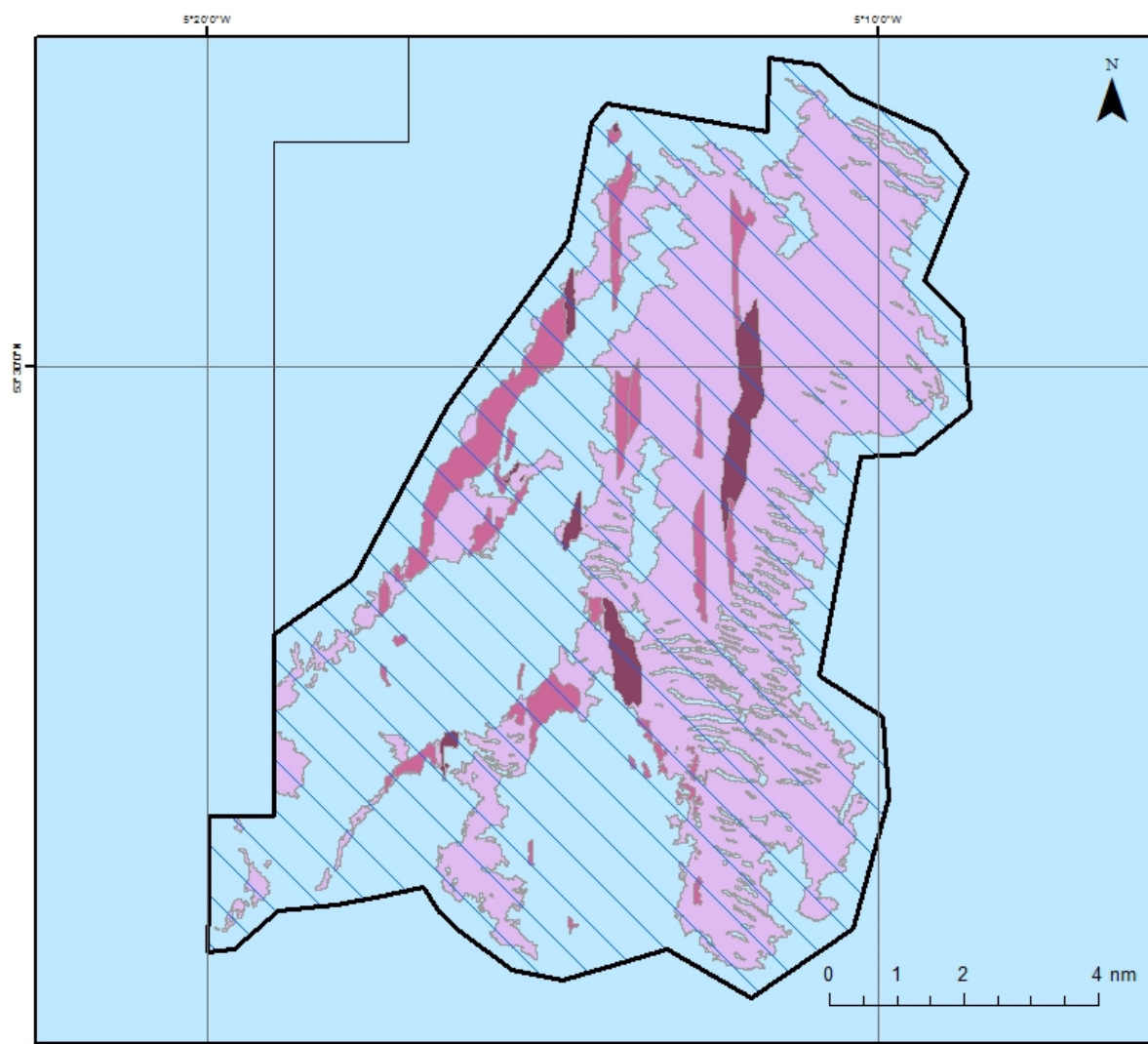
Demersal seine nets	SDN, SSC, SX, SV	SB, SPR, SDN, SSC, SX, SV
Dredges	DRB	DRB, DRH

The coordinates of the site and management boundary are as follows:








Table 2: Coordinates for the Croker Carbonate Slabs SCI site and management boundary.

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14	53° 30' 26" N	5° 08' 45" W
15	53° 29' 37" N	5° 08' 38" W
16	53° 29' 13" N	5° 09' 28" W
17	53° 29' 12" N	5° 10' 15" W
18	53° 27' 15" N	5° 10' 53" W
19	53° 26' 53" N	5° 09' 56" W

20	53° 26' 09" N	5° 09' 51" W
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30	53° 25' 17" N	5° 17' 30" W
31	53° 25' 13" N	5° 18' 04" W
32	53° 25' 10" N	5° 18' 57" W
33	53° 24' 49" N	5° 19' 37" W
34	53° 24' 48" N	5° 19' 59" W
35	53° 25' 16" N	5° 19' 59" W
36	53° 25' 30" N	5° 19' 59" W
37	53° 25' 60" N	5° 19' 59" W
38	53° 26' 00" N	5° 19' 00" W
39	53° 27' 37" N	5° 18' 60" W



Legend

-  Croker Carbonate Slabs SCI (v2)
-  Proposed restriction on demersal towed gears
-  Low relief MDAC (2004 & 2008 surveys)
-  High Relief MDAC (2004 & 2008 surveys)
-  Possible MDAC (2013 survey)
-  12nm Limit
-  UK Continental Shelf



Site map projected in WGS1984 World Mercator. This product has been derived in part from material obtained from the UK Hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). World Vector Shoreline © US Defense Mapping Agency. Map copyright JNCC 2016.

Figure 1: Map of Croker Carbonate Slabs SCI site and management boundaries.

2. Legal framework

2.1 Common Fisheries Policy

The Common Fisheries Policy (Regulation No 1380/2013 (The Basic Regulation) Article 11) states that Member States are empowered to adopt conservation measures not affecting fishing vessels of other Member States that are applicable to waters under their sovereignty or jurisdiction and that are necessary to comply with the obligations under Article 6 of Directive 92/43/EEC and Article 13(4) of 2008/56/EC.

Where a Member State (“initiating Member State”) considers that measures need to be adopted for the purpose of complying with the obligations referred to above, and other Member States have a direct management interest in the fishery to be affected by such measures, the European Commission shall be empowered to adopt such measures, upon request, by means of delegated acts. For this purpose, cooperation between Member States having a direct management interest is foreseen with a view to formulating a joint recommendation in agreement on draft fisheries management measures to be forwarded to the Commission.

The initiating Member State shall provide the Commission and the other Member States having a direct management interest with relevant information on the measures required, including their rationale, scientific evidence in support and details on their practical implementation and enforcement. Member States shall consult the relevant Advisory Councils.

The initiating Member State and the other Member States having a direct management interest may submit a joint recommendation within six months from the provision of sufficient information. The Commission shall adopt the measures, taking into account any available scientific advice, within three months from receipt of a complete request (Reg 1380/2013, Articles 11 and 18).

The following chapters describe how the UK, as the initiating Member State, has taken the Commission’s criteria for decision making into account, as well as the requirements for regional coordination in line with the new Basic Regulation.

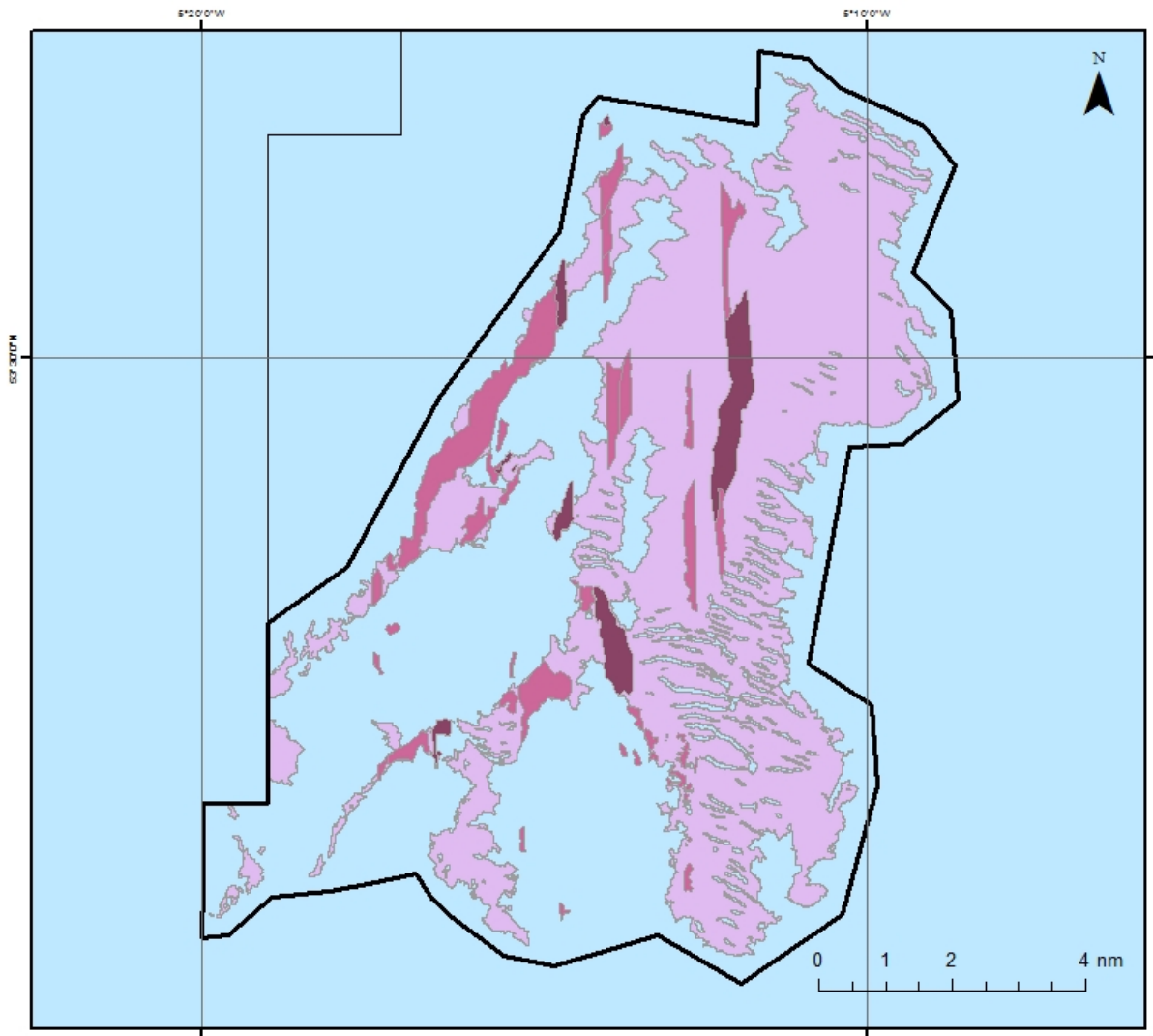
2.2 Fisheries Access to the Croker Carbonate Slabs SCI

In accordance with the Basic Regulation the UK is recorded as operating demersal towed gears, dredges and seines within the proposed management area within the years 2010-2015. Belgium and Irish activity was recorded within ICES rectangles that lie within the site throughout this period, operating demersal towed gears, dredges and seines.

2.3 Designation of the Croker Carbonate Slabs SCI

The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (SI 2007/1842)², as amended, provide the legal basis for the designation of Natura 2000 sites in offshore waters and areas of the extended continental shelf in the UK. In accordance with Regulation 7 of the above Regulations, Croker Carbonate Slabs was submitted to the European Commission as a candidate Special Area of Conservation (cSAC) in August 2012 and adopted by the Commission as a SCI in November 2012. In accordance with Article 4(4) of the Habitats Directive, Member States have a maximum of six years from the site being adopted as a SCI to implement the necessary management measures and formally designate the site as a SAC.

² <http://www.legislation.gov.uk/ukSI/2007/1842/contents/made>



Legend

- Croker Carbonate Slabs SCI (v2)
- Low relief MDAC (2004 & 2008 surveys)
- High Relief MDAC (2004 & 2008 surveys)
- Possible MDAC (2013 survey)
- 12nm Limit
- UK Continental Shelf



Site map projected in WGS1984 World Mercator. This product has been derived in part from material obtained from the UK Hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). World Vector Shoreline © US Defense Mapping Agency. Map copyright JNCC 2016.

Figure 2: Map of Croker Carbonate Slabs SCI site boundary and Annex I Submarine structures made by leaking gases (referred to as methane-derived authigenic carbonate or MDAC) extent.

3. Process

This chapter describes the process from when the initiative to protect Submarine structures made by leaking gases from fisheries activities at Croker Carbonate Slabs was commenced at a fisheries management workshop held in Dublin in May 2014 jointly by the Department for Environment Food and Rural Affairs (Defra) and the Joint Nature Conservation Committee (JNCC) until submission of fisheries management measures in form of 'A Joint Recommendation' by the UK, Ireland and Belgium to the European Commission.

3.1 Stakeholder workshop

A stakeholder workshop was held in Dublin in May 2014 to allow for stakeholder input into the development of management measures for Celtic Sea sites, Croker Carbonate Slabs SCI and Croker Carbonate Slabs SCI. The workshop was attended by representatives of the Irish, Northern Irish, and UK fishing industries, Irish, Northern Irish and Scottish Governments, and environmental Non-Governmental Organisations (NGOs).

Participants were provided with fisheries management options papers for the sites, and invited to contribute to the process of developing appropriate management measures to achieve the conservation objectives while complying with the principals of proportionality and non-discrimination.

Croker Carbonate Slabs SCI management discussions were based upon the extent of Submarine structures made by leaking gases identified by a recent survey of the site, rather than the site boundary itself. It was explained to attendees that it was the intention of the UK Government to amend the site boundary in light of the recent survey's results; therefore this approach would ensure that the full extent of Submarine structures made by leaking gases within the area received the appropriate levels of protection required.

While it was not possible to achieve agreement on management measures during this initial meeting, stakeholder views were recorded and taken into consideration in subsequent drafting of measures. A note from the meeting is available upon request from Defra.

3.2 Consultation on management proposals

Draft proposals for fisheries management measures were developed using feedback from the stakeholder workshops as well as advice from the UK's statutory nature conservation bodies, the JNCC and Natural England, and offshore fisheries regulator, the MMO.

Fisheries management measures were developed in close coordination with other Member States with a direct management interest in the sites. Draft management proposals were subject to a six week period of consultation with Member States with a direct management interest in the sites and the Northwest Waters Advisory Council.

3.3 Formal agreement of Joint Recommendations

Finalised management proposals were then presented to other Member States with a direct management interest in the sites for agreement that sufficient information had been provided in order to commence the formal agreement of the proposals as Joint Recommendations. [Following this, ad hoc meetings of the Northwest Waters Article 11 sub-group were held to start formal agreement proceedings for the Joint Recommendations. Any outstanding issues were then addressed before agreement was reached on the Joint Recommendations by members of the Northwest Waters High-Level Group and they were submitted to the European Commission for adoption.]

3.4 Involvement of the North West Waters Advisory Council

The North Western Waters Advisory Council (NWWAC) attended the workshop in Exeter in May 2016 where initial proposals for management were discussed and the UK presented its rationale behind the measures proposed. In January 2017, the UK consulted the NWWAC on proposals for fisheries management measures in 12 MPAs, in line with the provision outlined in Article 11 of the CFP. The NWWAC held a meeting on 28 February 2017 where the proposed measures were presented and discussed, which the UK attended.

On 30 March 2017, the UK replied to a response from the Secretariat covering general comments on the proposals as well as some specific comments on several of the proposals for the MPAs in question. With respect to Croker Carbonate Slabs SCI the OIG members consider that the proposal banning of the use of demersal towed gears, dredges and seines across most of the site to be the only legally compliant option.

4. Rationale for measures

Direct evidence of impacts of fishing gears on Submarine structures made by leaking gases is limited. However, the biological communities that develop on such exposed structures typically include many of the same species that can be found on subtidal rocky habitats in similar environmental conditions, and it is likely that the effects of fishing on the habitat will be similar. The impacts of fishing gears on Submarine structures made by leaking gases have therefore been assessed using evidence for the impacts on analogous subtidal rocky habitats.

Impacts of mobile demersal gears (including scallop dredges, beam trawls, otter trawls and seine nets)

H1180 Submarine structures made by leaking gases

Demersal towed gears have the potential to effect the long term natural distribution of the features through physical removal of carbonate structures by dragging bottom-fishing gear over the seabed (Sewell and Hiscock, 2005). Demersal trawling at the site may result in dispersal, fragmentation and possibly burial of some carbonate formations. Towed fishing gears can also impact the structure and function of the habitat and the long term survival of its associated species. The use of towed fishing gears is likely to cause damage or death of fragile, erect species, such as sponges and corals (Løkkeborg, 2005; Freese et al. 1999). Other species such as hydroids, anemones, bryozoans, tunicates and echinoderms are vulnerable to mobile fishing gear (McConnaughey et al. 2000; Sewell and Hiscock, 2005). Recovery is likely to be slow (Foden et al. 2010). Where fragile, slow growing species occur, even low levels of fishing have the potential to change the structure and function of the habitats and may result in the loss of some characteristic species.

