

Scottish MPA Project Management Options Paper
NORWEGIAN BOUNDARY SEDIMENT PLAIN NATURE CONSERVATION MARINE PROTECTED AREA
JULY 2014

JNCC developed the present paper to support discussions with stakeholders about the management of activities within the Norwegian Boundary Sediment Plain MPA. The paper should be considered as a starting point for discussions around the ongoing process of developing management which will continue after site designation.

The paper does not attempt to cover all possible future activities and does not consider likely cumulative effects that could result from different types of activities being carried out within the MPA. However, it does consider a range of activities and developments believed to be taking place within the MPA at the point of writing, and focuses on where we considered there could be a risk that the protected features would not achieve their conservation objectives.

The following documents provide further information about the protected features in terms of confidence in the evidence base and assessment of the MPA against the MPA Selection Guidelines and should be read alongside this Management Options Paper:

- Site Summary Document
- Data Confidence Assessment
- Detailed assessment against the MPA Selection Guidelines

These documents are all available at www.jncc.defra.gov.uk/page-6485

Document Distribution List and Version Control				
Format	Version	Issue date	Version development and review	Issued to
Electronic	1.0	16/04/2013	Internal drafting and review of pre-version 1.0 drafts by JNCC SMPA team, Offshore Industry Advisors, Fisheries Advisors and Marine Scotland prior to release to MPA Sub Group	MPA Sub Group
Electronic	2.0	09/04/2013	Review of documents to take account of MPA Sub Group comments and release to Marine Scotland	Marine Scotland
Electronic	3.0	24/07/2013	Revision to take account of editorial review and Grade 7 review prior to release of document for public consultation.	Uploaded to JNCC website
Electronic	4.0	07/07/2014	Document update to align with designation status and revise text in response to consultation responses	Delivery to Marine Scotland to support MPA designation and upload to JNCC website

DEVELOPMENT OF MANAGEMENT OPTIONS FOR THE NORWEGIAN BOUNDARY SEDIMENT PLAIN MPA

1 Management Options Summary

This section summarises JNCC's management options for the Norwegian Boundary Sediment Plain MPA. The options are being considered to eliminate or manage the risk of not meeting the conservation objective to conserve the protected features within the MPA. Full details on these options are provided in the subsequent sections of the Management Options Paper below. Discussions between sea users, scientists and managers will be needed to develop any subsequent management measures.

Activity	Management options
Fishing activity: Bottom contacting mobile gear (e.g. otter trawling and demersal seine netting)	No additional management: There is a risk of not achieving the conservation objective for ocean quahog aggregations. Reduce/limit pressures: This option would reduce, but not entirely eliminate, the risk of not achieving the conservation objective for ocean quahog aggregations. Appropriate management could include restrictions on gears known to impact the species, such as scallop and hydraulic dredging. The location of areas to be covered by management restrictions would be decided in consultation with fishers. Restrictions could be permanent in some cases or temporary/adaptive in others. Remove/avoid pressures: This option would reduce the risk of not achieving the conservation objective for ocean quahog aggregations to the lowest possible levels. This option could include restrictions on gears that could impact the species, such as otter trawling as well as scallop and hydraulic dredging.
Licensed activities: (e.g. oil and gas activity)	The potential impacts of oil and gas activity and/or developments on the protected features within the MPA will be assessed through the existing EIA process on a case-by-case basis. Early dialogue with DECC and JNCC would help identify and resolve any issues at an early stage.

2 Introduction

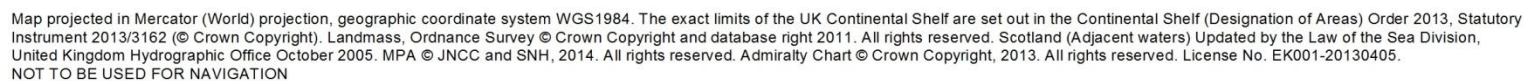
The Norwegian Boundary Sediment Plain Marine Protected Area (MPA) is located to the east of Scotland and lies adjacent to the boundary between Scottish offshore waters and Norwegian offshore waters (see map 1). A sandy sediment plain, the MPA has been designated to conserve ocean quahog - one of the longest living creatures on Earth. Ocean quahog are a thick-shelled clam-like animal that lives buried in the sand. The area of the Norwegian Boundary Sediment Plain MPA is approximately 164 km².

Further details on the MPA can be found in the Norwegian Boundary Sediment Plain Site Summary Document available at www.jncc.defra.gov.uk/page-6485.

