

Scottish MPA Project Management Options Paper
FIRTH OF FORTH BANKS COMPLEX NATURE CONSERVATION MARINE PROTECTED AREA
JULY 2014

JNCC developed the present paper to support discussions with stakeholders about the management of activities within this Nature Conservation Marine Protected Area (MPA). The paper should only be considered a starting point for discussions around the ongoing process of developing any management necessary to deliver the conservation objectives of the designated features; the process 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 considered to be taking place within the MPA at the point of writing, and focuses on where we consider there could be a risk of the protected features not achieving 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

The documents are all available at www.jncc.defra.gov.uk/page-6480

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DEVELOPMENT OF MANAGEMENT OPTIONS FOR THE FIRTH OF FORTH BANKS COMPLEX MPA

1 Management Options Summary

This section summarises JNCC's management options for the Firth of Forth Banks Complex 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. The full detail on these options is provided in the subsequent sections of the Management Options Paper. 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, demersal seine netting, and scallop dredging)	<p>No additional management: There is a risk of not achieving the conservation objectives for ocean quahog aggregations and offshore subtidal sands and gravels.</p> <p>Reduce/limit pressures: This option would reduce, but not entirely eliminate, the risk of not achieving the conservation objectives for ocean quahog aggregations and offshore subtidal sands and gravels. Appropriate management for ocean quahog could include restrictions on gears known to impact the species, such as scallop and hydraulic dredging. Appropriate management for offshore subtidal sands and gravels could include a zoned approach, where management measures that apply to damaging gears are introduced to protect a proportion of the feature representing the full diversity of sand and gravel habitats across the Complex. There may be a greater requirement for restrictions on gears that penetrate deeply into the sediment. 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.</p> <p>Remove/avoid pressures: This option would minimise the risk of not achieving the conservation objectives for ocean quahog aggregations and offshore subtidal sands and gravels to the lowest possible levels. This is likely to include restrictions on gears that could impact the features, such as otter trawling, scallop and hydraulic dredging.</p>
Fishing activity: Bottom contact static gear (e.g. creeling and potting)	<p>No additional management: It is unlikely that any additional management of creeling and potting activities will be required, as the risk of not achieving the conservation objectives for ocean quahog aggregations and offshore subtidal sands and gravels associated with these activities is minimal. However, if static gear fishing intensity increased or monitoring showed evidence of detrimental effects, it may be necessary to apply limits in the future.</p>

<p>Licensed activities: (e.g. Renewables activity)</p>	<p>The potential impacts of renewable energy 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 Marine Scotland and JNCC would help identify and resolve any issues at an early stage.</p>
<p>Ministry of Defence activity</p>	<p>Military activity is unlikely to interact with the protected features and JNCC consider that no additional management is required. Should seabed activities occur in future, JNCC anticipate that management will be coordinated through the Ministry of Defence Environmental Protection Guidelines.</p>

2 Introduction

The Firth of Forth Banks Complex Marine Protected Area (MPA) is located in offshore waters to the east of Scotland, and includes the Berwick, Scalp and Montrose Banks and the Wee Bankie (see map 1). Strongly influenced by water currents, the mosaic of different types of sands and gravels create a unique mix of habitats that overlie the underwater banks and mounds within the site. The area of the Firth of Forth Banks Complex MPA is approximately 2,130 km².