Whilst it is unlikely that mobile bottom contact gear can affect the long-term natural distribution of submarine structures made by leaking gases, there is evidence to indicate that the use of bottom contacting mobile gears can impact the structure and function of the habitat and the long term survival of its associated species.

Consequently, it is concluded that use of any mobile demersal gear (including seine netting) would result in an unacceptable risk to the conservation objectives for Submarine structures made by leaking gases. In order to remove this risk, it was decided to prohibit the use of mobile demersal gear over all areas of the site where the feature is present. This approach is consistent with the UK Government's precautionary approach and is described further in Section 7 of Annex A.

Impacts of static demersal gears (including gillnets, trammel nets, longlines, pots and traps)

H1180 Submarine structures made by leaking gases

Mechanical impacts of static gear on Submarine structures made by leaking gases (e.g. weights and anchors hitting the seabed, hauling gear over seabed, rubbing/entangling effect of ropes) can damage some species (Eno et al. 1996). Other species appear to be resilient to individual fishing operations but the effects of high fishing intensity are unknown (Eno et al. 2001). Recovery may be slow, resulting in significant reduction or even loss of characteristic species (Foden et al. 2010). The

individual impact of a single fishing operation may be slight but cumulative damage may be significant (Eno et al. 2001; Foden et al. 2010).

Currently levels of static demersal gear fishing within the site are low. It is unlikely that this intensity of demersal static gear activity will affect the long-term natural distribution of reef features or the structure and function of the habitat and long term survival of its associated species. However, if monitoring indicates impacts from these gears, it may be necessary to introduce some degree of management in the future.

5. Principles

While developing the Joint Recommendations, the following principles were applied:

1) Sound scientific basis

This proposal for fisheries management measures is based on available scientific evidence. JNCC has provided scientific advice in relation to the risk to achieving the conservation objective for the site. The proposal has also been reviewed by Cefas. The advice from Cefas was that this approach reduces the pressures from demersal towed gears sufficiently to contribute to long term progress in maintaining the Annex 1 feature in favourable condition.

2) Stakeholder involvement

An important element of the process of formulating fisheries management measures has been the involvement of stakeholders. This has been outlined in further detail in sections 3.1 and 3.2.

3) Transparency

In this proposal the UK has been transparent on the data being used, the steps being taken and the methodology used, as well as the involvement of stakeholders.

4) Proportionality

An approach was sought that would deliver a regulatory proposal that delivers a key contribution to the achievement of the conservation objectives while minimising the effect on the fishing industry. A key safeguard in the process to deliver such an outcome was to follow the European Commission guidance in this regard, which described a proportional approach towards balancing sustainable exploitation of resources and the need to conserve important habitats, including a precautionary approach to fisheries management.

5) *Non discrimination*

The proposal will need to ensure that measures are not applied in a discriminatory manner. A coordinated approach between Member States is the only way of ensuring non-discrimination for fleets affected by the proposed measures. Ultimately, a proposal is presented to the European Commission for regulation in the framework of the Common Fisheries Policy, ensuring a fair outcome across the fishing sector affected.

6. Proposal scope

The proposed management boundary for the prohibition of mobile demersal gears encompasses the entire Croker Carbonate Slabs SCI site boundary to ensure the full protection of Annex I Habitat Submarine structures made by leaking gases.

Annex A – Overview of the 11 information items in the Commission’s guidelines from 2008

The Commission has issued guidance on a consistent approach to requests for fisheries management measures under the Common Fisheries Policy³. Accordingly, this document provides the scientific and technical information required to support a formal request to the Commission for fisheries regulation under the Common Fisheries Policy.

1. Comprehensive description of the natural features including distribution within the site

The Croker Carbonate Slabs SCI is an area in the mid-Irish Sea, approximately 30km west of Anglesey, where the Annex I feature “Submarine structures made by leaking gases” has been identified. The seabed surface is composed of extensive areas of exposed methane-derived authigenic carbonate (MDAC). The seabed habitats created by these MDAC structures are distinctive, supporting a diverse range of marine species that are absent from the surrounding seabed characterised by coarse sediment.

MDAC is formed when calcite precipitates and infills the pore spaces between the sand grains, creating a layer or crust that can form carbonate ‘pavements’ and ‘chimneys’; significant hard ground compared to the surrounding sediment. When exposed at the seabed surface, MDAC appears to be broken down and eroded rapidly both through biological activity (boring by bivalve molluscs) and by water currents into sand and gravel sized fragments.

At the time of site designation, the Annex I Habitat was delineated from acoustic and groundtruthing data collected during surveys in 2004 and 2008. Acoustic data from 2004 indicated a generally flat seabed with large depressions up to 500m in diameter, with steep sides, alongside small mounds and sediment waves. In addition, a cliff structure 6-8 m high and up to 500m long was recorded. Survey of this area found cemented rocks providing a firm substrate for a diverse range of fauna. Chemical analysis of carbonate samples collected during this survey indicated they were methane-derived and thermogenic in origin. The survey work undertaken in 2008 further established the presence of MDAC over a wider area. The feature was mapped using high resolution acoustics (multibeam echo-sounder and sidescan sonar) and validated using seabed imagery and grab samples. Within the site, the MDAC structures took two key forms, extensive MDAC ‘pavement’ or ‘slabs’ up to 20mm thick (termed ‘low relief’ MDAC) and larger structures over 20mm thick and up

³ http://ec.europa.eu/environment/nature/natura2000/marine/docs/fish_measures.pdf

to 2m high (termed 'high relief' MDAC). The exposed MDAC was observed forming two longitudinal features with a SSW-NNE orientation.

Post site designation, further surveys were carried out in 2012 and 2013 collecting full coverage acoustic data and further groundtruth samples within the site. The acoustic data clearly showed high and low relief MDAC features, with patches of seabed showing a similar acoustic signature extending outside the site boundary as originally designated. The data were used by Cefas to produce a broadscale habitat map of the region. These patches of hard substrate are inferred to be MDAC based on previous data from within the site. Based on this information, in 2015 JNCC advised an update to the feature extent, and to the site boundary. The figures shown within the current document reflect this more recent data.

2. Scientific rationale for the site's selection in accordance with the information provided in the Natura 2000 data form. Intrinsic value of its features. Specific conservation objectives

The Croker Carbonate Slabs SCI is wholly located within the Irish Sea Regional Sea and is characteristic of the Annex I Habitat 1180 Submarine structures made by leaking gases.

As the known occurrence of the Annex I Habitat is limited in UK waters, the MDAC structures within the site make a valuable contribution to representativity of this habitat in UK waters.

2.1 Conservation Objectives

The Croker Carbonate Slabs SCI contains the Annex I Habitat Submarine structures made by leaking gases.

Conservation objectives set out the desired quality of the protected features within each Natura 2000 site. The conservation objective for the SCI is, subject to natural change, **maintain** the protected **Submarine structures made by leaking gases** feature to favourable condition, such that:

- The natural environmental quality is maintained;
- The natural environmental processes are maintained; and
- The extent, physical structure, diversity, community structure and typical species representative of **Submarine structures made by leaking gases** in the Irish Sea are maintained.

3. Basis for the spatial extent of the site boundary clearly justified in terms of conservation objectives

The site boundary has been defined using JNCC's marine SAC boundary definition guidelines (JNCC, 2012). The boundary encloses the minimum area necessary to ensure inclusion of the Annex I habitat, following the extent of the feature as closely as possible. The site boundary is a revision of the original SAC boundary, and has been extended to encompass a large contiguous area to the east of the original site, together with smaller patches in the south west. The western boundary of the site follows the median line between the offshore waters of the UK and the Republic of Ireland.

The boundary includes a buffer of approximately 240m around the known extent of MDAC, based on a fishing warp ratio of 3:1 with an average depth of 80m. In the southern part of the site, where the feature occurs in deeper waters, the buffer was adjusted to 300m.

4. Threats to the long-term natural distribution, structure and functions of the habitats and the long-term survival of associated species from different types of fishing gear. List of other human activities in the area that could damage the habitats

Direct evidence of impacts of fishing gears on Submarine structures made by leaking gases is limited. However, the biological communities that develop on such exposed structures typically include many of the same species that can be found on subtidal rocky habitats in similar environmental conditions, and it is likely that the effects of fishing on the habitat will be similar. The impacts of fishing gears on Submarine structures made by leaking gases have therefore been assessed using evidence for impacts on analogous subtidal rocky habitats.

4.1 Impacts of mobile demersal gears (including scallop dredges, beam trawls, otter trawls and seine nets)

H1180 Submarine structures made by leaking gases

Demersal towed gears have the potential to effect the long term natural distribution of the features through physical removal of carbonate structures by dragging bottom-fishing gear over the seabed (Sewell and Hiscock, 2005). Demersal trawling at the site may result in dispersal, fragmentation and possibly burial of some carbonate formations. Towed fishing gears can also impact the structure and function of the habitat and the long term survival of its associated species. The use of towed fishing gears is likely to cause damage or death of fragile, erect species, such as sponges and corals

(Løkkeborg, 2005; Freese et al. 1999). Other species such as hydroids, anemones, bryozoans, tunicates and echinoderms are vulnerable to mobile fishing gear (McConnaughey et al. 2000; Sewell and Hiscock, 2005). Recovery is likely to be slow (Foden et al. 2010). Where fragile, slow growing species occur, even low levels of fishing have the potential to change the structure and function of the habitats and may result in the loss of some characteristic species.

Whilst it is unlikely that mobile bottom contact gear can affect the long-term natural distribution of submarine structures made by leaking gases, there is evidence to indicate that the use of bottom contacting mobile gears can impact the structure and function of the habitat and the long term survival of its associated species.

Consequently, it is concluded that use of any mobile demersal gear (including seine netting) would result in an unacceptable risk to the conservation objectives for Submarine structures made by leaking gases. In order to remove this risk, it was decided to prohibit the use of mobile demersal gear over all areas of the site where the feature is present. This approach is consistent with the UK Government's precautionary approach and is described further in Section 7.

4.2 All demersal static gears (including gillnets, trammel nets, longlines, pots and traps)

H1180 Submarine structures made by leaking gases

There is no direct evidence from which to determine impacts of static gears on submarine structures made by leaking gases. However, the biological communities that develop on exposed structures typically include many of the same species that can be found on subtidal rocky habitats in similar environmental conditions and it is likely that the effects of fishing will be similar.

Mechanical impacts of static gear on Submarine structures made by leaking gases (e.g. weights and anchors hitting the seabed, hauling gear over seabed, rubbing/entangling effect of ropes) can damage some species (Eno et al. 1996). Other species appear to be resilient to individual fishing operations but the effects of high fishing intensity are unknown (Eno et al. 2001). Recovery may be slow, resulting in significant reduction or even loss of characteristic species (Foden et al. 2010). The individual impact of a single fishing operation may be slight but cumulative damage may be significant (Eno et al. 2001; Foden et al. 2010).

Currently levels of static demersal gear fishing within the site are low. It is unlikely that this intensity of demersal static gear activity will affect the long-term natural distribution of reef features or the structure and function of the habitat and long term survival of its associated species. However, if monitoring indicates impacts from these gears, it may be necessary to introduce some degree of management in the future.

4.3 Other Human activities

One telecommunication cable runs east/west across the northern portion of the site. Cables are largely an unregulated activity in offshore waters depending on the type of cable being laid or maintained, where it is being laid between and whether the cable is part of a larger development (which may be regulated). Any cable not directly associated with an energy installation does not require a marine licence beyond 12 nautical miles.

A low level of commercial shipping activity takes place within the MPA, which involves vessels transiting the site. Due to the location of the MPA it is unlikely that vessels will anchor within the site. Under international law, ships have a right of passage at sea including in areas designated as MPAs (unless management specifies the restriction of ship transiting as outlined through an International Maritime Organisation measure). The pressures associated with shipping activity within Croker Carbonate Slabs are not considered likely to impact the protected features of the site.

5. Fleet activity in the area and in the region, distribution of fleets (by nation, gear, and species), and information on target and bycatch species over 6 years from 2010 to 2015 inclusive.

5.1 Validity of data

In the section relevant fleet statistics for the years 2010- 2015 are provided as requested by the European Commission guidance. The UK, as the initiating Member State, analysed fishing from Member States active in the area of Croker Carbonate Slabs SCI over a six year period. This approach is consistent with other management proposals methodology across Member States. A four year dataset is considered to be representative of the contemporary fisheries carried out in the area and thus valid for the purposed of underpinning the current proposal.

Overall, fisheries have been changing since early 2000s as a result of changes in economic and regulatory conditions, e.g. fuel prices and engine efficiencies, the introduction of individual transferable quota (ITQ) systems ⁴ in various forms. Fishing fleets have been reduced in terms of the number of vessels and fishing effort has decreased. Fishing opportunities are dictated by stock status, market conditions, fuel prices and technological opportunities as well as quota availability. In addition, policy decisions on alternative use of marine habitat, sustainable exploitation and environmental policies will influence fishing opportunities.

The fisheries are dynamic and sound judgement is required when using the data. However, more recent datasets are expected to improve our understanding of the structure of the fisheries.

Vessels from three member states have been present within the site according to VMS reports (pings). However, only two nationalities (UK and Ireland) operate across the site regularly and another across the ICES rectangles (Belgium).

To note, unknown gear classification relates to a specific VMS report which does not have valid corresponding log book information.

⁴ Individual transferable quotas (ITQs) are a type of catch share system, which is a tool used by some governments to manage fisheries

5.1.1 Data analysis

Data presented has been analysed by applying the standard methodology used to identify whether or not vessels have been active in a specified spatial area. VMS reports (“pings”) were used to indicate vessel fishing activity based on the speed of the vessel as contained within the VMS report. Each ping was classified as indicative of fishing activity if, the speed was zero knots or greater and less than or equal to six knots⁵.

Each speed filtered VMS ping (0-6kts) received from a vessel in ICES statistical rectangles 35E4 and 36E4 (the site is within these ICES rectangles) has been extracted from the UK VMS system. Each ping will hold the following information: the vessel identity (CFR) number; position and speed; and the date and time of that ping. These fishing pings from the ICES rectangle concerned are then processed in GIS software to identify whether the position was inside or outside the Croker Carbonate Slabs SCI. This provides a proportion of pings falling within the area for the vessels of each Member State.

This proportion was then applied to landings data to allow estimates of landings value and quantity derived from within the Croker Carbonate Slabs SCI. Landings values and quantities for UK vessels were derived from UK statistical data held by the MMO. Landings values and quantities for non-UK vessels were derived from the Scientific, Technical and Economic Committee for Fisheries (STECF)⁶ and from a Defra coordinated data call conducted in 2015 and 2016.

5.1.2 Data limitations

The data provided in this section is subject to several limitations:

1. Data are only available from vessels that are required to carry EU VMS (i.e. vessels 12 metres and above in length). As such their pattern of activity may differ from vessels of less than 12 metres in length.
2. Vessel numbers derived from VMS can suggest increase over the years analysed, however it is important to note that during this period VMS was introduced to the 12m and above fleet, in addition to the 15m and above fleet.

⁵ Article 50 of Council Regulation (EC) No 1224/2009 : <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF>

⁶ <http://stecf.jrc.ec.europa.eu/index.html>

3. Unless stated otherwise, all VMS data shown in this paper is over a six year period 2010-2015. Landings information is over a five year period 2010-2014, as a result of datacall to member states for information in 2015.
4. The speed thresholds (0-6 knots) used to make assumptions as to whether a vessel is fishing or not only provide indications, not definitive proof of fishing and may not be equally valid for all gear types.
5. The proportion of activity inside an area is based on the number of pings as opposed to actual fishing time.
6. Only one VMS report from one Portuguese vessel in the relevant ICES rectangle over the years analysed (2010 only). No associated Portuguese landings data.

5.2 Fleet activity by state

From 2010 to 2015 vessels from four Member States were active within the Croker Carbonate Slabs SCI (see Table 1). Of these, the most significant activity was from Ireland and UK vessels.

Table 1: Number of vessels and VMS pings (0-6knots) associated with Croker Carbonate Slabs SCI by year and Member State.

Nationality		2010	2011	2012	2013	2014	2015
		Total	Total	Total	Total	Total	Total
Belgium	Number of vessels	1	0	0	0	0	0
	Number of pings	4	0	0	0	0	0
Ireland	Number of vessels	2	1	4	3	2	3
	Number of pings	2	1	68	9	26	10
Portugal	Number of vessels	1	0	0	0	0	0
	Number of pings	1	0	0	0	0	0
UK	Number of vessels	7	5	9	3	0	0
	Number of pings	10	5	13	3	0	0

5.3 Landings values

As shown in Tables 2 and 3 the gear groups of major importance in terms of quantity and value of landings include (1) beam trawls directed at demersal fish (flatfish), (2) otter board bottom trawls directed at shellfish. Fishing for shellfish such as scallops and Nephrops occurs in this region of the Irish Sea.

The fisheries data for 2010-2015 inclusive in Croker Carbonate Slabs SCI involves similar gear types but only two gear groupings produces the highest effort and values. There are otter trawls and beam trawls. There are low but regular reports of pelagic gears such as netting within the sites

Table 2.1: Landings (tonnes) from vessels operating in ICES rectangles 36E4 and 35E4 (surrounding Croker Carbonate Slabs SCI) by gear type, year and Member State.