Evidence indicates that fishing activity within the MPA is negligible, with only limited otter trawling and demersal seine netting. However, evidence suggests the presence of non-UK vessels within the MPA, including those from EU countries and Norway. The MPA also overlaps with a region of oil and gas industry activity; wells, pipelines and associated infrastructure are present within the MPA.

This document has been produced to provide background information on the development of management for the Norwegian Boundary Sediment Plain MPA, and will be used to support stakeholder discussions.

The document describes the known location and extent of protected features and our current knowledge of where activities take place within the MPA. It also presents the management options for each of those activities that JNCC currently consider capable of delivering the conservation objectives for protected features. The document encourages stakeholders with an interest in the area to input to the development of appropriate management measures that will ensure the Norwegian Boundary Sediment Plain MPA makes a genuine and long-lasting contribution to the protection of Scotland's marine environment.



3 Roles

JNCC provides conservation advice to Scottish Government on how it might be possible to achieve the conservation objectives for protected features within MPAs. JNCC's advice includes possible management options for controlling human activities in the Norwegian Boundary Sediment Plain MPA.

Marine Scotland lead the discussions on developing appropriate management with stakeholders, taking account of JNCC's and others' advice, identify the preferred management option and develop specific management measures with relevant authorities. Marine Scotland is responsible for making recommendations to Scottish Ministers on these measures and any review of site management in the future. Scottish Ministers will decide whether to implement these measures. Marine Scotland expect that any licensed activities taking place within, or nearby, the MPA will continue to be managed through the existing licensing system. For MPAs in offshore waters, Marine Scotland expect the process through the Common Fisheries Policy that is already in place for delivering fisheries management requirements for Special Areas of Conservation will be followed.

Stakeholders can provide additional evidence to support the development of management measures including local knowledge of the environment and of activities. Discussions with stakeholders will be one way of highlighting the implications of any management measures to JNCC, Scottish Government, and other regulators. This will contribute to the development of well-designed and effective management measures.

4 Protected features and conservation objectives

The Norwegian Boundary Sediment Plain MPA has been designated as part of a network of Nature Conservation MPAs being established to help conserve a range of Scotland's important marine habitats, wildlife, geology and landforms. The Norwegian Boundary Sediment Plain MPA has been designated for the following protected feature, as shown in Map 2:

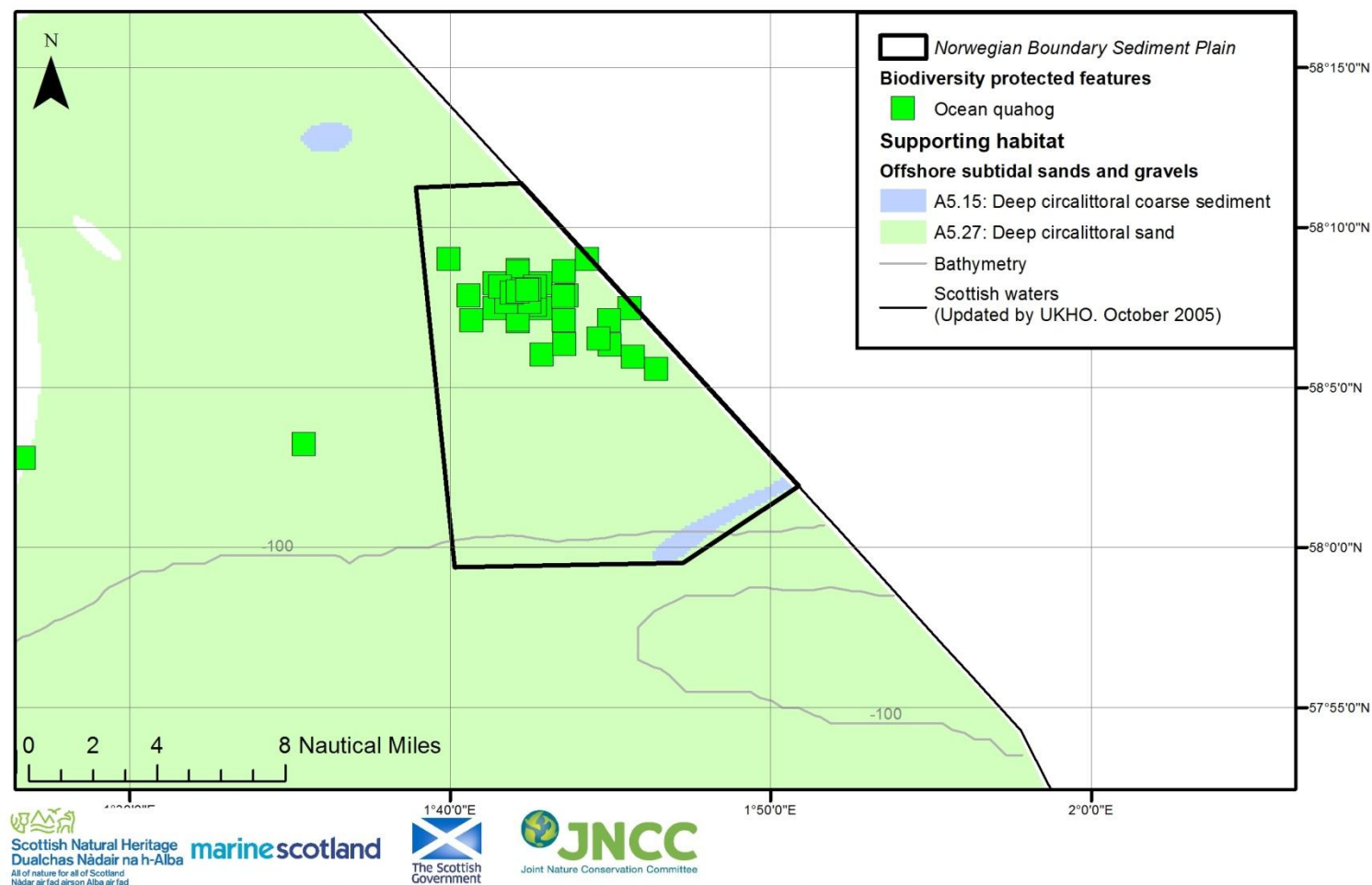
- Ocean quahog aggregations, including sediment types suitable for their colonisation (sand and gravel habitat)*