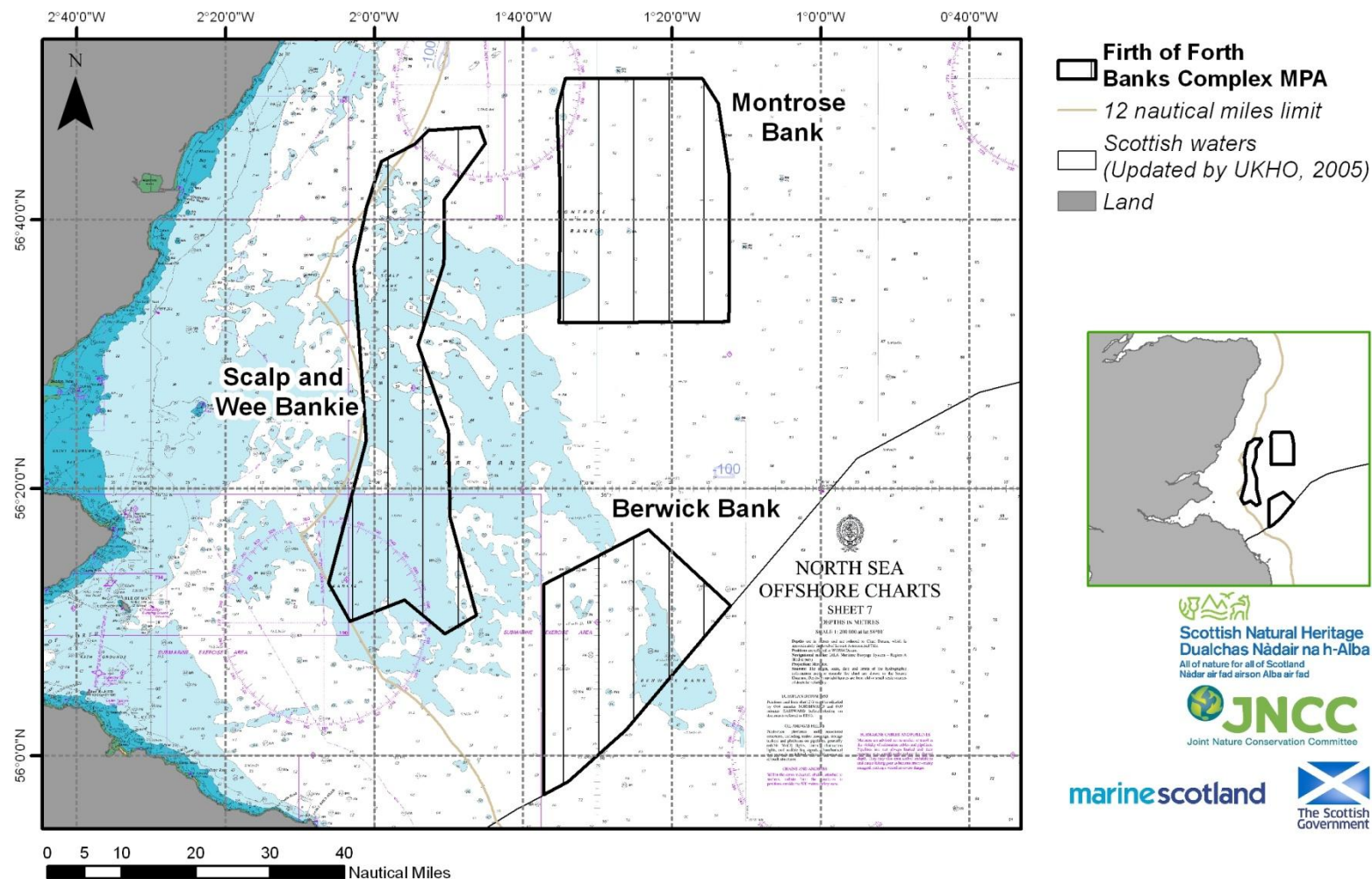
Further details on the MPA can be found in the Firth of Forth Banks Complex Site Summary Document available at www.jncc.defra.gov.uk/page-6480

A number of human activities take place within the Firth of Forth area. Boat dredging for king scallops is the principle mobile gear fishery overlapping the MPA, although some otter trawling also takes place within the site boundary targeting a mixed demersal species fishery. Evidence from available Vessel Monitoring System (VMS) data suggested that some low-level hydraulic dredging activity had taken place within the area. However, the lack of associated landings data that would reflect this activity and discussions with stakeholders as part of the consultation process suggest that this is most likely a data artefact and is probably incorrectly coded scallop dredging activity. There is good anecdotal evidence of a widespread creel fishery in the area. In the past, a large sandeel fishery overlapped the sandbanks within the MPA, but the region has been closed to sandeel fishing since 2000 (East coast Wee Bankie closed area). The MPA also overlaps with a Ministry of Defence practice area and a Round 3 wind farm licence area.

JNCC produced the present document to provide background information on the development of management options for the Firth of Forth Banks Complex MPA, and will use it to support ongoing 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 Firth of Forth Banks Complex MPA makes a genuine and long-lasting contribution to the protection of Scotland's marine environment.

Map 1: Location of the Firth of Forth Banks Complex MPA



Map projected in Mercator (World) projection, geographic coordinate system WGS1984. 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. MPA © JNCC and SNH, 2014. All rights reserved. Admiralty Chart © Crown Copyright, 2013. All rights reserved. License No. EK001-20130405. NOT TO BE USED FOR NAVIGATION

3 Roles

JNCC provides conservation advice to Scottish Government on how it might be possible to achieve the conservation objectives for the protected features within the MPA. JNCC's advice includes possible management options for controlling human activities in the Firth of Forth Banks Complex MPA.

Marine Scotland lead the discussions on developing appropriate management actions 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. It is expected that licensed activities taking place within, or nearby, the MPA will continue to be managed through the existing licensing system. For MPAs in offshore waters, the expectation is that the process through the Common Fisheries Policy that is already in place for delivering any fisheries management requirements for Special Areas of Conservation will be followed for the Firth of Forth Banks Complex MPA.

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 input will contribute to the development of well-designed and effective management measures.