Sum of Quantity Tonnes (36E4, 35E4)		Year						
Nationality	Gear	2010	2011	2012	2013	2014	2015	Grand Total
BEL	Dredge	11.30	0.00	0.00	0.00	0.00		11.30
	Otter Trawls bottom	3.53	50.52	20.91	0.00	19.91		94.87
	Beam Trawls	238.24	470.72	404.30	259.10	131.22		1,503.59
BEL Total		253.07	521.24	425.22	259.10	151.13		1,609.75
FRA	Bottom trawls	0.00	0.00	0.00	2.70	0.00		2.70
FRA Total		0.00	0.00	0.00	2.70	0.00		2.70
IRL	Beam Trawls	267.47	365.29	226.97	167.12	287.29		1,314.14
	Demersal Seines	2.08	3.94	8.25	10.82	0.22		25.31
	Dredge	5.47	10.10	34.10	57.06	131.35		238.08
	Nets	5.40	7.71	0.00	0.00	0.00		13.11
	Otter trawls	2,912.58	3,952.31	3,488.54	2,436.09	2,765.57		15,555.09
	Pelagic Trawls	0.51	7.47	0.00	0.00	0.27		8.25
	Pots	402.62	449.88	495.09	421.43	276.11		2,045.13
IRL Total		3,596.13	4,796.70	4,252.95	3,092.52	3,460.81		19,199.11
UK	Beam trawls	0.00	23.53	51.36	0.30	0.00	0.00	75.20
	Boat dredges	36.63	168.48	59.53	103.26	79.04	278.21	725.16
	Gillnets (all)	0.00	0.00	0.23	0.05	0.00	0.00	0.27
	Hand lines and pole-lines (hand-operated)	0.00	0.00	0.24	0.06	0.00	0.00	0.30
	Mechanized dredges	0.00	84.09	9.84	0.00	0.00	0.32	94.25
	Nephrops trawls	2,535.53	2,628.55	2,362.90	2,127.88	1,399.61	432.76	11,487.22
	Otter trawls (Bottom and not specified)	3.89	26.98	183.10	189.89	699.65	1,976.08	3,079.59
	Otter trawls - mid water	228.03	139.68	9.64	43.66	382.99	416.98	1,220.98
	Otter twin trawls	0.00	0.00	0.00	0.00	3.62	50.51	54.13
	Pair trawls - bottom	0.00	0.00	0.00	12.41	0.00	0.00	12.41

Pair trawls - mid water	0.00	23.49	0.00	3.42	0.00	0.00	26.91
Pots	107.30	90.93	163.01	108.51	98.73	30.58	599.06
Scottish seines	259.51	179.83	153.85	25.16	57.81	102.40	778.56
UK Total	366.81	270.76	316.86	133.67	156.54	132.98	1,377.63
Grand Total	4,216.00	5,588.70	4,995.03	3,487.99	3,768.48	132.98	22,189.18

Table 2.2: Landings (value) from vessels operating in ICES rectangles 36E4 and 35E4 (surrounding Croker Carbonate Slabs SCI) by gear type, year and Member State.

Sum of Value £ (Dec2015)		Year						
Nationality	Gear	2010	2011	2012	2013	2014	2015	Grand Total
BEL	Dredge	£10,196	£0	£0	£0	£0		£10,196
	Otter Trawl bottom	£9,441	£117,870	£59,412	£0	£32,585		£219,307
	Beam Trawl	£720,672	£1,235,707	£1,065,861	£620,167	£302,975		£3,945,382
BEL Total		£740,309	£1,353,576	£1,125,273	£620,167	£335,560		£4,174,885
FRA	Bottom trawls	£0	£0	£0	£4,141	£0		£4,141
FRA Total		£0	£0	£0	£4,141	£0		£4,141
IRL	Beam Trawls	£491,436	£635,449	£440,651	£327,550	£475,714		£2,370,801
	Demersal Seines	£2,027	£4,299	£7,860	£10,828	£250		£25,262
	Dredge	£10,369	£58,629	£63,386	£122,941	£223,978		£479,304
	Nets	£5,982	£10,753	£0	£0	£0		£16,736
	Otter trawls	£5,802,385	£10,690,245	£9,332,037	£6,602,915	£7,867,303		£40,294,885
	Pelagic Trawls	£602	£20,801	£0	£0	£314		£21,716
	Pots	£219,031	£261,706	£425,731	£361,568	£283,056		£1,551,091
IRL Total		£6,531,832	£11,681,882	£10,269,664	£7,425,802	£8,850,615		£44,759,795
UK	Beam trawls	£0	£66,533	£224,706	£523	£0	£0	£291,762
	Boat dredges	£33,611	£243,956	£87,804	£153,358	£129,413	£239,765	£887,907
	Gillnets (all)	£0	£0	£1,149	£237	£0	£0	£1,386
	Hand lines and pole-lines (hand-operated)	£0	£0	£183	£73	£0	£0	£256
	Mechanized dredges	£0	£29,773	£3,520	£0	£0	£1,200	£34,493
	Nephrops trawls	£3,678,825	£5,389,638	£5,259,112	£3,865,054	£2,872,570	£887,077	£21,952,276
	Otter trawls (Bottom and not specified)	£5,293	£46,967	£113,488	£319,595	£1,417,599	£3,802,816	£5,705,759
	Otter trawls – mid water	£329,026	£251,475	£23,502	£91,952	£412,503	£484,949	£1,593,405
	Otter twin trawls	£0	£0	£0	£0	£7,082	£80,928	£88,010
	Pair trawls - bottom	£0	£0	£0	£10,047	£0	£0	£10,047

Pair trawls – mid water	£0	£10,571	£0	£2,710	£0	£0	£13,281
Pots	£79,753	£76,022	£125,886	£98,470	£102,175	£39,219	£521,525
Scottish seines	£258,168	£195,078	£153,281	£24,701	£99,234	£133,151	£863,613
UK Total	£4,384,675	£6,310,012	£5,992,631	£4,566,721	£5,040,577	£5,669,104	£31,963,720
Grand Total	£11,656,816	£19,345,470	£17,387,569	£12,616,830	£14,226,751	£5,669,104	£80,902,540

5.4 Annual variation in fishing activity

Fishing effort is indicated by the number of VMS reports at speeds indicative of fishing (from 0 to 6 knots) received by the UK Fisheries Monitoring Centre. Reports are sent by every fishing vessel over 12metres in length at 2 hourly intervals, with the exception of the French VMS activity. This is received at an hourly rate. There was no French VMS activity recorded in the SCI in the years analysed.

Over the years analysed (2010-2015), the total volume of vessels fishing in the SCI by other Member States were 17 vessels and 24 vessels from the UK, making a total of 41. Vessels have been counted more than once if they enter the SCI in separate years. See Table 1 for more detail.

VMA Activity

As VMS reports are generally set to report (or ping) at 2 hourly intervals, it would be very difficult to exclude the possibility that more fishing activity is occurring in these sites than is recorded. A vessel could cross over the SCI at a speed of less than 6kts and not be recorded.

A Belgian and a Portuguese vessel were recorded within the SCI, however this was a rare observation with one report each in 2010 only and not occurring in any other year.

The number Irish VMS vessels in the site were low over the years analysed (2010-2015). The numbers ranged from 1 vessel in 2011 to a high of 4 vessels in 2012. The number of VMS pings recorded in the site is at low level too, with the volume level starting at its highest level in 2012 with 68 pings. This dropped to 9 pings in 2013 before gradually rising to 26 pings the following year in 2014. In 2015 the numbers are 26 and 10 pings respectively. The location of their activity was concentrated in the north-eastern part of the site, with noticeable activity occurring outside of the site.

The number of UK VMS vessels operating in the site has decreased over recent years, with no vessels recorded in 2014 and 2015. In 2010 the number of vessels were 7, this number rose to a high in 2012 before dropping to 3 in 2013. In Addition the volume of VMS pings were low, with 10 pings recorded in 2010 to a high of 13 pings in 2012 and 3 pings in 2013. There were no concentrated locations of the UK activity over the years analysed.

Landing information

Belgian tonnage and landings values are at ICES rectangle level and there was only one report of Belgian fishing activity occurring with the SCI. It is likely that the majority of the fishing activity is occurring outside the site but within the ICES rectangles.

The Belgian landings in ICES rectangles 36E4 and 35E4 decrease in quantity after 2011. In 2010 there were 253 tonnes landed with an approximate value of £704,309, this rose to a peak in 2011 with 521 tonnes landed and an approximate value of £1.3million. The quantities gradually decrease thereafter with 425 tonnes in 2012, 259 tonnes in 2013 and 151 tonnes in 2014, with approximate values of £1.1million, £620,167 and £335,560 respectively. The vast majority of these landings were generated by the beam trawling fleet.

French bottom trawling was observed through the landings values in 2013 at a very low number of 2.70 tonnes and value of £4,141. There are no French VMS reports in the site so it is likely that French activity is rare and occurs outside the SCI. No other landings information was recorded between 2010 and 2014.

The Irish landings recorded in ICES rectangles 36E4 and 35E4 have been at fairly static levels over recent years. In 2010 there were 3,596 tonnes recorded with an approximate value of £6.5million. This rose to a high in 2011 with 4,796 tonnes and an approximate value of £11.6million before gradually declining to 4,252 tonnes in 2012, 3,092 tonnes in 2013 and 3,460 tonnes in 2014, with approximate values of £10.2million, £7.4million and £8.8million respectively. The Irish landings are mostly attributed to bottom otter and beam trawls targeting shellfish. As there are only few vessels with associated VMS reports in the site, it is unlikely that these landings figures show an accurate representation of the activity in the SCI. However the Irish activity (VMS) associated with Croker Carbonate Slabs SCI is the highest of all Member States including the UK.

The UK landings have been gradually decreasing over the years within ICES rectangles 36E4 and 35E4. In 2010 there were 366 tonnes recorded with an approximate value of £4.3million, this dropped to 270 tonnes and £6.3million in 2011. The quantity rose to a high in 2012 with 316 tonnes and a value of £5.9million before decreasing each year to 132 tonnes in 2015 and an approximate value of £5.6million.

*Other Member States landings values were provided to the UK in Euros. The MMO used a currency conversion from Euro to Sterling in December 2015.

Figure 3: VMS reports from 2010 indicating all fishing activity in Croker Carbonate Slabs SCI by Nationality.

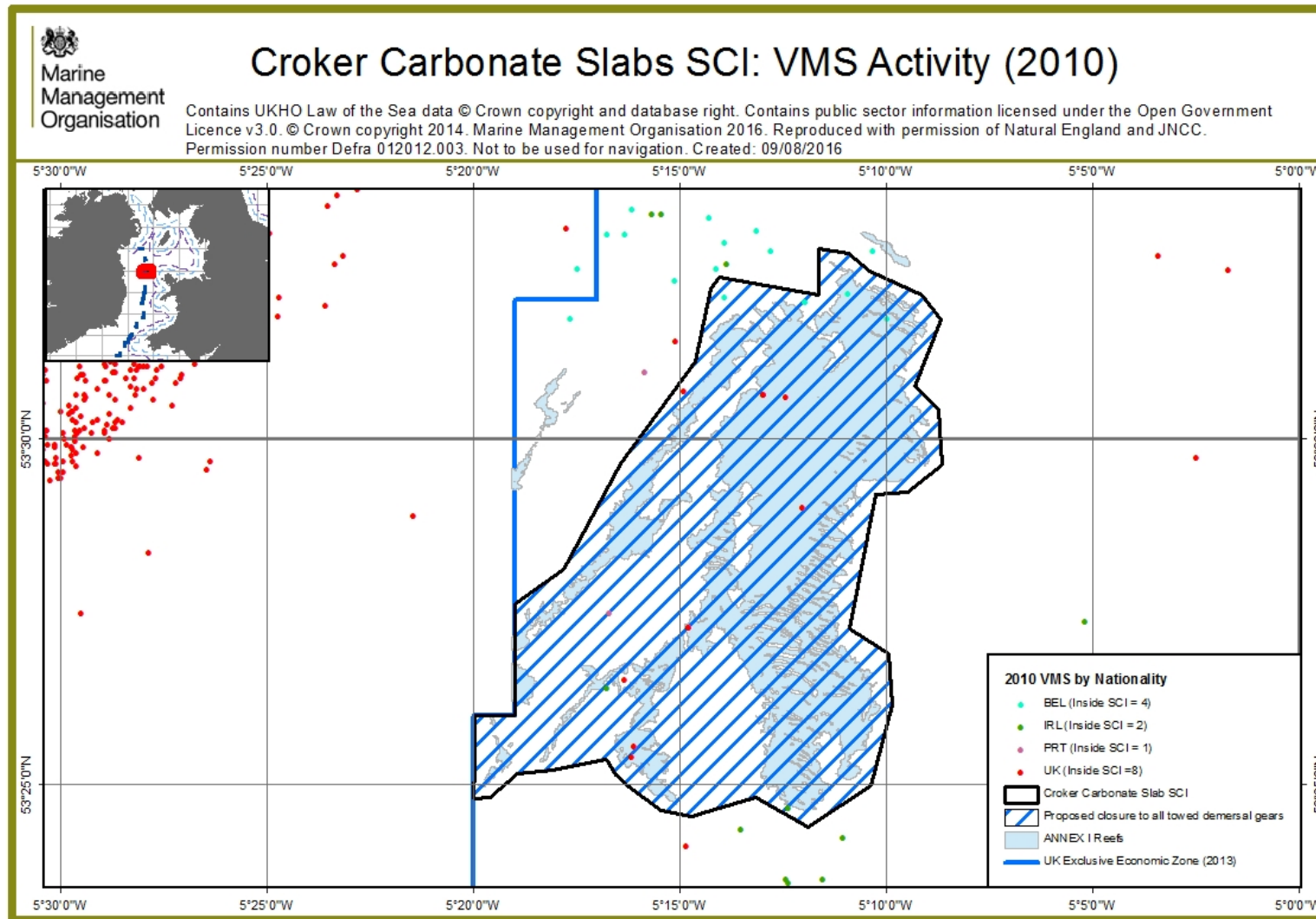


Figure 4: VMS reports from 2011 indicating all fishing activity in Croker Carbonate Slabs SCI by Nationality.

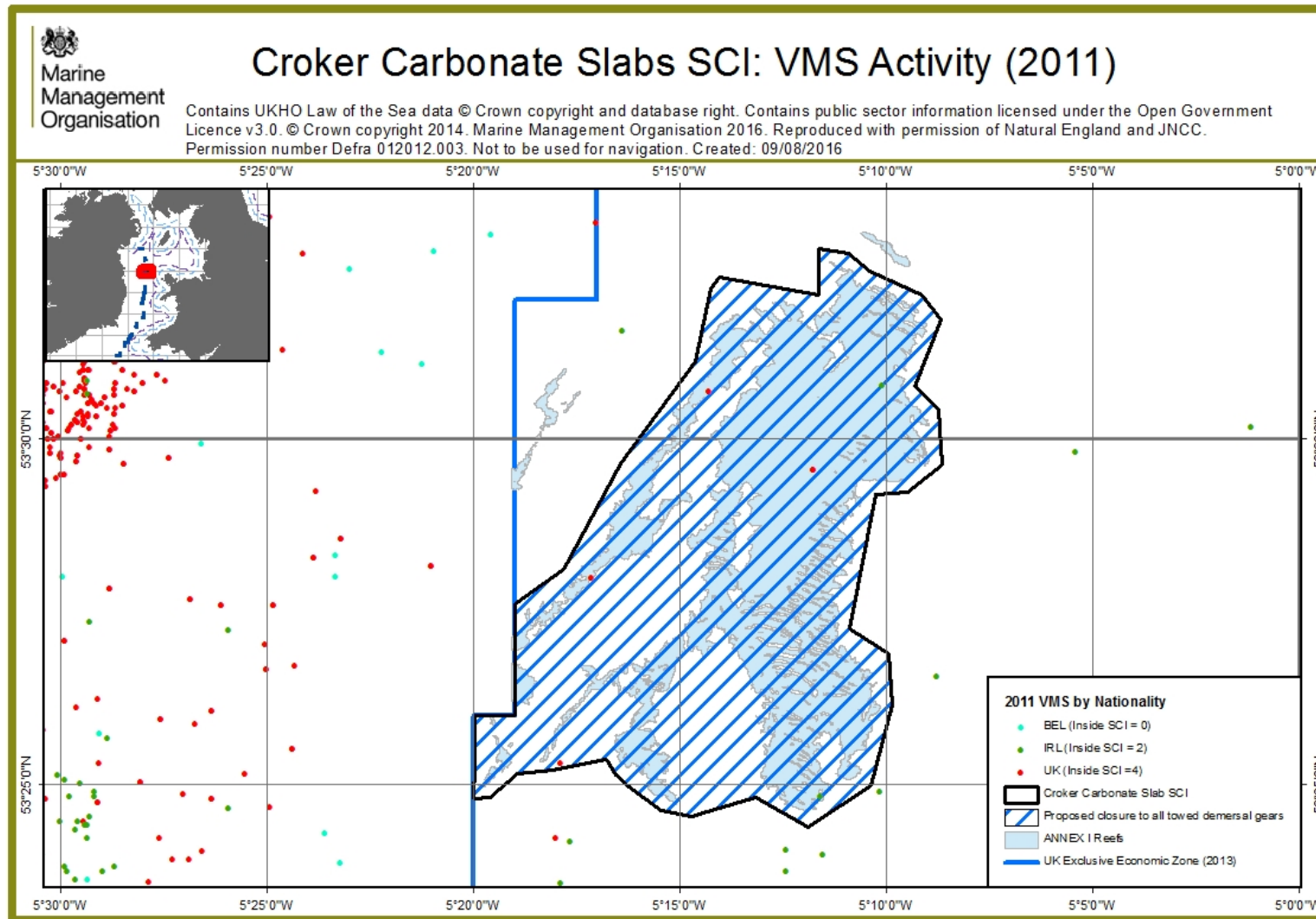


Figure 5: VMS reports from 2012 indicating all fishing activity in Croker Carbonate Slabs SCI by Nationality.