*The protection of ocean quahog requires the protection of its supporting habitat i.e. certain types of offshore subtidal sands and gravels. Protection of this habitat will be focused on that required to sustain the ocean quahog (e.g. minimising the alteration of local habitat type in the area) rather than on conserving the range of species typically associated with offshore subtidal sand and gravel habitats.

Conservation objectives set out the desired quality of the protected features within each MPA. JNCC recommend that the conservation objective for the ocean quahog protected feature within the Norwegian Boundary Sediment Plain MPA is '*conserve*'. The ecological condition of the feature has not been verified by direct evidence so the uncertainty of the feature condition is noted alongside the objective (feature condition uncertain).

Improved evidence on the condition of the feature will be collected as part of the six-year reporting cycle required under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009, or through provision of other evidence, and may result in modifications to JNCC's recommendations for management to achieve the features' conservation objective.

Map 2 The known distribution of protected features within the Norwegian Boundary Sediment Plain MPA



Map displayed in geographic coordinates WGS84. The exact limits of the UK Continental Shelf are set out in the Continental Shelf (Designation of Areas) Order 2013, Statutory Instrument 2013/3162 (© Crown Copyright). Landmass Ordnance Survey © Crown Copyright and database right 2011. All rights reserved. Scotland (Adjacent waters) Updated by the Law of the Sea Division, United Kingdom Hydrographic Office October 2005. Bathymetry © GEBCO, 2011. Biological data from Geodatabase of Marine features in Scotland (GeMS v4) © Crown copyright. MPA and geodiversity features © JNCC and SNH 2014. All rights reserved.

5 Overview of activities

Table 1 below lists the human activities which are known to take place within or close to the Norwegian Boundary Sediment Plain MPA. Further discussions with those who use the area will continue to improve our understanding of these activities, particularly in terms of their spatial distribution and intensity.

Those activities to which the protected feature is sensitive are explored in detail in the next section. Activities to which the protected feature is not thought to be sensitive (i.e. any interaction between the activity and the protected feature is considered to be minimal) will not be considered further within this document. Any future change in the spatial distribution/intensity of those activities listed in Table 1, or the introduction of other activities not currently identified within the table would need to be considered on a case-by-case basis to establish the appropriate management actions.