4 Protected features and conservation objectives

The Firth of Forth Banks Complex MPA has been designated as part of a network of Nature Conservation MPAs that are established to help conserve a range of Scotland's important marine habitats, wildlife, geology and landforms. The Firth of Forth Banks Complex MPA has been designated for the following protected features, as shown in Map 2:

- Ocean quahog aggregations
- Offshore subtidal sands and gravels
- Shelf banks and mounds*
- Geodiversity feature - moraines**

*On the basis of available evidence, JNCC considers that the shelf bank and mounds feature is unlikely to be impacted by marine activities taking place in the MPA¹. As such, JNCC do not consider there are any significant risks to the feature not achieving its conservation objective and so the feature has not been assessed further in the context of the management options presented below.

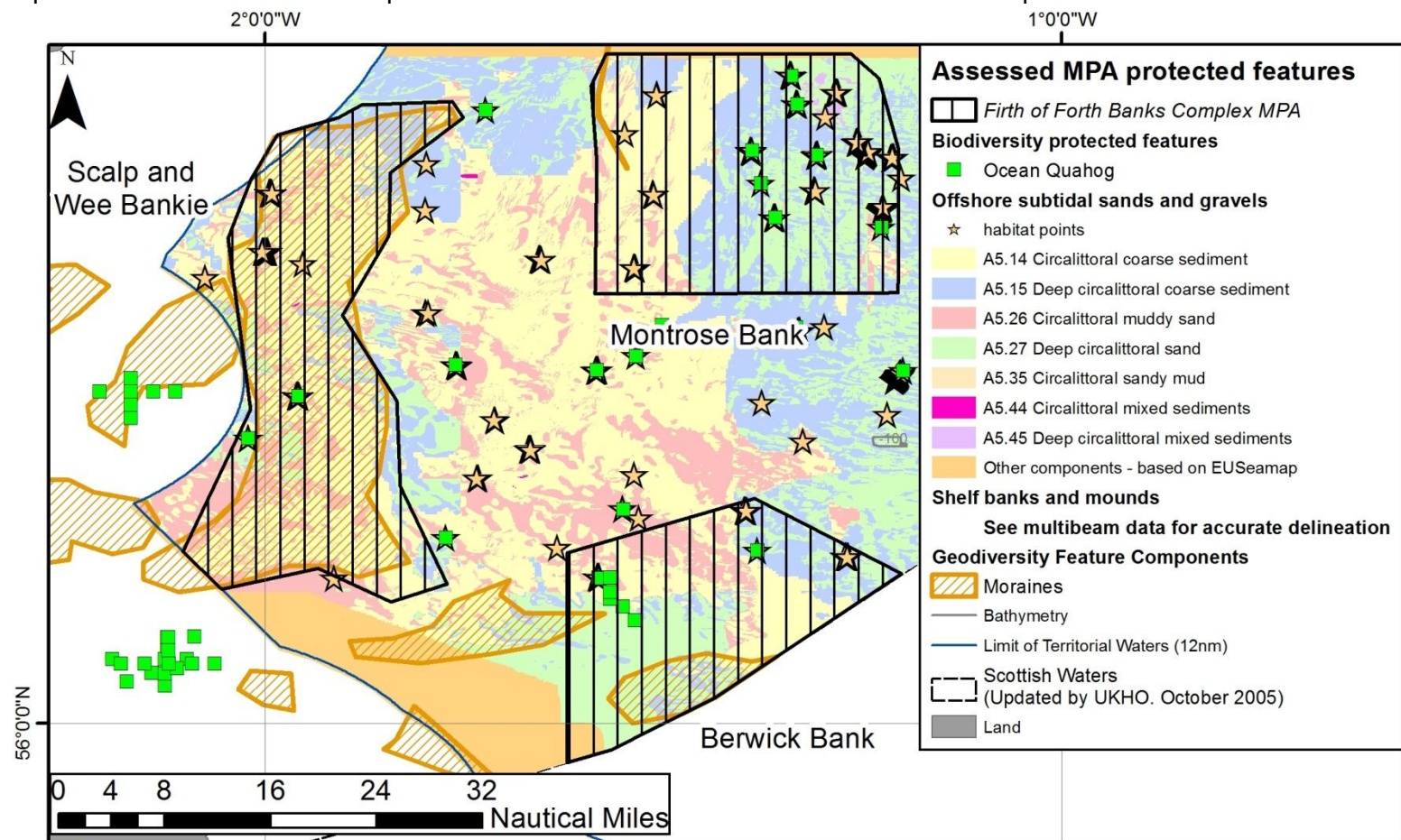
**The moraines geodiversity feature overlaps with the composition of offshore subtidal sands and gravels in the MPA. JNCC consider the management options presented for offshore subtidal sands and gravels will be similar to those that would be appropriate for the geodiversity interests. Consequently, the geodiversity feature has not been reported further in the context of the management options presented below.