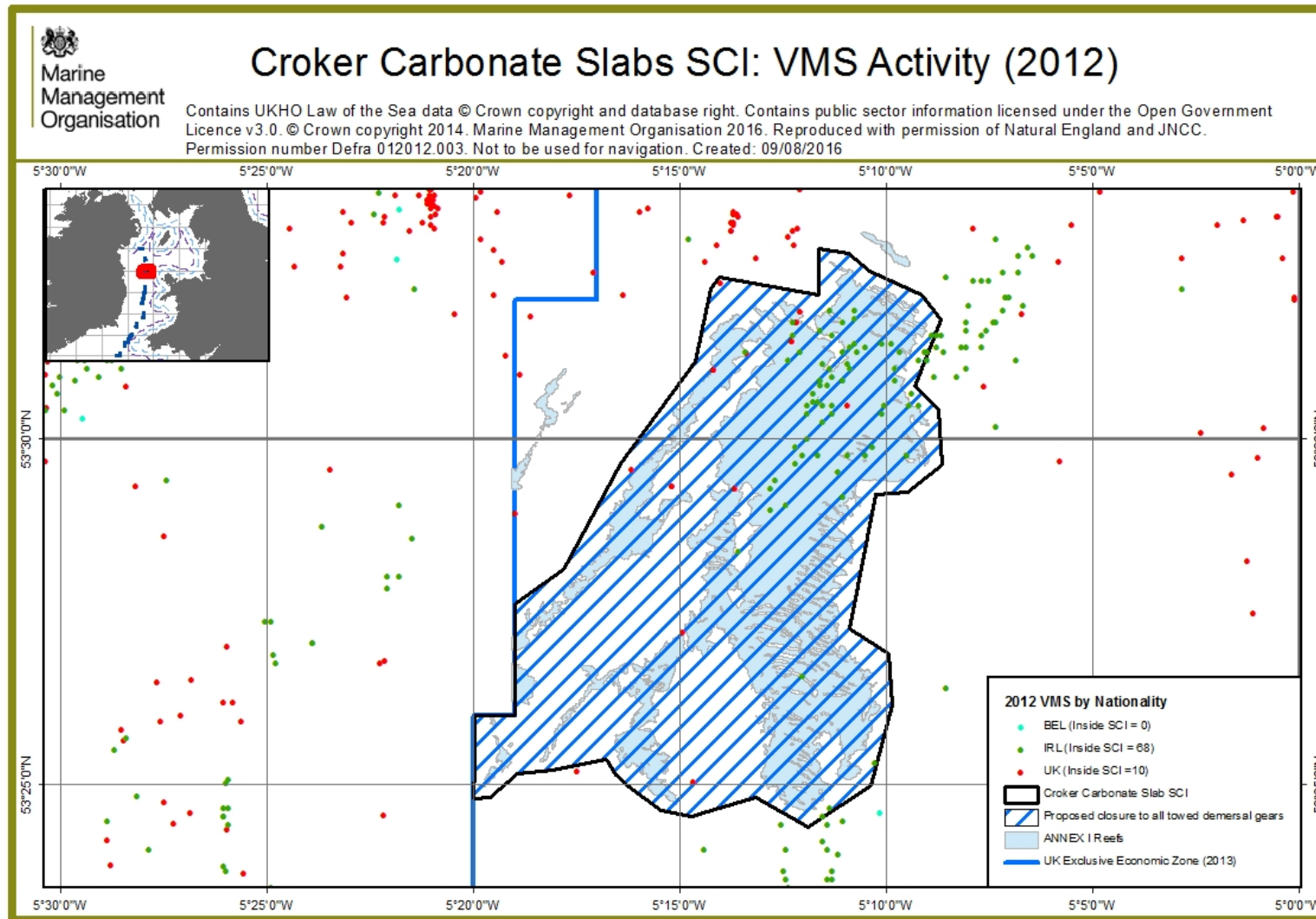


Figure 6: VMS reports from 2013 indicating all fishing activity in Croker Carbonate Slabs SCI by Nationality.

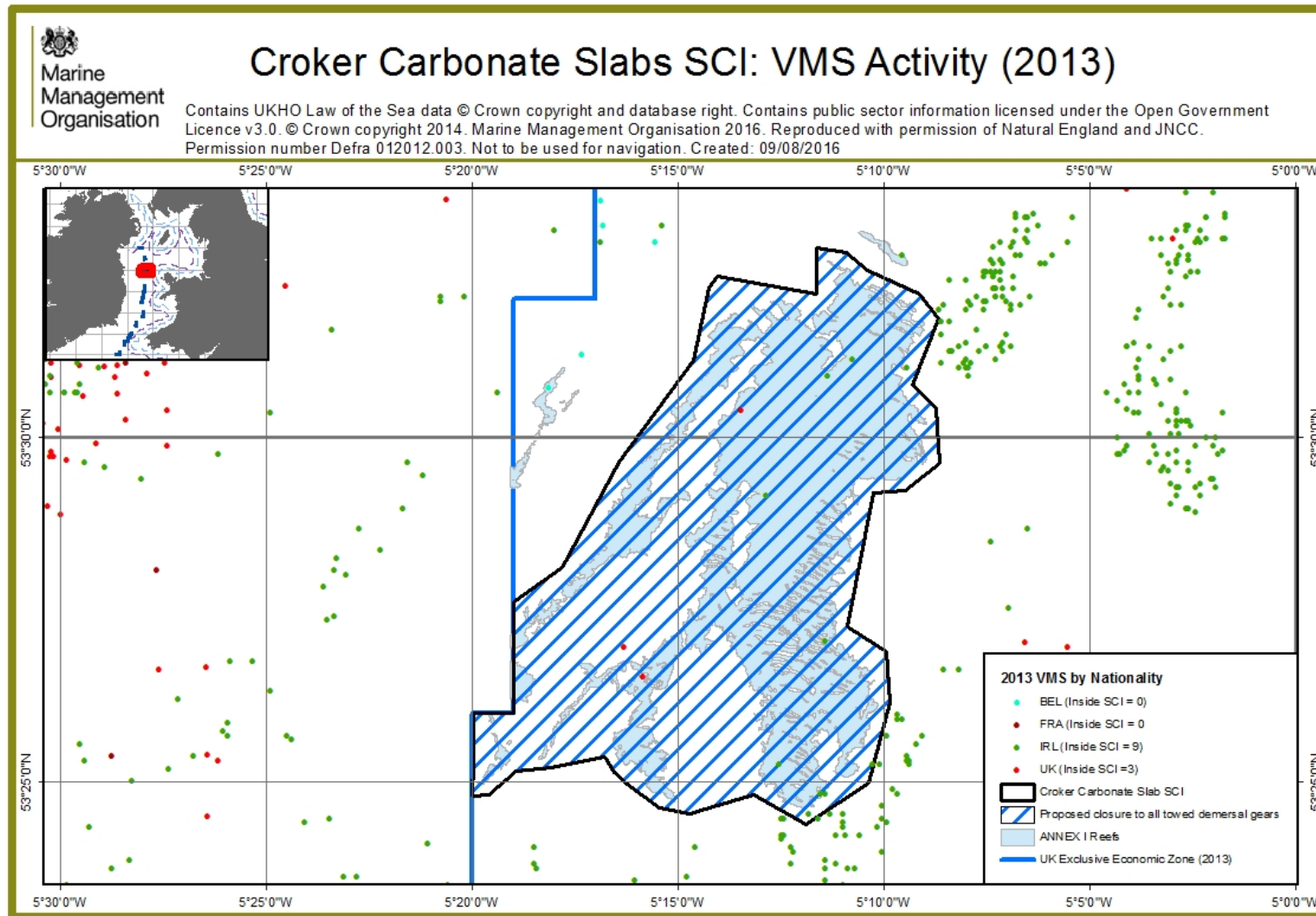


Figure 7: VMS reports from 2014 indicating all fishing activity in Croker Carbonate Slabs SCI by Nationality.

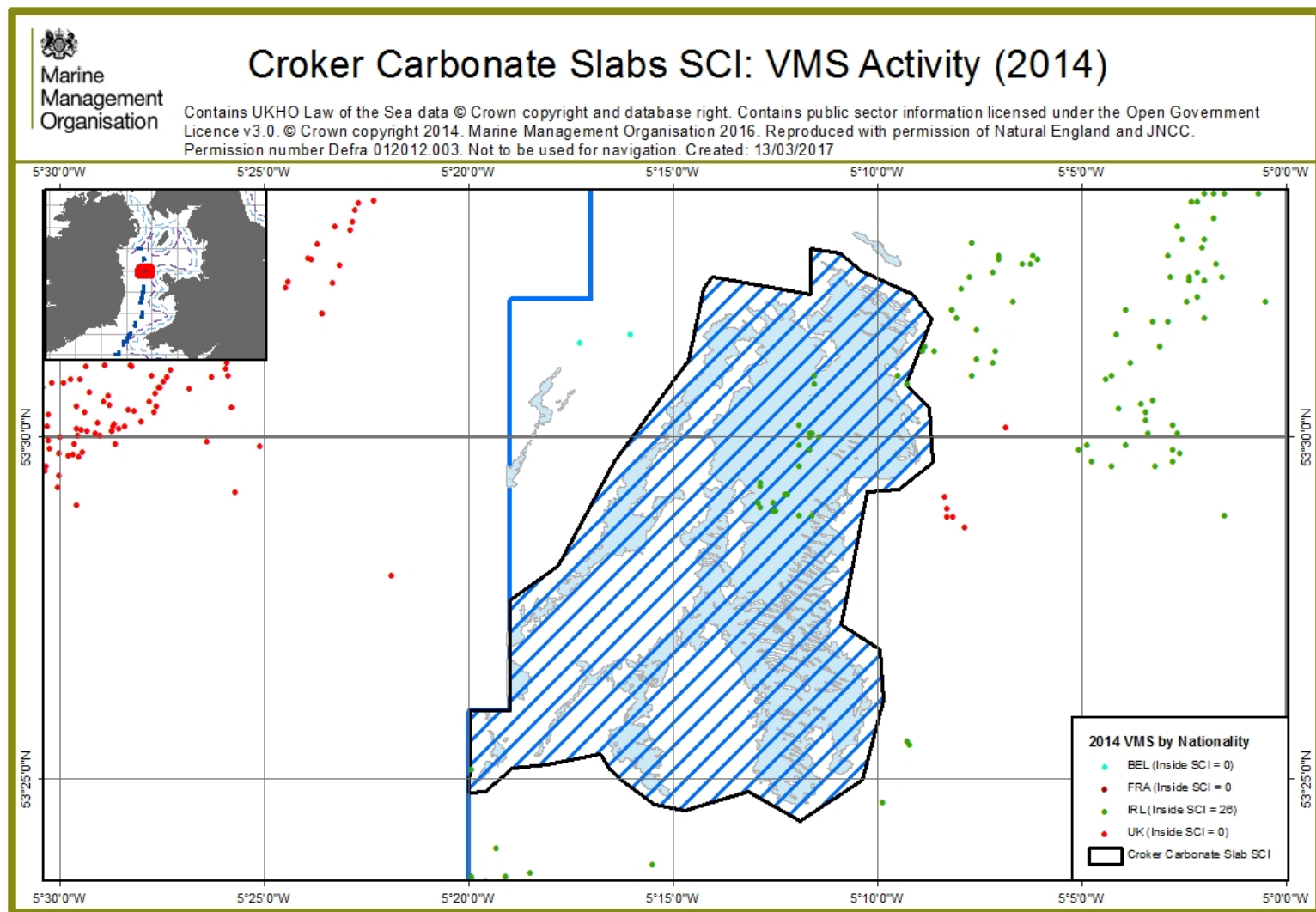
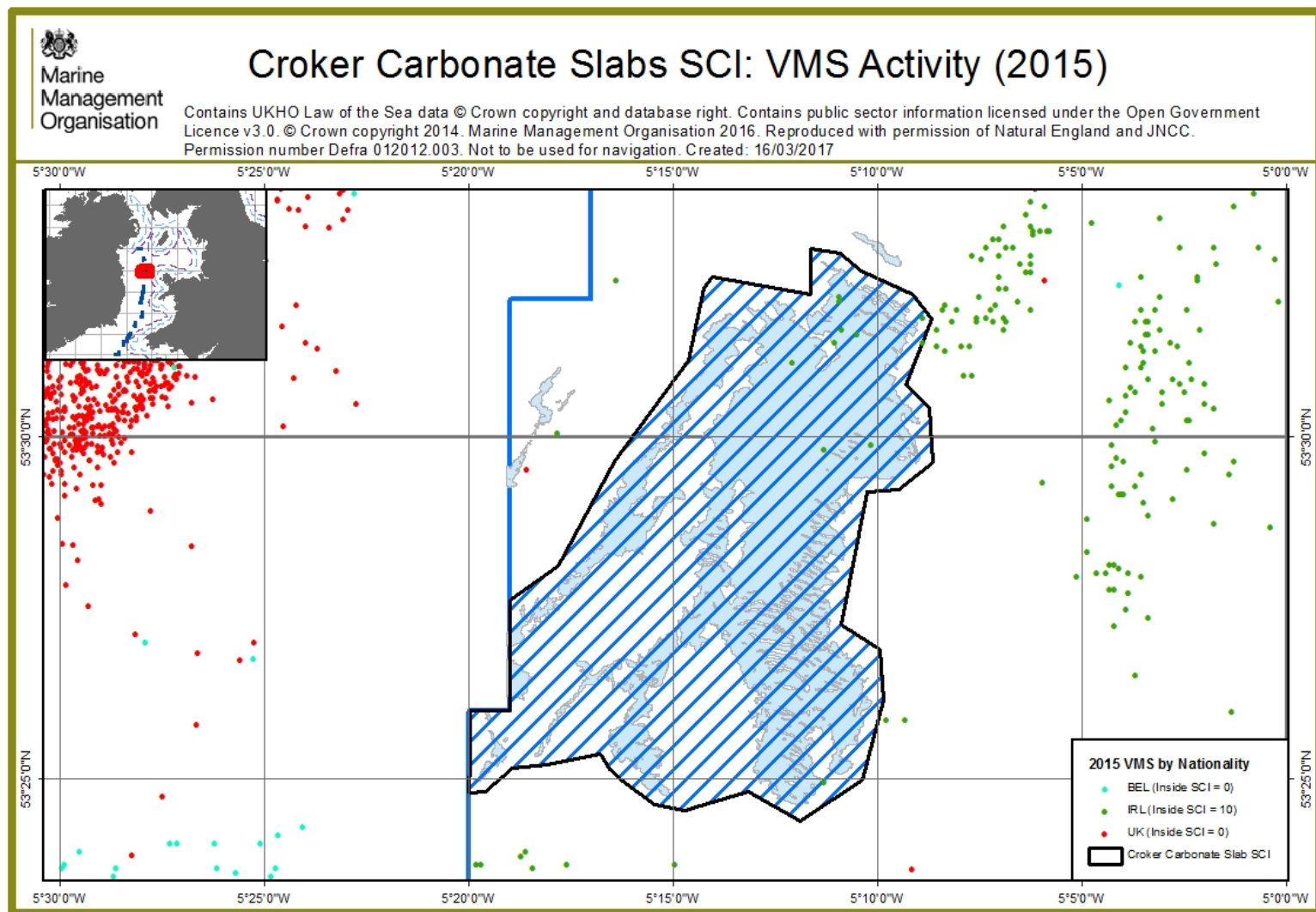


Figure 8: VMS reports from 2015 indicating all fishing activity in Croker Carbonate Slabs SCI by Nationality.



5.5 Fleet activity by gear group – Geographical distribution

In the charts depicted in this section, demersal gears have been classed as all gear types which are to be excluded from the closed area as stipulated in the gear table on page 6. The charts show all demersal and non-demersal gear types for each year and each Member State and where possible, the specific gear type recorded has been included.

DRAFT

Figure 9: VMS reports from 2010 indicating demersal fishing activity in Croker Carbonate Slabs SCI by gear type.