Table 1: Overview of existing activities believed to take place within or close to the Norwegian Boundary Sediment Plain MPA

Activities considered capable of affecting the protected features	Activities <i>not</i> considered capable of affecting the protected features
Fishing activities: • Demersal seine netting • Otter trawling Licensed activities: • Oil and gas industry developments, including drilling of wells, installation of platforms, pipelines and other subsea infrastructure, and their ongoing use and maintenance.	Shipping: • Commercial shipping

6 Development of management options

JNCC developed management options for each MPA where we consider that some form of active management intervention may be necessary to achieve the conservation objective for each protected feature. We adopted a risk-based approach to identify appropriate management options i.e. the advice was focused where JNCC believe there is a risk the protected features will not achieve their conservation objective. To do this assessment, we have used existing data and information on protected features and relevant activities, and also our understanding of the relationships between the protected features and activities. JNCC expect on-going discussions with stakeholders during the development of any management actions

Our management options focus on the activities that cause a pressure to which a protected feature is sensitive. Pressures can be physical (e.g. abrasion of the seabed), chemical or biological. Different activities may cause the same pressure, e.g. fishing using bottom gears and aggregate dredging both cause surface abrasion which can damage the seabed although the scale and intensity of the pressure can vary between activities. Thus, the protected features of a MPA are considered sensitive to activities that could adversely affect their conservation value, especially if they are unable or are very slow to recover from damage.

The Features Assessment Sensitivity Tool ([FeAST](#)) reflects our current understanding of the interactions between activities, pressures and features and supports the first steps of the assessment of the risk that the features will not achieve their conservation objectives in the

MPAs. The tool highlights that activities can give rise to a range of pressures, to which the protected features of the MPA may be sensitive. The online tool provides more detailed information including the evidence that has been used in developing these recommendations.

Risks to not achieving the conservation objectives have been identified where there is an overlap between protected features and activities associated with any pressures to which the features are sensitive. We have recommended management options to manage this risk. Specific details of the recommended management options for each activity are provided in the following sections. The overlap between different ongoing activities and/or planned developments and the protected features is described and where appropriate, mapped. The text focuses on interactions in terms of physical overlap but the assessment of risk in the future should also take account of the intensity and frequency of the activities occurring within the MPA.

JNCC have identified the following three management options:

- no additional management required
- management to reduce/limit pressures
- management to remove/avoid pressures

All of the management options provided are based on the best available evidence of existing activities taking place within the MPA. The options do not preclude the introduction of a management measure in the future for new activities or where an existing activity occurs at an increased intensity.

7 Management options

Management options have been considered by activity, please click on the activities below to be directed to the relevant section:

Fishing Activity

Mobile bottom contact gear

- Otter trawling
- Demersal seine netting

Licensed activities

- Oil and gas activity and pipelines

7.1. Fishing activity

JNCC evaluated the management options to manage the risk of the protected features not achieving their conservation objectives for the Norwegian Boundary Sediment Plain MPA. A gradient of management options have been considered to reduce exposure to pressures, these have been described under three potential management option categories below. Protected features may require a combination of these options to ensure that they achieve their conservation objective.

a) No additional management

b) 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 to features by reducing fishing pressure or preventing its increase to unacceptably high levels. These could include:

- Area restrictions (e.g. permanently closing some or the entire extent of the feature)
- Temporal restrictions (e.g. closing parts of the extent of the feature on a rotational basis)
- Seasonal restrictions
- Gear restrictions (eg. restriction on the use of more damaging gears)

Ideally, any measures would generally apply only to the part of the site where the feature is present. However, there may be circumstances where it could be desirable to extend management measures beyond the known area of feature distribution, for example, where conditions are suitable for a feature to exist but there are insufficient data to confirm its presence.

c) Additional management to remove/avoid pressures – where those fishing activities known to adversely affect the feature would be excluded and prevented from occurring in the future. Such exclusion would generally apply only to the part of the site where the feature is present, unless it was necessary to apply to a wider area or even the whole MPA.

The likely effects on the feature condition and the risk to the conservation objectives were assessed using the evidence described in the [JNCC/SNH MPA fisheries management guidance](#).

An estimation of >15m fishing activity taking place within the region of the MPA was derived from Vessel Monitoring System (VMS) data, with an average 2 hourly ping rate. VMS data for UK vessels were linked to skipper logbook information, which was used to determine the fishing gear being employed for each ping. For non-UK registered vessels where logbook information was not available, information on fishing gear employed was obtained from the 'primary gear' listed on the EU vessel register. All data were filtered using a simple speed rule of between 1 and 6 knots to indicate fishing activity for all gear types. Between 2006 and 2009, generalised values for intensity of effort were estimated by aggregating VMS data to a 0.05 x 0.05 decimal degree grid. This gridding method has the advantage quantifying effort at a specific spatial scale (hours per unit area (grid resolution) per year), however, it precludes analysis of patterns of activity below the resolution of the pre-defined grid. As a result, independent "pings" were analysed for the period 2009 to 2011. To ensure anonymity of the data source, discrete VMS ping data is presented only in instances where it would not compromise the anonymity of an individual vessel (i.e. there are multiple vessels operating in the same area).