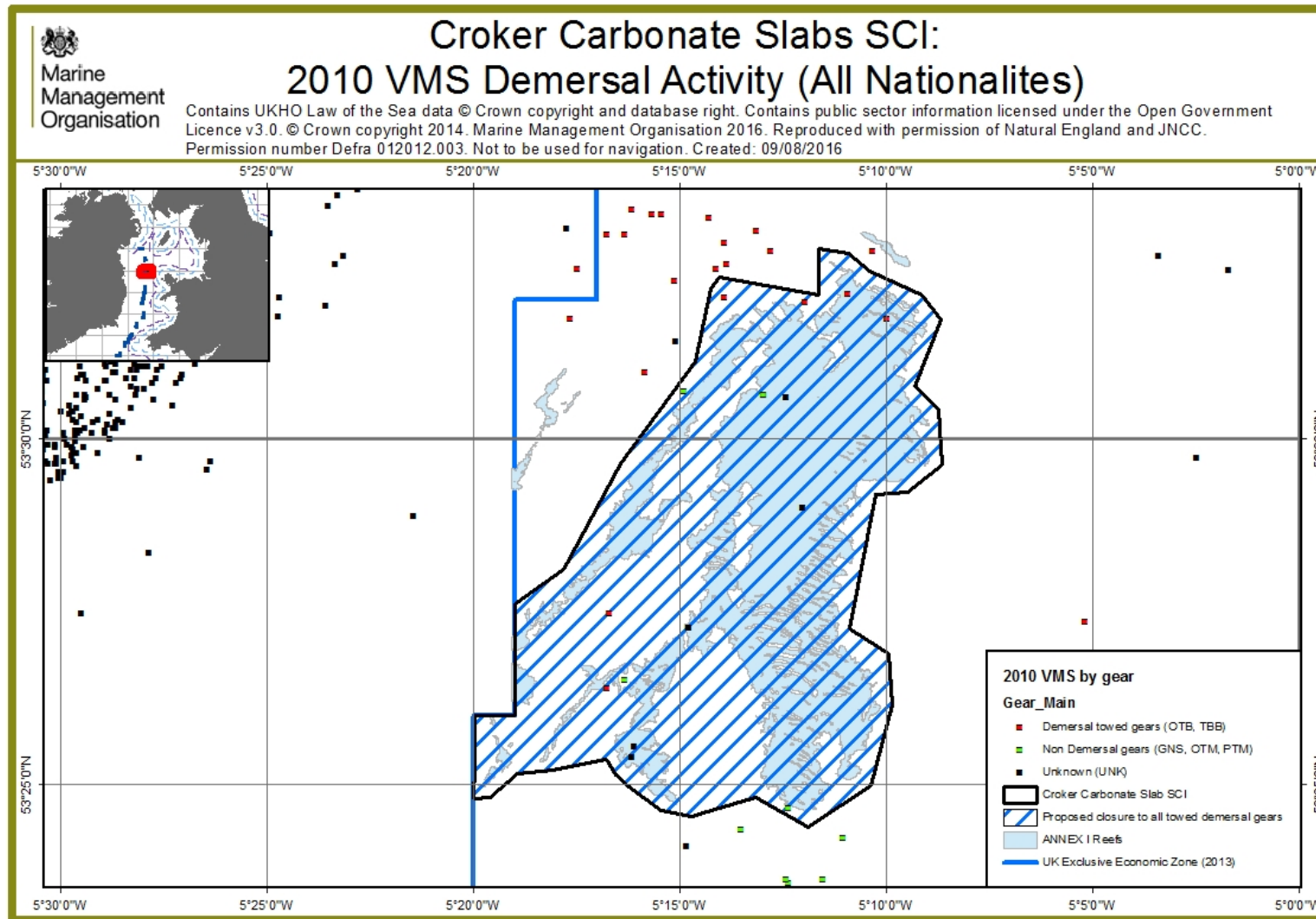


Figure 10: VMS reports from 2011 indicating demersal fishing activity in Croker Carbonate Slabs SCI by gear type.

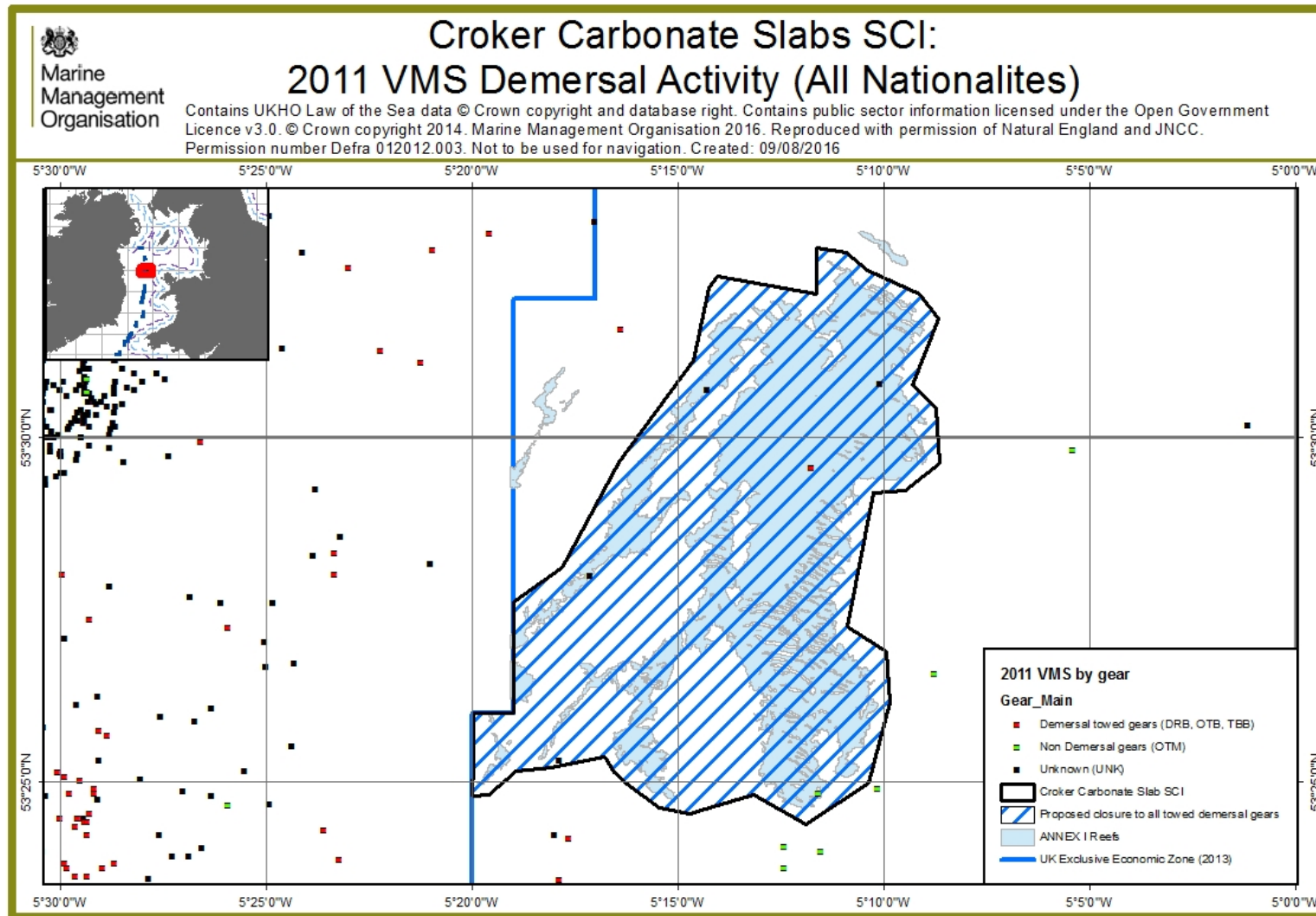


Figure 11: VMS reports from 2012 indicating demersal fishing activity in Croker Carbonate Slabs SCI by gear type.

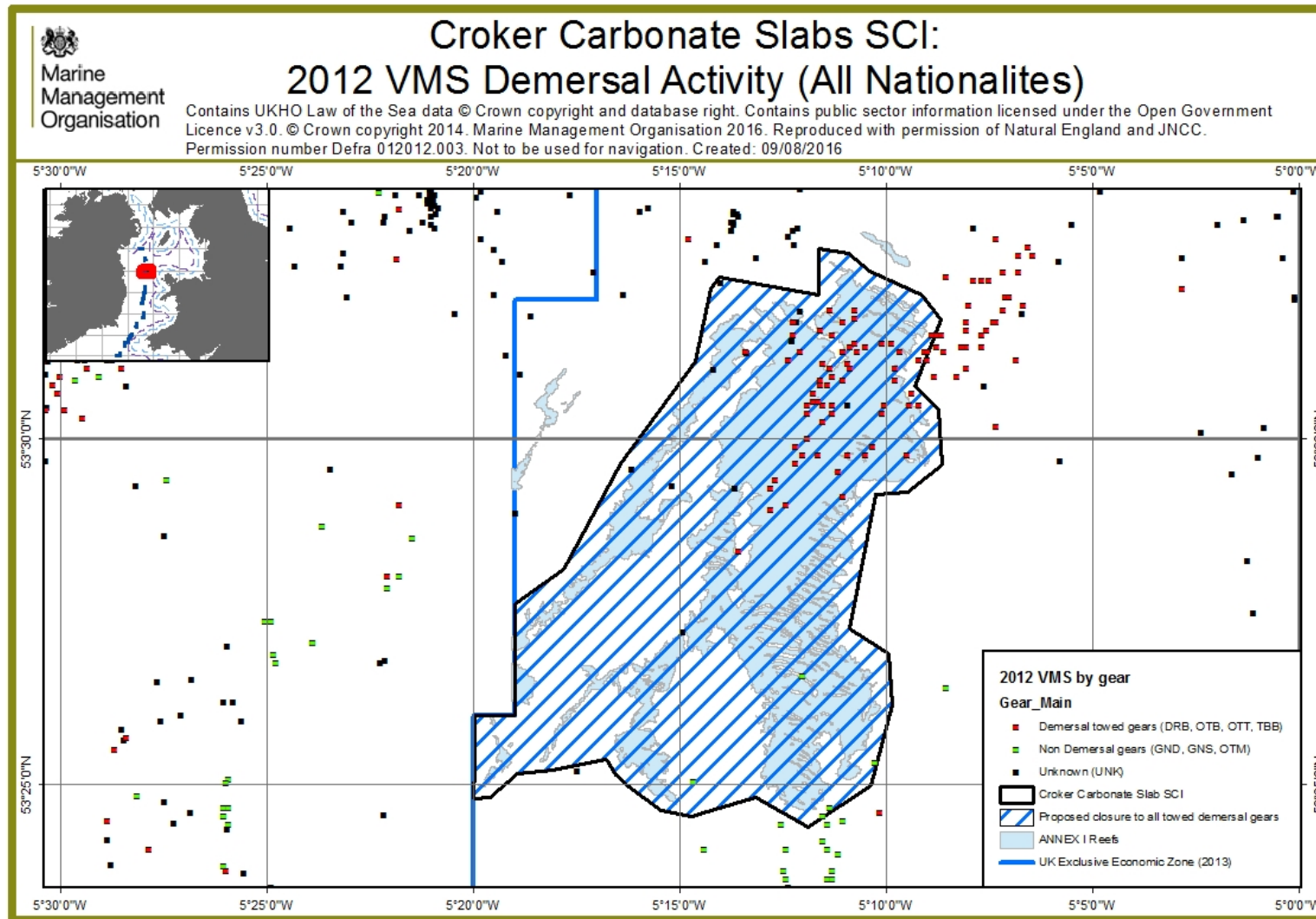


Figure 12: VMS reports from 2013 indicating demersal fishing activity in Croker Carbonate Slabs SCI by gear type.

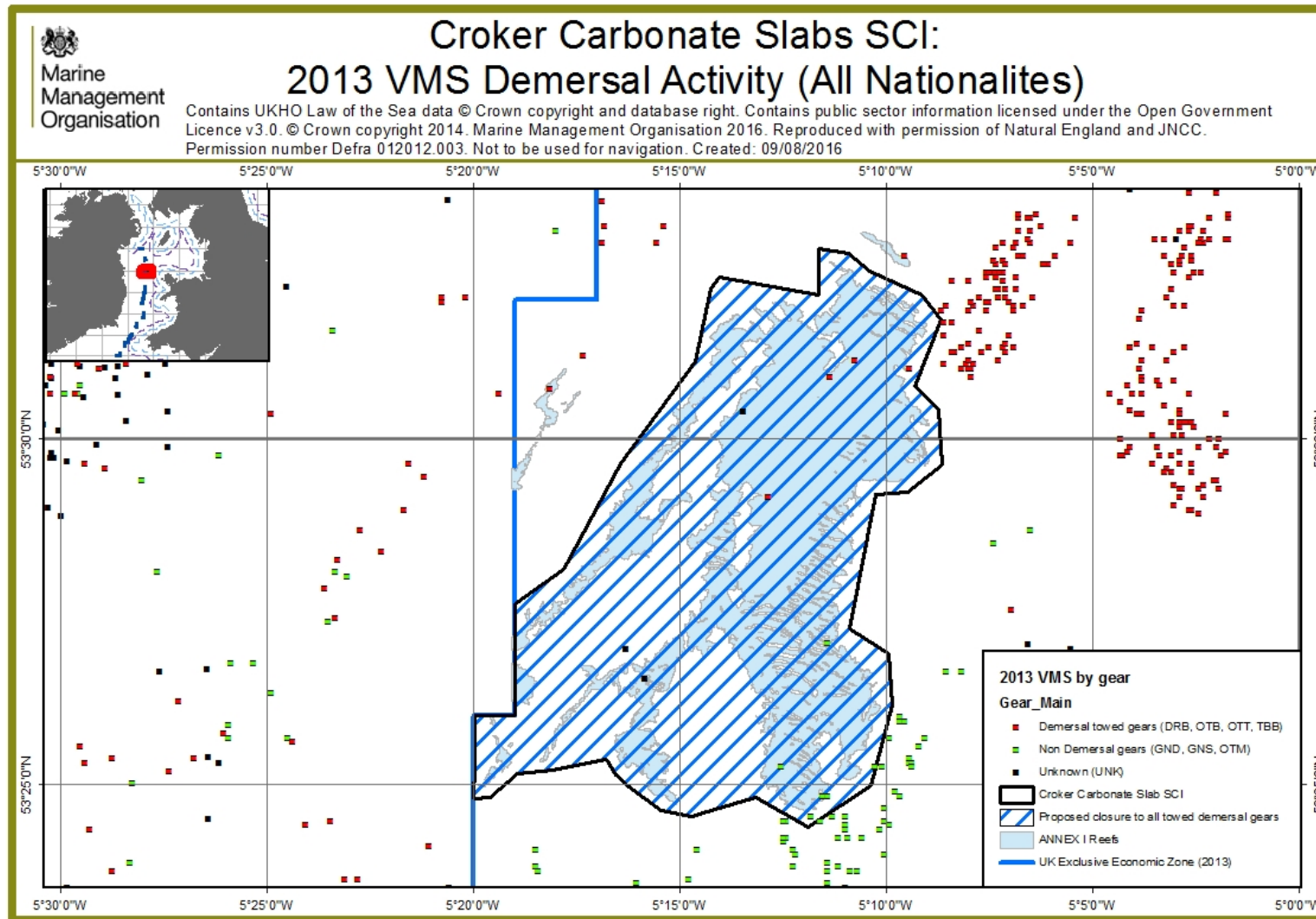


Figure 13: VMS reports from 2014 indicating demersal fishing activity in Croker Carbonate Slabs SCI by gear type.

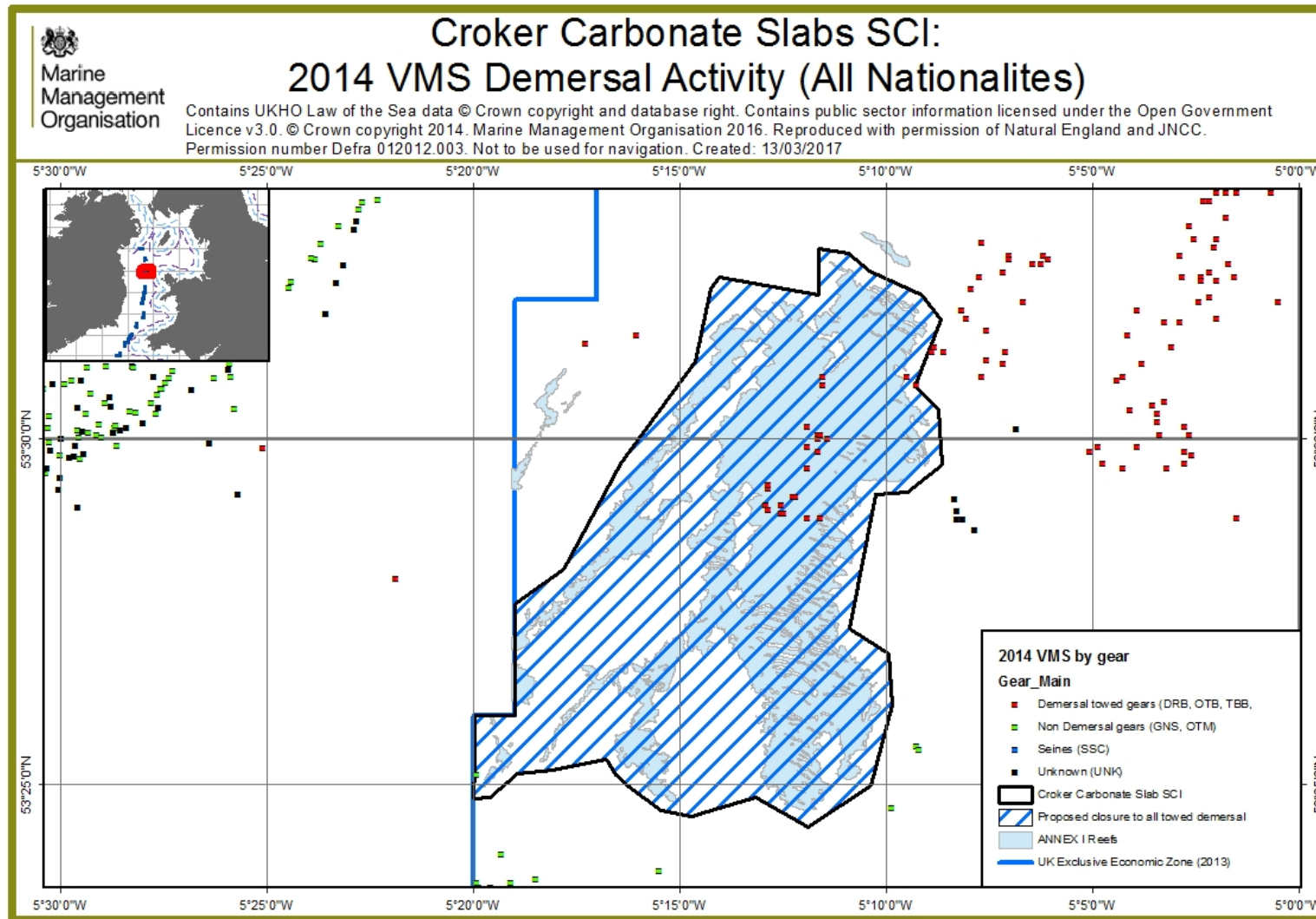
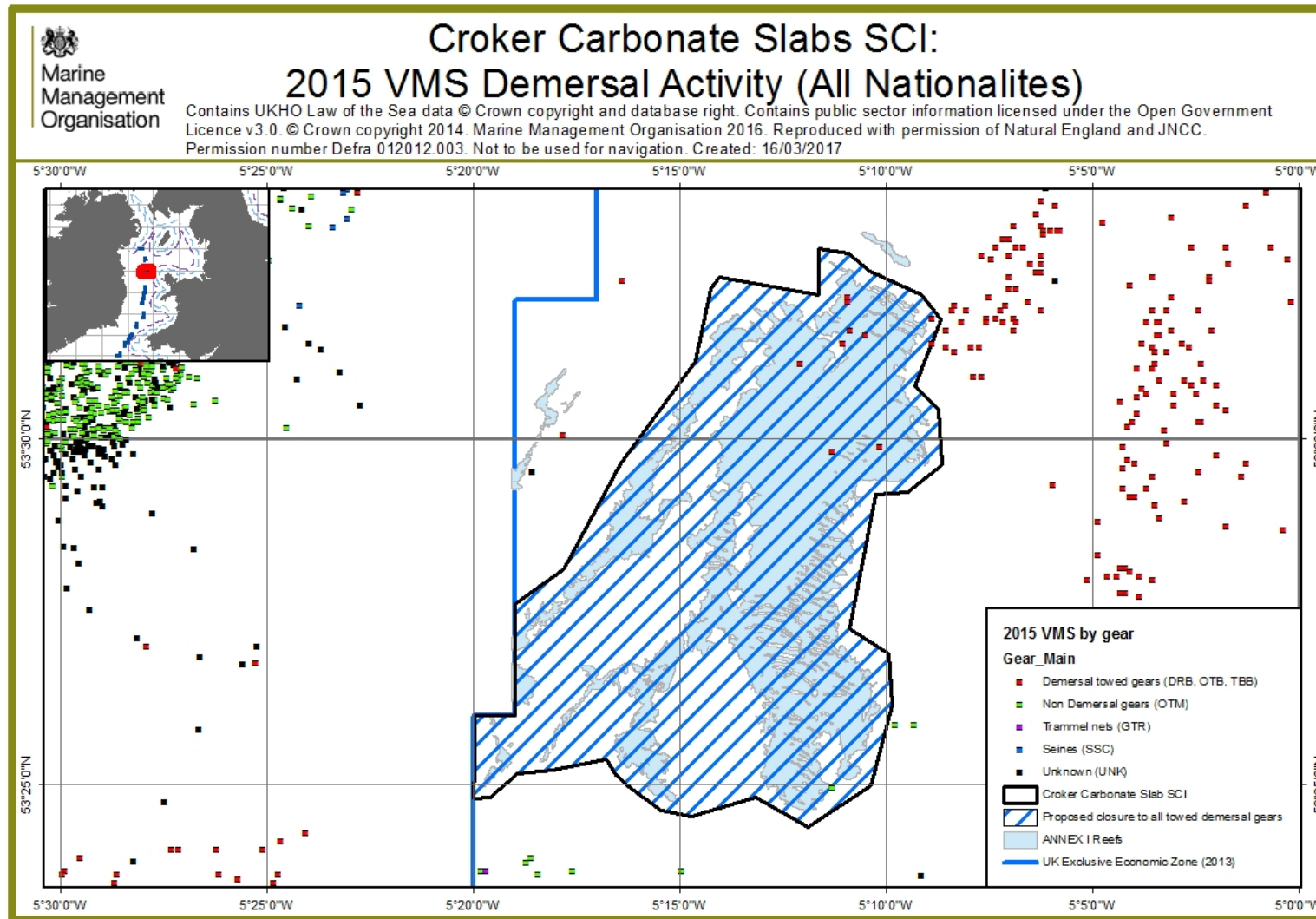


Figure 14: VMS reports from 2015 indicating demersal fishing activity in Croker Carbonate Slabs SCI by gear type.



5.6 By-catch

The trawl vessels in this area are usually targeting shellfish such as Nephrops and scallops with lower levels of netting. Cod, sole and plaice may be by-caught species from the Nephrops fishery.

Additional species may have been caught but not landed and there are no current systemic statistics available for these catch components. With the introduction of Common Fisheries Policy reform, which includes a landing obligation (namely a ban on the discard of certain species by certain vessels/with certain circumstances), it could become possible in the future to collate information on bycatch that could contribute to the overall catch and landings statistics in certain areas. A ban on demersal fish discards was introduced at the end of 2015, following a discard ban on pelagic fish introduced at the end of 2014, with a ban on discarding all other species by 2016.⁷

The main species landed in ICES rectangles 35E4 and 36E4 are Nephrops, Haddock, Crabs, Scallops, Herring.

⁷ http://ec.europa.eu/fisheries/reform/docs/discards_en.pdf

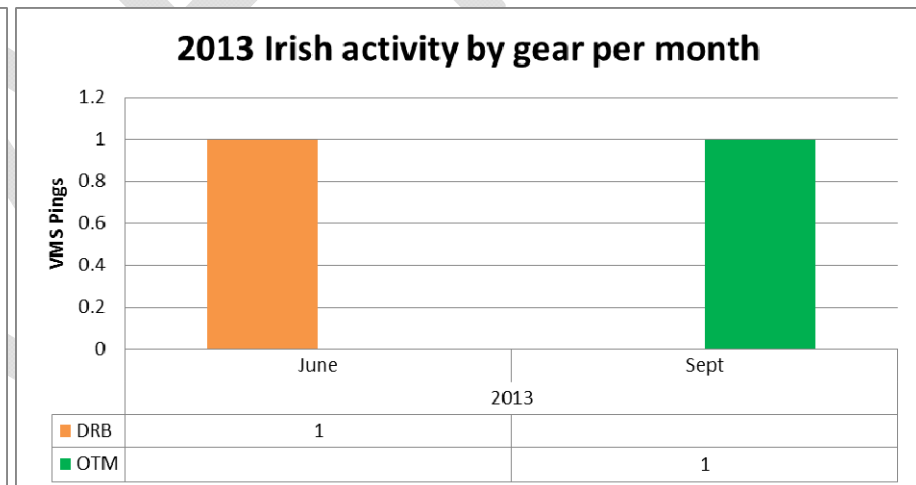
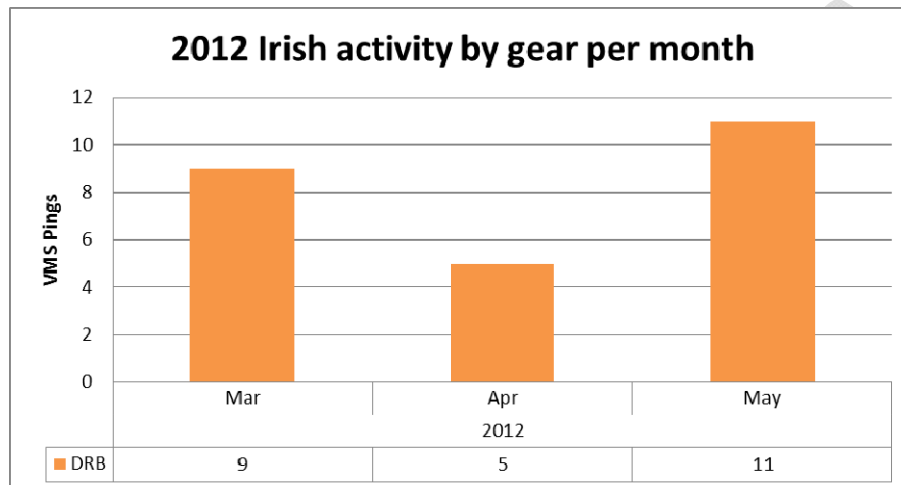
6. Seasonal trends in fisheries over four years 2010 to 2015 inclusive.

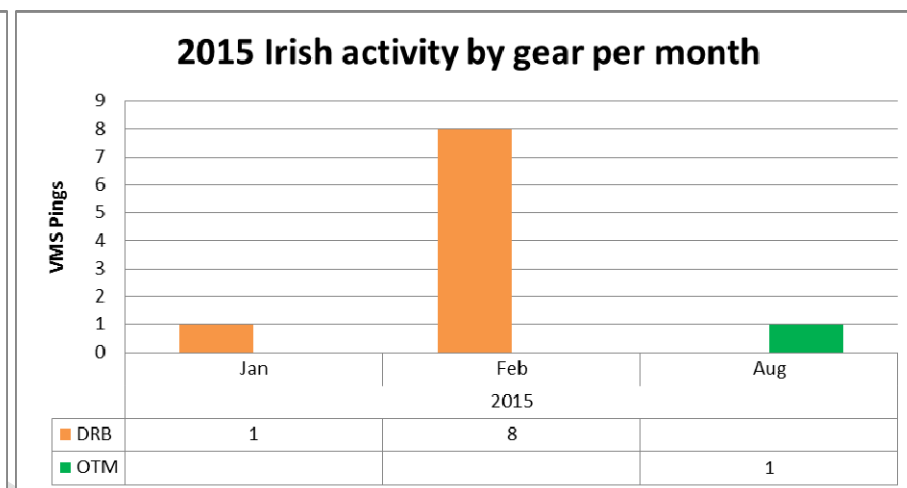
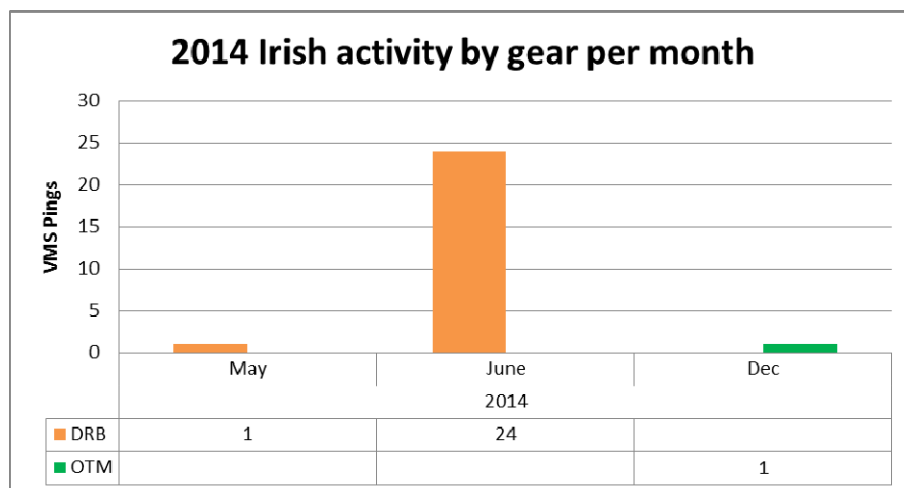
Activities from Belgium and Portugal are not displayed as they were at low levels. One Belgium beam trawler recorded four VMS pings in Jan 2010 and one Portuguese vessel was recorded with one VMS ping in Feb 2010.

Charts 6.1: Ireland seasonal fishing activity (all gears) in Croker Carbonate Slabs SCI

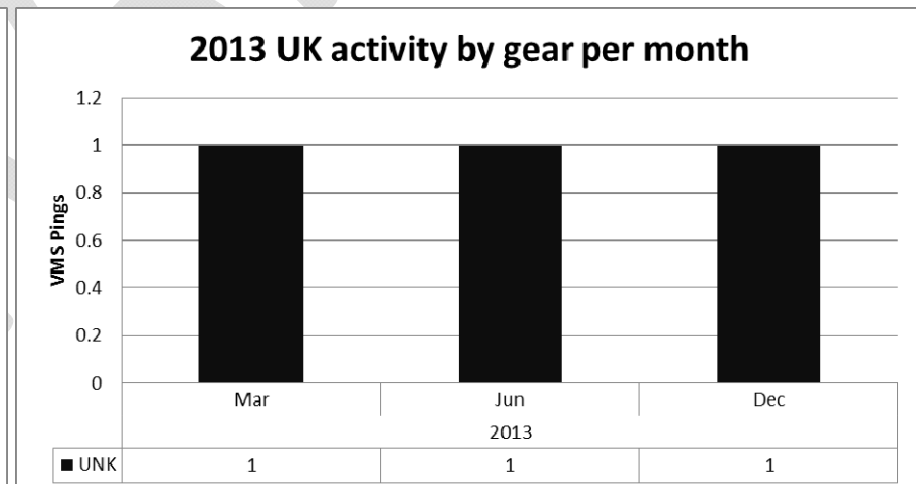
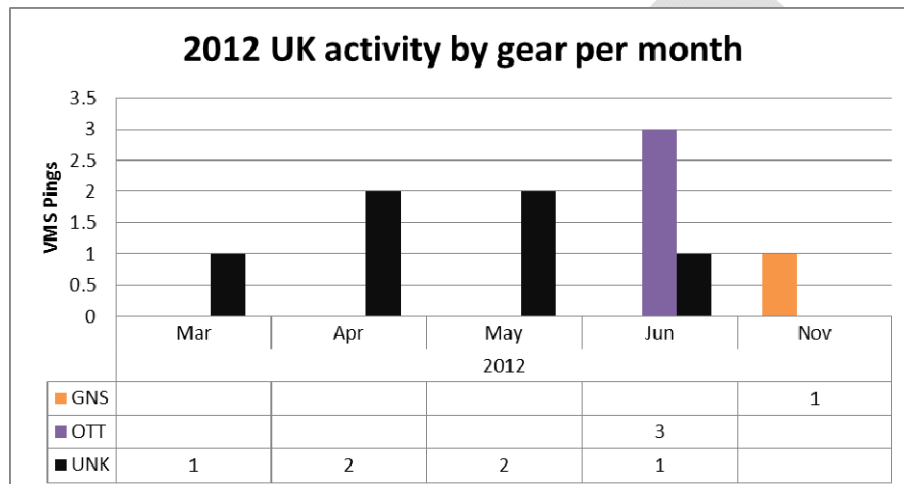
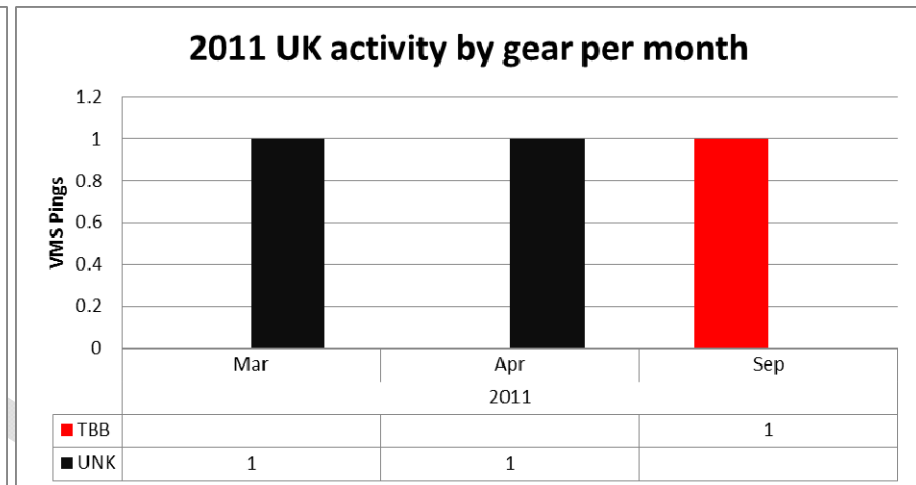
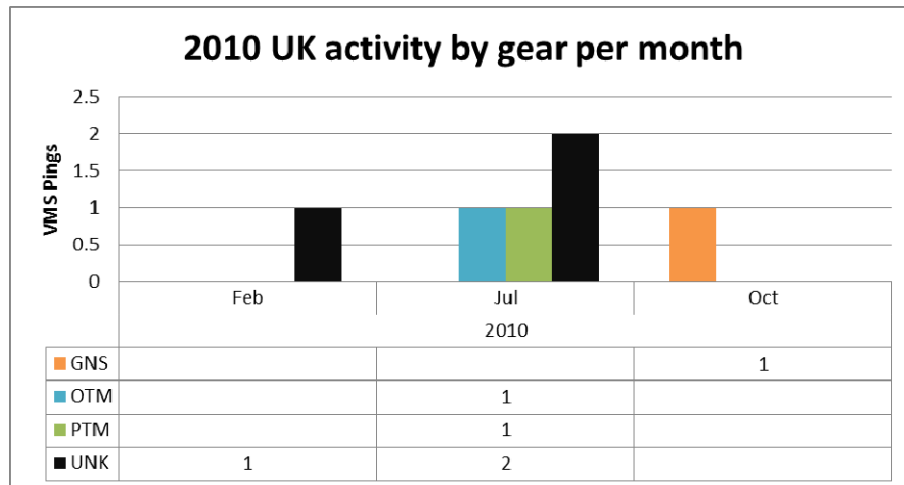
One VMS report from one Irish beam trawl vessel in April 2010.