7.1.1. Fishing activity: Mobile bottom contact gear

Demersal seine netting

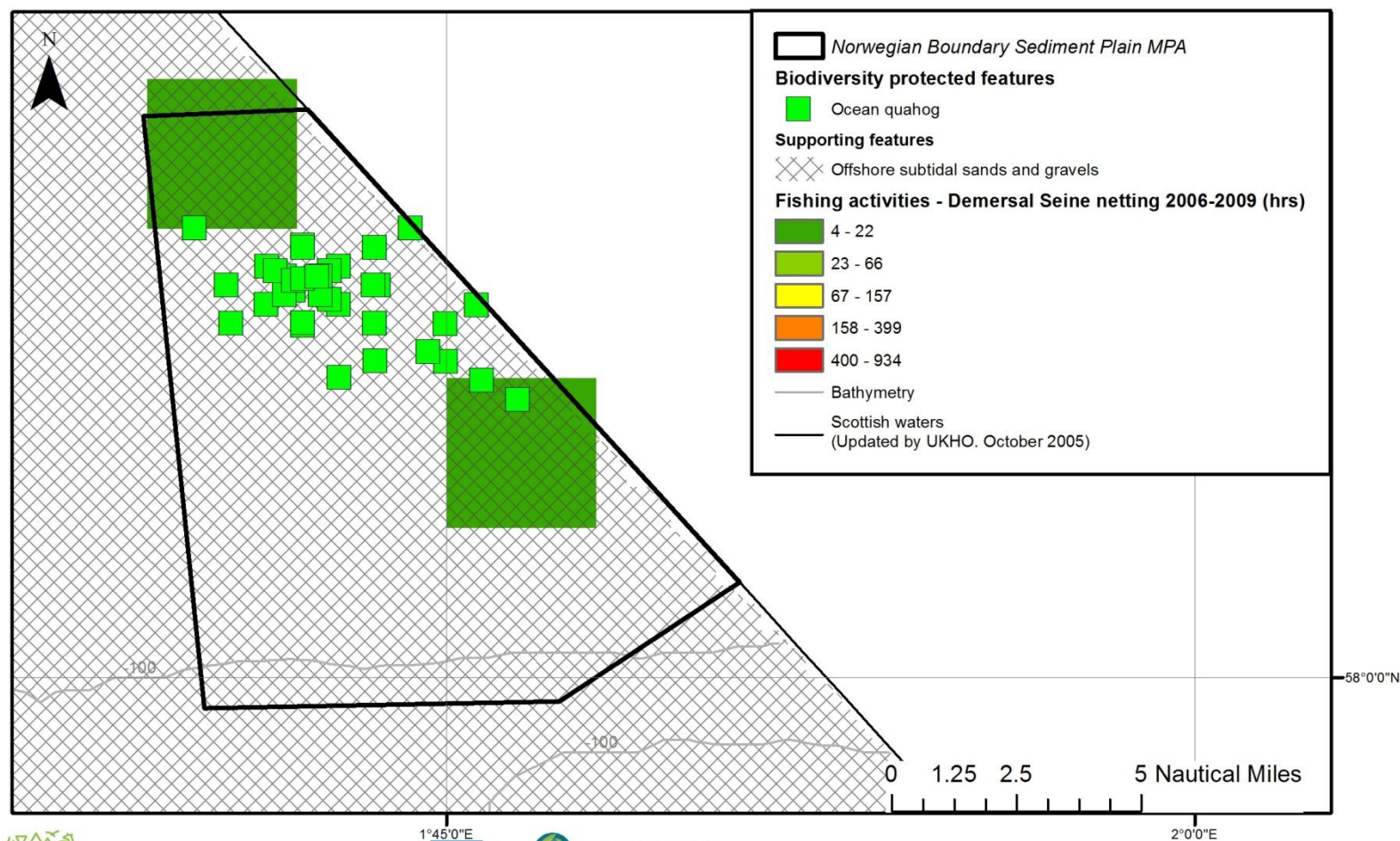
Demersal seine netting effort within the MPA is negligible (i.e. fewer than 11 hours effort in any grid during 2006 to 2009), as shown in map 3.