No Irish activity recorded in 2011.





Charts 6.2: UK seasonal fishing activity (all gears) in Croker Carbonate Slabs SCI



7. Proposed fisheries management measures to maintain the habitat feature in favourable condition. Are they proportionate and enforceable? Other conservation measures that apply to the area

7.1 Options for fisheries management

A range of MPA fisheries management options are available to managers, differing in the degree of restriction they would play on fishing operations, and the risk they would pose to achieving the conservation objectives. These have been grouped into three broad categories of possible management: No additional management, additional management to reduce/limit pressures and additional management to remove pressures.

Although it is not generally possible to quantify the degree of risk to achieving the conservation objectives posed by each option, it is possible to identify where risks may exist, and where this could be reduced through the introduction of management measures.

Risks have been evaluated using existing data and information on protected features and our understanding of the relationships between the feature and relevant activities.

Broad management options categories

- 1) No additional management** – where fisheries managers choose to apply no additional site specific fisheries management within a site. For some gear/feature combinations, where the feature is not considered sensitive to the pressures associated with demersal fishing activity, this management option may pose little or no risk to achievement of the conservation objectives. For features which are considered sensitive to the pressures associated with certain demersal fishing activities, the risk posed to achieving the conservation objectives will increase as the sensitivity of the feature increases. As outlined in the features fisheries impacts section, this will vary between features and gear types.
- 2) Additional management to reduce/limit pressures** – where fisheries managers may wish to consider a range of measures that could be used to reduce the risk posed by fishing activity to achieving the conservation objectives. These could include:
 - **Area restrictions:** This would involve closing some or all of a specific feature's area. Restrictions could be permanent in some cases or temporary/adaptive in others. The risk of the conservation objectives not being met will increase as the size of areas restricting pressure decrease, or if the pressure reduction across the site relative to natural change is low.

- Gear restrictions: This could involve restricting the use of gears to which a feature is more sensitive.

In situations where there is high uncertainty regarding the impacts of fishing on features, management measures to reduce/limit pressures could be “adaptive”, i.e. changes in the feature’s condition following the introduction of management measures will be monitored and future management may be adapted accordingly.

3) Additional management to remove pressures – where managers choose to exclude fishing activities known to adversely affect a feature. Such exclusions may apply to the parts of the site where the feature is present, or to an entire site. This would reduce the risk of not achieving the conservation objectives to the lowest possible level.

7.2 Proposed management option

Additional management to remove the pressures resulting from demersal trawling, dredging and seine netting within the site is the proposed management option to protect Annex I Habitat 1180 Submarine structures made by leaking gases (option 3 described in Section 7.1). This option will prohibit the use of mobile demersal gears over all areas where the feature is present within the site. As the feature is found throughout the site, the proposed management option is a full site prohibition of mobile demersal gears. This option reduces the risk of damage to the feature to the lowest possible level and represents the lowest possible risk to achieving favourable condition.

The proposed management boundary under this option is illustrated in Figure 1 (page 12) along with its coordinates in Tables 2 (page 11) of the Supporting Documentation. As appropriate, the proposed management boundary includes a buffer to help reduce the risk of accidental damage occurring to the features and ensure they are enforceable. Further explanation of the application of both buffers and margins to ensure adequate protection of features within the current proposals is provided in Annex D.

No additional management is proposed for demersal static gears on Submarine structures made by leaking gases as the risk to the achievement of the feature’s conservation objectives from the gear type is considered to be sufficiently low. However, if monitoring indicates impacts from these gears, it may be necessary to introduce some degree of management in the future.

A control and enforcement regulation is proposed to accompany management measures. For further information on this, refer to Section 8 and Annex C.

7.3 Other fisheries measures which apply to the site

Croker Carbonate Slabs SCI lies within an area where Commission Regulation (EC) 494/2002 of 19 March 2002 establishing additional technical measures for the recovery of the stock of hake in ICES sub-areas III, IV, V, VI and VII and ICES divisions VIII a, b d, e applies.

Regulation 494/2002 contains the following measures:

- Catch composition rules requiring the maximum allowed proportion of hake in a total catch for gear types.
- Gear specification requirements, including twine thickness and mesh sizes for various gear types.
- Within a specified area⁸ (which encompass Croker Carbonate Slabs SCI), it is prohibited to use any fixed gear of mesh size less than 120mm.
- Within a specified area (which encompass Croker Carbonate Slabs SCI), it is prohibited to use any towed net of mesh range 55 to 99mm, except for east of 07° 30'W where beam trawls of mesh range 55 to 99mm may be deployed from April to October.

8. Control measures envisaged by the Member State, possible ecological and control buffer zones to ensure site protection and/or effective control and monitoring measures

8.1 Measures envisaged by Member states for Control, Enforcement and Compliance

The proposed control, enforcement and compliance regime for Croker Carbonate Slabs SCI consists of a combination of a reporting zone surrounding the site, remote monitoring of vessel position, and at-sea surveillance. Such a regime would be in line with future control and enforcement challenges of the Common Fisheries Policy.

8.1.1 Surface and aerial surveillance

Surface surveillance of Croker Carbonate Slabs SCI will be continued under existing surveillance plans for the Irish Sea. These plans will coordinate the at-sea surveillance capacity of the UK which

⁸ As defined by article 5, paragraph 1(a) of Commission Regulation (EC) 494/2002 of 19 March 2002 establishing additional technical measures for the recovery of the stock of hake in ICES sub-areas III, IV, V, VI and VII and ICES divisions VIII a, b d and e

may include Navy fisheries protection vessels, or other capable vessels and aerial assets. Changes to surveillance will be in line with the MMO's risk based compliance and enforcement strategy.

8.1.2 Remote Vessel Monitoring

Increased Position Reporting

Vessels entering Croker Carbonate Slabs SCI and the reporting zone will be subject to increased vessel position monitoring (every 10 minutes). EU fishing vessels over 12m in length are only required to report, through satellite, every two hours. Reports can be viewed in real time but this reporting frequency would allow vessels to access the site without being viewed in real time but this reporting frequency would allow vessels to access the site without being identified between the two hourly reporting times. Increased reporting within the prohibited zone will reduce the risk.

Vessels will be allowed to transit the prohibited area. Increased reporting will allow the MMO FMC to identify fishing or transiting patterns and identify non-compliance.

Reporting Zone

Vessels fishing within 1nm of the prohibited zone will be subject to 10min reporting (Annex C). The reporting zone does not extend into Irish waters and ceases at the median line of UK and Irish waters.

Fishing patterns are more likely to result in vessels 'clipping' the prohibited zone or cutting across a corner rather than crossing the zone. A reporting zone which surrounds the prohibited area adds additional feature protection and helps ensure potential non-compliant vessels can be identified

Vessels will still be allowed to fish in the increased reporting zone

The increased 1nm reporting zone proposed to be established around this site will cease at the meridian line between UK and Irish waters.

8.2 Vessel position monitoring system

Increasing the frequency of vessel position reporting is integral to the preferred control, enforcement and compliance plan.

Increased reporting can be set up using geofences⁹ recognised by the vessel's VMS devices, which would trigger higher frequency reporting if a vessel enters the reporting zone.

In order to improve monitoring and compliance, fishing vessels within Croker Carbonate Slabs SCI and the reporting zone should be required to carry a system capable of:

- Recording high frequency position reports (up to one report per ten minute interval) when within the prohibited area or reporting zone for the site.
- Transmitting position reports via GPRS/GSM 10(when available)
- When GPRS/GSM signal is not available: storing positions and forwarding stored reports when the signal is available
- Recreating prohibited area and reporting zone coordinates and associated reporting frequency rules in the form of geofences
- Transmitting an email and/or text message alert via GPRS/GSM (when signal available) to the flag state and MMO FMC when a vessel enters a reporting or prohibited zone for the site.
- High frequency reporting would end when a vessel leaves the increased reporting area for the site.

Increased reporting via GPRS/GSM is recommended to reduce the reporting cost (which will be borne by the fishing vessels) as charges are made per report. Satellite reporting, currently used, is costly at high frequency.

Mobile network signal is not currently available for the majority of offshore sites; enforcement action using this system will therefore be retrospective.

In the UK, vessels which are fitted with a VMS+ device can meet all the above system requirements. The VMS+ device is also capable of transmitting increased reporting either through satellite or GPRS/GSM. There is also development work on another device known as I-VMS (inshore vessel

⁹ A geofence is a spatial virtual barrier. Programs that incorporate geofencing allow an administrator to set up triggers such as increased reporting so when a device enters (or exits) the boundaries defined by the administrator it performs the trigger and if required a text message or email alert.

¹⁰ General Packet Radio System (GPRS) and Global System for Mobile communications (GSM): These are types of mobile phone technology which meet European telecommunications standards.

monitoring system), which although designed primarily for the English inshore fleet (those vessels under 12m in length), can also meet the above requirements.

Estimation of the increased reporting costings for offshore Marine Protected Areas in English waters.

This information relates to the UK estimates of the increased reporting proposals.

The cost of a VMS report through GPRS¹¹ is approximately **\$0.06**¹² (As of April 2015). Please find below a table of the total cost of increased after a period of X minutes.

GPRS Costs	Total duration cost after X minutes					
Reporting rate (X minutes)	60	120	180	240	300	360
1 minute	\$3.60	\$7.20	\$10.80	\$14.40	\$18.00	\$21.60
10 minutes	\$0.36	\$0.72	\$1.08	\$1.44	\$1.80	\$2.16
30 minutes	\$0.12	\$0.24	\$0.36	\$0.48	\$0.60	\$0.72
60 minutes	\$0.06	\$0.12	\$0.18	\$0.24	\$0.30	\$0.36

To note: The UK proposes a reporting rate of ten minutes.

Increased reporting caveats:

- These costs are based on a 'pay as you go' (PAYG) service and correct as April 2015.
- Costs will vary depending individual member states VMS service providers.
- GPRS Network roaming may affect overall costs

It should be noted that fishing vessels affected by the proposed closures may potentially modify or change their activities, along with fishing patterns as a result of the implementation of an increased reporting zone.

¹¹ General Packet Radio System (GPRS) and Global System for Mobile communications (GSM): These are types of mobile phone technology which meet European telecommunications standards.

¹² GPRS values are presented in US dollars

8.3

8.4 Key provisions to include in the EC regulation to manage Croker Carbonate Slabs SCI

Key provisions which should be included in an EC regulation to facilitate control enforcement and compliance include:

- A prohibition of demersal trawls, dredges and seine nets being deployed within the SCI's management boundaries.
- Establishment of a 1nm (1.852km) increased reporting zone around Croker Carbonate Slabs SCI. All fishing vessels within this area shall be required to record or report vessel positions at a rate of 10minute intervals. This area shall be defined by the reporting zone and coordinates displayed in Annex C.
- A requirement for all fishing vessels entering the increased reporting zone to have a system for recording and reporting vessel position which meets prescribed specifications (see Section 8.2 for minimal requirements) and is installed and operative. Any fishing vessel entering Croker Carbonate Slabs SCI or the reporting zone without such a system will be committing an offence.
- A requirement for all fishing vessels transiting the SCI carrying prohibited gears to have all prohibited gears on board lashed and stowed.
- A requirement for all fishing vessels transiting the SCI carrying prohibited gears to ensure that the speed during transit is not less than six knots except in the case of force majeure or adverse conditions. In such cases the master shall immediately inform the FMC of the flag member state which shall then inform the UK FMC.

The proposal on which gears types to prohibit is formulated in terms of Gear Codes in Annex XI in EU Regulation 404/2011. In general prohibited gears types are demersal trawls, dredges and seines. Formulation of the regulation requires clear and precise definitions which distinguish allowed gear types from prohibited gear types. This includes, for trawls which can be operated both with and without bottom contact, distinguishing between these different gear riggings (if such a distinction is not feasible these gear types should be prohibited).

Management measures for the site will be periodically reviewed in line with advancements in technology, specifically the development of improved remote vessel monitoring and gear in/out technologies.

9. Measures to monitor and assess the maintenance and/or recovery of the features within the site

Cefas/JNCC are currently leading a research and development programme to develop an integrated system of monitoring for marine biodiversity. The ambition is to cost-effectively encompass Defra's policy and statutory obligations, such as the:

- Marine and Coastal Access Act
- OSPAR Convention;
- EC Habitats Directive; and
- EC Marine Strategy Framework Directive (MSFD)

For benthic marine habitats, the task of developing monitoring options is extremely complex. The UK has 48 offshore Marine Protected Areas designated for benthic habitats covering an area of over 126,000 km². This presents a challenge due to the diversity of benthic habitats occurring in UK waters and the number, size and geographic spread of offshore MPAs, the paucity of data on the range, extent and condition of many habitat types (especially in the offshore environment) and the underdeveloped nature of suitable state and pressure indicators for monitoring.

The draft offshore habitats monitoring options evaluate the risk of damage to habitats in UK offshore MPAs, assess the type of monitoring required for each MPA and estimate the indicators, equipment and number of samples required to assess change in the condition of the habitats within MPAs. Due to the number of UK offshore MPAs, the area of seabed encompassed within the offshore MPAs, the diversity of offshore habitats and the cost of offshore monitoring surveys, it may not be possible to monitor every MPA within a single reporting cycle. In certain cases, monitoring studies to assess the effectiveness of management measures in one MPA may be used as a proxy for assessing the effectiveness of management measures in MPAs with similar features and management measures in the same regional sea.

10. Coordination with neighbouring Member States as appropriate

Fisheries management measures were developed in close coordination with other Member States with a direct management interest in the sites.

Draft management proposals were subject to a six week period of consultation with Member States with a direct management interest in the sites and the Northwest Waters Advisory Council.

Finalised management proposals were then presented to other Member States with a direct management interest in the sites for agreement that sufficient information had been provided in order to commence the formal agreement of the proposals as Joint Recommendations. [Following this, ad hoc meetings of the Northwest Waters Article 11 sub-group were held to start formal agreement proceedings for the Joint Recommendations. Any outstanding issues were then addressed before agreement was reached on the Joint Recommendations by members of the Northwest Waters High-Level Group and they were submitted to the European Commission for adoption.]

11. Evaluation of possible displacement of fishing effort and impact on new areas

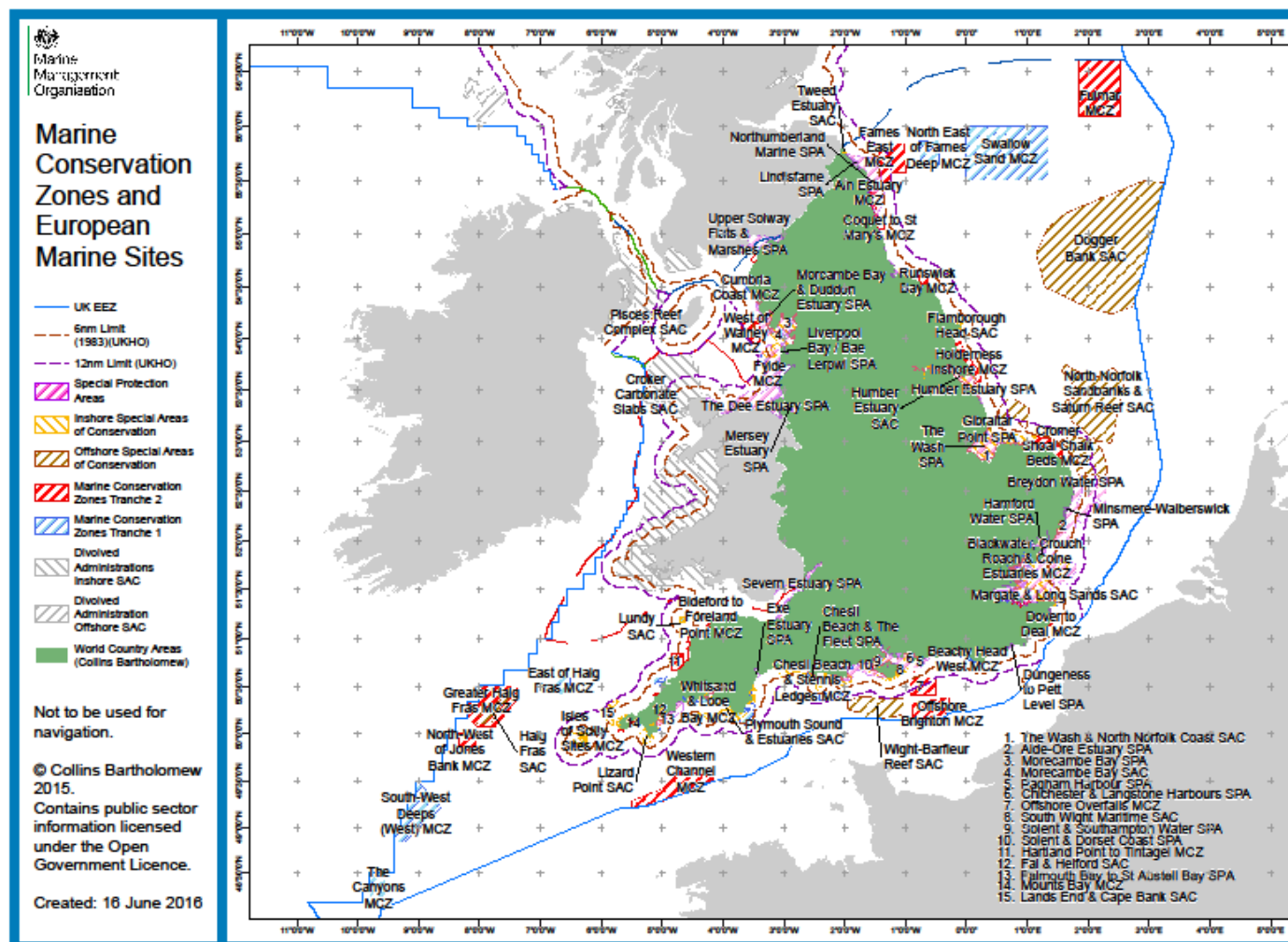
As the SCI will be closed to demersal trawls and dredges, some displacement is likely to occur both within and outside the site.

Displacement is difficult to quantify, and it is impossible to predict where exactly activities will be displaced to. As a result of stakeholder input in the management process, some of the areas currently fished within the site will remain open to fishing thus reducing the potential for displacement.

Displacement is dependent on the intensity and distribution of fishing activities within the site before the closure and on external factors (such as fish distribution, TAC/quota, fuel prices, other spatial claims).

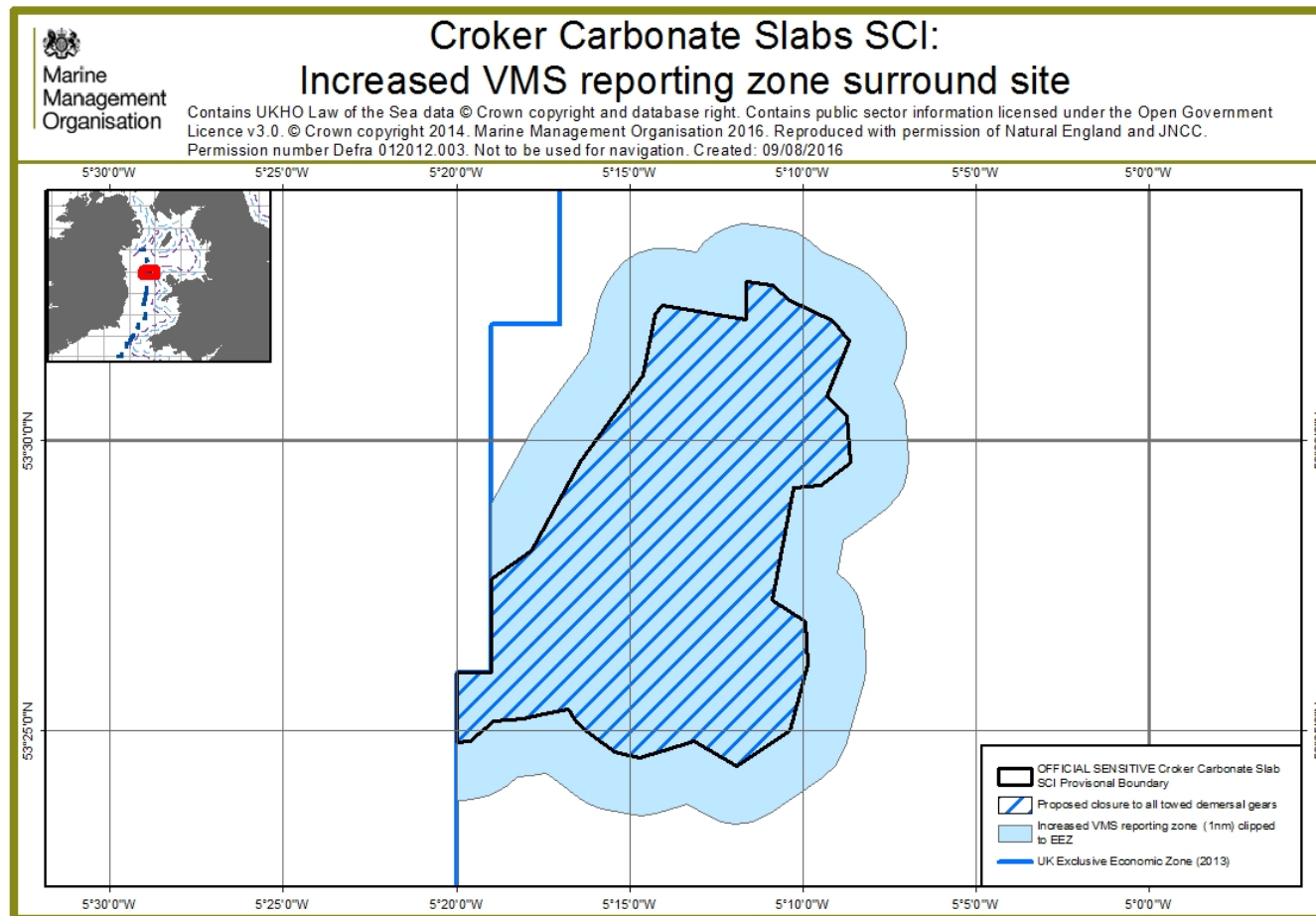
As part of the MMOs risk-based enforcement, regular monitoring of fishing activity is collated on a Monitoring Control and Surveillance System (MCSS). MCSS does not analyse fishing trends and activity, but stores information, which can be accessed at any time. The MMOs monitoring of activity in each site could assist in any future considerations relating to displacement and could be used to indicate any changes in fishing trends and activity.

Annex B – Map of English MPA network



Annex C – Map and coordinates of Croker Carbonate Slabs SCI increased reporting zone

The increased 1nm reporting zone proposed to be established around this site will cease at the meridian line between UK and Irish waters.



Increased reporting zone coordinates for Croker Carbonate Slabs SCI:

	Degrees Minutes			Degrees Minutes Seconds	
Point	Lat (North)	Lon (West)		Lat (North)	Lon (West)
1	53°28.92600'	-005°18.99960'		53°28'55.5600"	-005°18'59.9760"
2	53°30.11880'	-005°17.91420'		53°30'07.1280"	-005°17'54.8520"
3	53°30.23220'	-005°17.79360'		53°30'13.9320"	-005°17'47.6160"
4	53°31.53360'	-005°16.19220'		53°31'32.0160"	-005°16'11.5320"
5	53°32.35860'	-005°15.91560'		53°32'21.5160"	-005°15'54.9360"
6	53°32.54700'	-005°15.81840'		53°32'32.8200"	-005°15'49.1040"
7	53°32.75280'	-005°15.62220'		53°32'45.1680"	-005°15'37.3320"
8	53°32.92140'	-005°15.41340'		53°32'55.2840"	-005°15'24.8040"
9	53°33.08580'	-005°15.15600'		53°33'05.1480"	-005°15'09.3600"
10	53°33.23040'	-005°14.78100'		53°33'13.8240"	-005°14'46.8600"
11	53°33.31500'	-005°14.32020'		53°33'18.9000"	-005°14'19.2120"
12	53°33.31260'	-005°13.77000'		53°33'18.7560"	-005°13'46.2000"
13	53°33.24240'	-005°13.08840'		53°33'14.5440"	-005°13'05.3040"
14	53°33.43920'	-005°12.83520'		53°33'26.3520"	-005°12'50.1120"
15	53°33.60300'	-005°12.47700'		53°33'36.1800"	-005°12'28.6200"
16	53°33.70440'	-005°12.05820'		53°33'42.2640"	-005°12'03.4920"
17	53°33.73380'	-005°11.74800'		53°33'44.0280"	-005°11'44.8800"
18	53°33.72540'	-005°11.39940'		53°33'43.5240"	-005°11'23.9640"
19	53°33.66360'	-005°10.66740'		53°33'39.8160"	-005°10'40.0440"
20	53°33.58800'	-005°10.22160'		53°33'35.2800"	-005°10'13.2960"
21	53°33.42900'	-005°09.79980'		53°33'25.7400"	-005°09'47.9880"
22	53°33.25620'	-005°09.46440'		53°33'15.3720"	-005°09'27.8640"
23	53°32.97600'	-005°08.43420'		53°32'58.5600"	-005°08'26.0520"
24	53°32.86260'	-005°08.11440'		53°32'51.7560"	-005°08'06.8640"
25	53°32.67840'	-005°07.80240'		53°32'40.7040"	-005°07'48.1440"
26	53°32.32560'	-005°07.34400'		53°32'19.5360"	-005°07'20.6400"
27	53°32.11440'	-005°07.13400'		53°32'06.8640"	-005°07'08.0400"
28	53°31.86000'	-005°07.01160'		53°31'51.6000"	-005°07'00.6960"
29	53°31.59540'	-005°07.00740'		53°31'35.7240"	-005°07'00.4440"
30	53°31.35840'	-005°07.10820'		53°31'21.5040"	-005°07'06.4920"
31	53°30.99120'	-005°07.34880'		53°30'59.4720"	-005°07'20.9280"
32	53°30.75300'	-005°07.15080'		53°30'45.1800"	-005°07'09.0480"
33	53°30.51300'	-005°07.06860'		53°30'30.7800"	-005°07'04.1160"
34	53°29.69880'	-005°06.96360'		53°29'41.9280"	-005°06'57.8160"
35	53°29.45400'	-005°06.98340'		53°29'27.2400"	-005°06'59.0040"
36	53°29.22000'	-005°07.10280'		53°29'13.2000"	-005°07'06.1680"
37	53°29.04300'	-005°07.27320'		53°29'02.5800"	-005°07'16.3920"
38	53°28.85040'	-005°07.57980'		53°28'51.0240"	-005°07'34.7880"
39	53°28.45140'	-005°08.40900'		53°28'27.0840"	-005°08'24.5400"

40	53°28.30320'	-005°08.83380'		53°28'18.1920"	-005°08'50.0280"
41	53°27.72720'	-005°09.01980'		53°27'43.6320"	-005°09'01.1880"
42	53°27.56820'	-005°08.70180'		53°27'34.0920"	-005°08'42.1080"
43	53°27.36900'	-005°08.45880'		53°27'22.1400"	-005°08'27.5280"
44	53°27.13980'	-005°08.30640'		53°27'08.3880"	-005°08'18.3840"
45	53°26.95740'	-005°08.25660'		53°26'57.4440"	-005°08'15.3960"
46	53°26.22240'	-005°08.17320'		53°26'13.3440"	-005°08'10.3920"
47	53°26.04660'	-005°08.17980'		53°26'02.7960"	-005°08'10.7880"
48	53°25.89300'	-005°08.22900'		53°25'53.5800"	-005°08'13.7400"
49	53°24.73740'	-005°08.76180'		53°24'44.2440"	-005°08'45.7080"
50	53°24.40500'	-005°09.03540'		53°24'24.3000"	-005°09'02.1240"
51	53°24.17760'	-005°09.43620'		53°24'10.6560"	-005°09'26.1720"
52	53°23.56380'	-005°10.95480'		53°23'33.8280"	-005°10'57.2880"
53	53°23.42760'	-005°11.45040'		53°23'25.6560"	-005°11'27.0240"
54	53°23.39220'	-005°11.95860'		53°23'23.5320"	-005°11'57.5160"
55	53°23.43660'	-005°12.39660'		53°23'26.1960"	-005°12'23.7960"
56	53°23.52660'	-005°12.74160'		53°23'31.5960"	-005°12'44.4960"
57	53°23.73960'	-005°13.35900'		53°23'44.3760"	-005°13'21.5400"
58	53°23.70480'	-005°13.55460'		53°23'42.2880"	-005°13'33.2760"
59	53°23.58360'	-005°14.23620'		53°23'35.0160"	-005°14'14.1720"
60	53°23.54220'	-005°14.67420'		53°23'32.5320"	-005°14'40.4520"
61	53°23.56560'	-005°15.08160'		53°23'33.9360"	-005°15'04.8960"
62	53°23.66280'	-005°15.81660'		53°23'39.7680"	-005°15'48.9960"
63	53°23.74260'	-005°16.19580'		53°23'44.5560"	-005°16'11.7480"
64	53°23.83620'	-005°16.45380'		53°23'50.1720"	-005°16'27.2280"
65	53°24.18000'	-005°17.23140'		53°24'10.8000"	-005°17'13.8840"
66	53°24.27540'	-005°17.42160'		53°24'16.5240"	-005°17'25.2960"
67	53°24.22800'	-005°17.82540'		53°24'13.6800"	-005°17'49.5240"
68	53°24.20280'	-005°18.25380'		53°24'12.1680"	-005°18'15.2280"
69	53°24.06840'	-005°18.51720'		53°24'04.1040"	-005°18'31.0320"
70	53°23.95440'	-005°18.79320'		53°23'57.2640"	-005°18'47.5920"
71	53°23.87520'	-005°19.10280'		53°23'52.5120"	-005°19'06.1680"
72	53°23.83620'	-005°19.39920'		53°23'50.1720"	-005°19'23.9520"
73	53°23.80800'	-005°19.77660'		53°23'48.4800"	-005°19'46.5960"
74	53°23.80020'	-005°19.99920'		53°23'48.0120"	-005°19'59.9520"
Then follow the EEZ boundary north, re-joining back to the first point					

Annex D – References

Eno, N.C., MacDonald, D. and Amos, S.C. 1996. A study on the effects of fish (Crustacea/Molluscs) traps on benthic habitats and species. Final report to the European Commission. Study Contract, no. 94/076.

Eno, N.C., MacDonald, D.S., Kinnear, J.A.M., Amos, S.C., Chapman, C.J., Clark, R.A., Bunker, F.S.D. and Munro C. 2001. Effects of crustacean traps on benthic fauna. ICES Journal of Marine Science, 58: 11–20.

Foden, J., Rogers, S.I. and Jones, A.P. 2010. Recovery of UK seabed habitats from benthic fishing and aggregate extraction- towards a cumulative impact assessment. Marine Ecology Progress Series, 411: 259–270.

Freese, L., Auster, P.J., Heifetz, J. and Wing, B.L. 1999. Effects of trawling on seafloor habitat and associated invertebrate taxa in the Gulf of Alaska. Marine Ecology Progress Series, 182: 119–126.

JNCC (2003). Guidance for Common Standards Monitoring Introduction text. Peterborough: JNCC.

Available from <http://jncc.defra.gov.uk/page-2201>

JNCC (2012). UK Guidance on defining boundaries for marine SACs for annex I habitat sites fully detached from the coast. http://jncc.defra.gov.uk/pdf/SACHabBoundaryGuidance_2012Update.pdf

]

Løkkeborg, S. 2005. Impacts of trawling and scallop dredging on benthic habitats and communities. FAO Fisheries Technical Paper. No. 472. Rome, FAO. 58pp.

McConnaughey, R.A., Mier, K., & Dew, C.B. (2000). An examination of chronic trawling effects on soft-bottom benthos of the eastern Bering Sea. ICES Journal of Marine Science, 57, 1377-1388.

Sewell, J., & Hiscock, K. (2005). Effects of fishing within UK European Marine Sites: Guidance for nature conservation agencies. Report to the Countryside Council for Wales [now Natural Resources Wales], English Nature [now Natural England], Scottish Natural Heritage and the Joint Nature Conservation Committee from the Marine Biological Association. Plymouth: Marine Biological Association. CCW Contract FC 73-03-214A.