Otter trawling

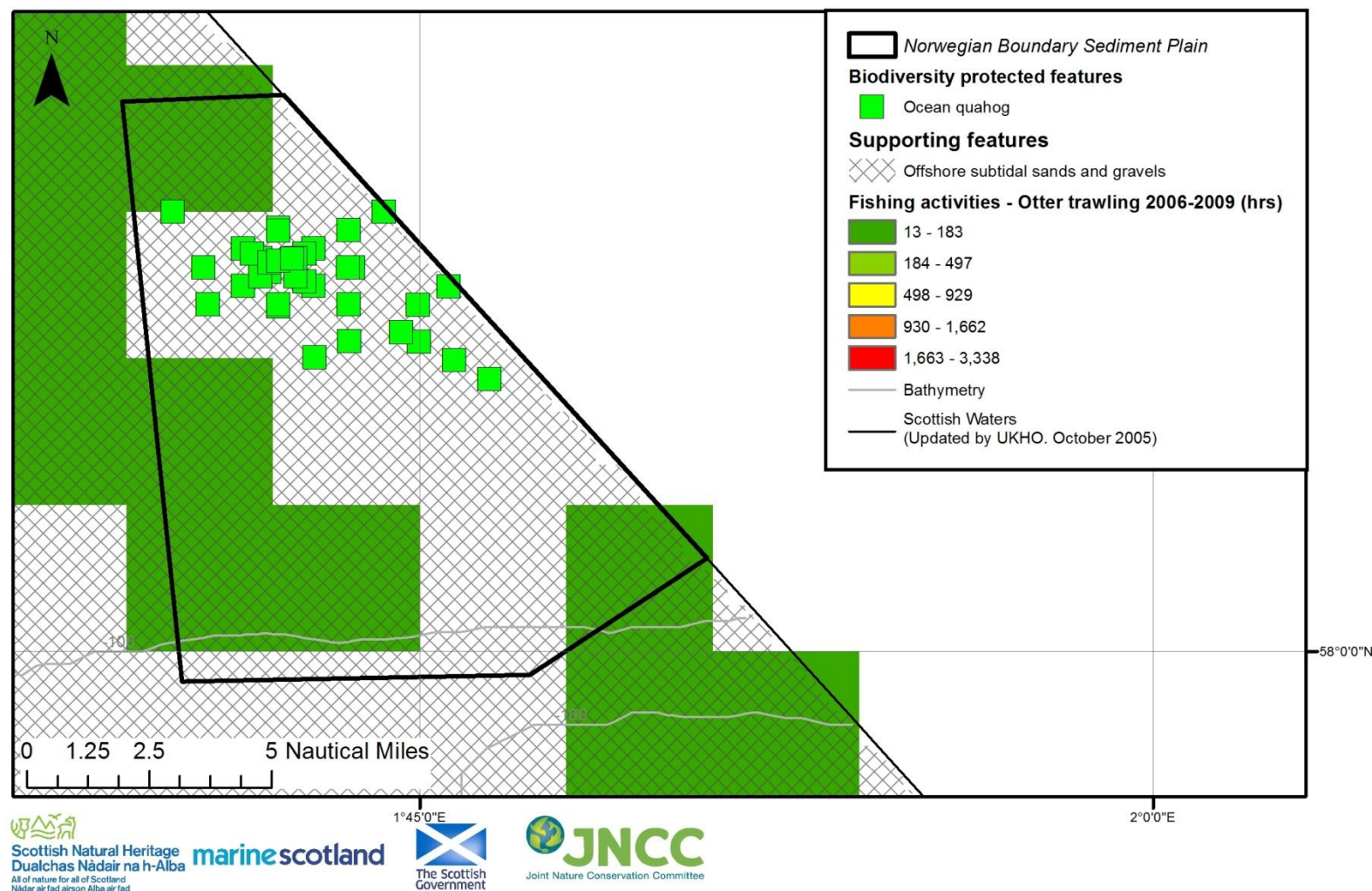
Although there is significant (more than 1000 hours 2006-2009) demersal otter trawling effort to the east of the MPA in the Fladen ground region, effort within the MPA is negligible (i.e. less than 20 hours effort in any grid during 2006 to 2009), as shown in map 4.

Management options (e.g. otter trawling and demersal seine netting)	No additional management: There is a risk of not achieving the conservation objective for ocean quahog aggregations . Reduce/limit pressures: This option would reduce, but not entirely eliminate, the risk of not achieving the conservation objective for ocean quahog aggregations . Appropriate management could include restrictions on gears known to impact the species, such as scallop and hydraulic dredging. The location of areas to be covered by management restrictions would be decided in consultation with fishers. Restrictions could be permanent in some cases or temporary/adaptive in others. Remove/avoid pressures: This option would reduce the risk of not achieving the conservation objective for ocean quahog aggregations to the lowest possible levels. This option could include restrictions on gears that could impact the species, such as otter trawling as well as scallop and hydraulic dredging.
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Map 3: Location of demersal seine netting fishing activity in relation to protected features



Map 4: Location of otter trawling activity in relation to protected features



Map displayed in geographic coordinates WGS84. The exact limits of the UK Continental Shelf are set out in the Continental Shelf (Designation of Areas) Order 2013, Statutory Instrument 2013/3162 (© Crown Copyright). Landmass Ordnance Survey © Crown Copyright and database right 2011. All rights reserved. Scotland (Adjacent waters) Updated by the Law of the Sea Division, United Kingdom Hydrographic Office October 2005. Bathymetry © GEBCO, 2011. Biological data from Geodatabase of Marine features in Scotland (GeMS v4) © Crown copyright. MPA and geodiversity features © JNCC and SNH 2014. All rights reserved. Fishing raster data ©DEFRA 2010. Fishing point data ©MS 2012.

7.2. Oil and gas activity

Four oil and gas wells currently exist within the MPA, along with associated pipelines and other infrastructure, as shown in map 5.

The Department of Energy and Climate Change (DECC), as the regulator for oil and gas activity in the UK, would be responsible for making the decision on whether a proposed activity and/or development is capable of affecting (other than insignificantly)¹ the protected features of a Nature Conservation MPA.

For those activities and/or developments that DECC considers require an EIA, JNCC is willing to engage at an early stage with DECC 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 protected features to proposed activities and/or developments that is publicly available through 'FEAST' – The FEatures, Activities, Sensitivities Tool (Marine Scotland, 2013).

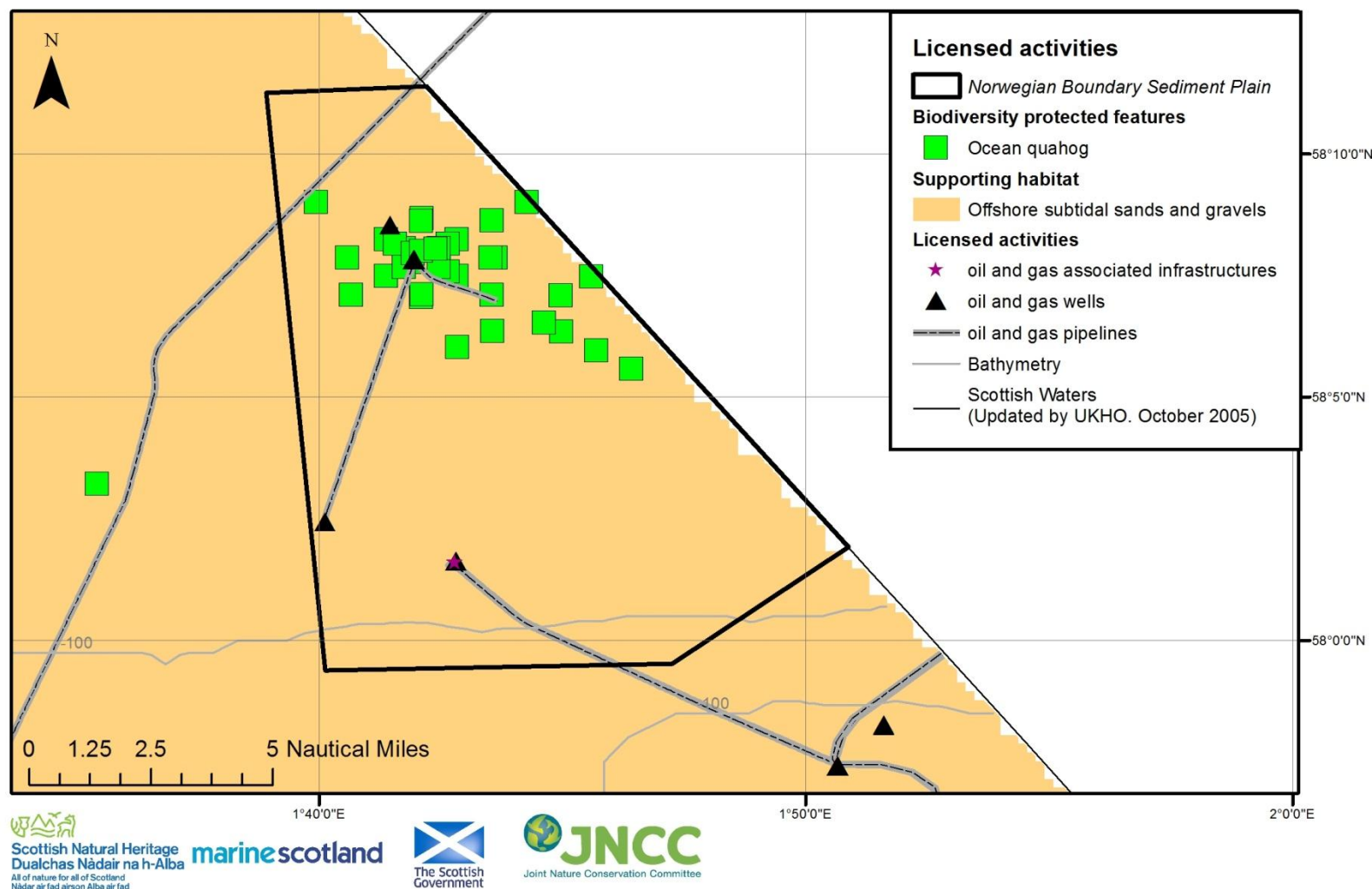
JNCC will consider the nature, scale, timing and duration of activities in providing its advice. Early engagement will facilitate discussions on the information required to advise on any possible implications to the protected features achieving their conservation objectives. If JNCC identify a potentially significant effect, mitigation measures may be advised. Any such advice provided as part of the licensing process will need to be site and operation specific. On this basis, the information JNCC provides as part of the (present) Management Options Paper is necessarily generic and therefore indicative.

Further information on the regulatory framework concerning oil and gas activity within Nature Conservation MPAs is included in the [MPA Management Handbook](#).

Management options Oil and gas activity	The potential impacts of oil and gas activity and/or developments on the protected features within the MPA will be assessed through the existing EIA process on a case-by-case basis. Early dialogue with DECC and JNCC would help identify and resolve any issues at an early stage.
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¹ Reference to 'affecting the status of (other than insignificantly)' relates to the requirements on public authorities set out in the UK and Scottish Marine Acts (Sections 125 and 82 respectively) in relation to licensed activities taking place within MPAs.

Map 5: Location of oil and gas infrastructure and pipelines in relation to protected features



Map displayed in geographic coordinates WGS84. The exact limits of the UK Continental Shelf are set out in the Continental Shelf (Designation of Areas) Order 2013, Statutory Instrument 2013/3162 (© Crown Copyright). Landmass Ordnance Survey © Crown Copyright and database right 2011. All rights reserved. Scotland (Adjacent waters) Updated by the Law of the Sea Division, United Kingdom Hydrographic Office October 2005. Bathymetry © GEBCO, 2011. Biological data from Geodatabase of Marine features in Scotland (GeMS v4) © Crown copyright. MPA and geodiversity features © JNCC and SNH 2014. All rights reserved. Licensed activities © UKDEAL 2011-2012

8 Conclusions and further recommendations

Marine Scotland will be responsible for making recommendations to Scottish Ministers on any management actions that may be required to deliver the conservation objectives for the protected features. These actions will be developed through discussion with stakeholders. Any statutory measures will be subject to consultation and the processes normally required by the legislation will be utilised. Where fisheries management measures are necessary in any area beyond Scottish Government's exclusive competence, then the intention is that an application will be made to the European Commission for measures using the mechanisms available through the EU Common Fisheries Policy. This process will include consultation on the measures at the EU level.

9 Further information

The following documents are available for background information:

- SNH and JNCC MPA network advice (December 2012) – www.jncc.defra.gov.uk/page-5510
- The MPA Management Handbook - www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork/engagement/ManagementHandbook
- FEatures Activities Sensitivity Tool (FeAST) - www.marine.scotland.gov.uk/FEAST/Index.aspx
- JNCC and SNH Fisheries guidance – www.jncc.defra.gov.uk/page-6498

The following documents about the Norwegian Boundary Sediment Plain MPA are also available at www.jncc.defra.gov.uk/page-6485:

- Site summary
- Data confidence assessment
- Detailed assessment against the MPA Selection Guidelines