Conservation objectives set out the desired quality of the protected features within each MPA. JNCC recommend that the conservation objectives for the protected features within the Firth of Forth Banks Complex MPA are 'conserve' for all features. The condition of the features has not been verified by direct evidence of ecological condition so the uncertainty of the feature condition is noted alongside the objective (feature condition uncertain). Improved

¹ Brooks, A.J., (2013). Assessing the sensitivity of geodiversity features in Scotland's seas to pressures associated with human activities. *Scottish Natural Heritage Commissioned Report No. 590*.

evidence on the condition of these features 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, may result in modifications to JNCC's recommendations for management to achieve the features' conservation objectives.

Map 2: The known distribution of protected features within the Firth of Forth Banks Complex MPA



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5 Overview of activities

Table 1 below lists the human activities that currently take place within or close to the Firth of Forth Banks Complex 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 features are sensitive are explored in detail in the next section. Activities to which the protected features are not thought to be sensitive (i.e. any interaction between the activity and the protected features is considered to be minimal) will not be considered further within this document. Any future change in the activities listed in Table 1, or the introduction of other activities not identified within the table would need to be considered on a case-by-case basis to establish any appropriate management actions.

Table 1: Overview of existing activities believed to take place within or close to the Firth of Forth Banks Complex MPA

Activities considered capable of affecting the protected features	Activities <i>not</i> considered capable of affecting the protected features
<p>Fishing activity:</p> <ul style="list-style-type: none"> • Demersal Seine netting (minimal activity) • Otter trawling • Scallop dredging • Creeling and potting <p>Licensed activities:</p> <ul style="list-style-type: none"> • Renewable energy <p>Ministry of Defence:</p> <ul style="list-style-type: none"> • Seabed, sea surface and sub-surface activity 	<p>Fishing activity*</p> <ul style="list-style-type: none"> • Pelagic trawling and purse seining <p>Shipping</p> <ul style="list-style-type: none"> • Commercial shipping

*Only the specific examples of the activity listed have been excluded, rather than the broad activity types.

6 Development of management options

JNCC developed management options for each MPA where we consider that some form of active management intervention will be necessary to achieve the conservation objective for each protected feature. We adopted a risk-based approach to identify appropriate management options i.e. our advice is focused where we believe there is a risk to not achieving the conservation objective for the protected features. To do this, 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 risk to the features not achieving 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 those 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, or nearby, the MPA.

JNCC identify 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
- Scallop dredging

Static bottom contact gear

- Creeling and potting

Licensed activities

- Round 3 Wind License Area

Ministry of Defence activity

- Practice area

7.1 Fishing activity

JNCC has evaluated management options to manage the risk of not achieving the conservation objectives for the protected features of the Firth of Forth Banks Complex 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 (e.g. 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 the whole MPA for practical reasons (such as enforcement) or to fully minimise the risk to the feature.

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 (approximately 5km²). This gridding method has the advantage of enabling the quantification of effort at a discrete spatial scale (hours per unit area (grid resolution) per year), however, it precludes analysis of patterns of activity below the pre-defined resolution of the grid. As a result, individual "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

Otter trawling

Over 15m otter trawling takes place across the MPA. In 2009-2011, effort was mainly concentrated on the shallow western Wee Bankie component (shown in Map 3 as VMS points), whereas, between 2006 and 2009 activity was greatest on the Montrose Bank (maximum effort in any grid was 214 hours). There is evidence of under-15m demersal otter trawling in the region, primarily targeting squid, although the distribution of effort within the MPA is less certain than for the over 15m fleet. Currently there is no non-UK otter trawling activity within the MPA, but prior to the East of Scotland sandeel closure in 2000, Wee Bankie was an area of considerable importance to the Danish industrial sandeel fishery.

Scallop dredging

Scallop dredging activity by over 15m vessels takes place in all three components of the Firth of Forth Banks Complex MPA, although the greatest activity occurred on the western edge of the Wee Bankie. Up to 756 hours effort in a single grid was recorded between 2006 and 2009. However, the majority of the scallop dredge fishery over this period occurred outside the boundary of the MPA within the 12nm territorial waters limit, as shown in Map 4. There is also good anecdotal evidence of under-15m vessels scallop dredging in all three components of the Firth of Forth Banks Complex MPA.

Demersal seine netting

Demersal seine netting effort is negligible across the MPA (i.e. less than 6 hours effort in any grid during 2006 to 2009), as shown in Map 5. All available activity records indicate this to be Scottish seine netting (flyshooting) which uses a floating marker buoy rather than an anchor to secure the leading rope.

Management Options Bottom contact towed gear:

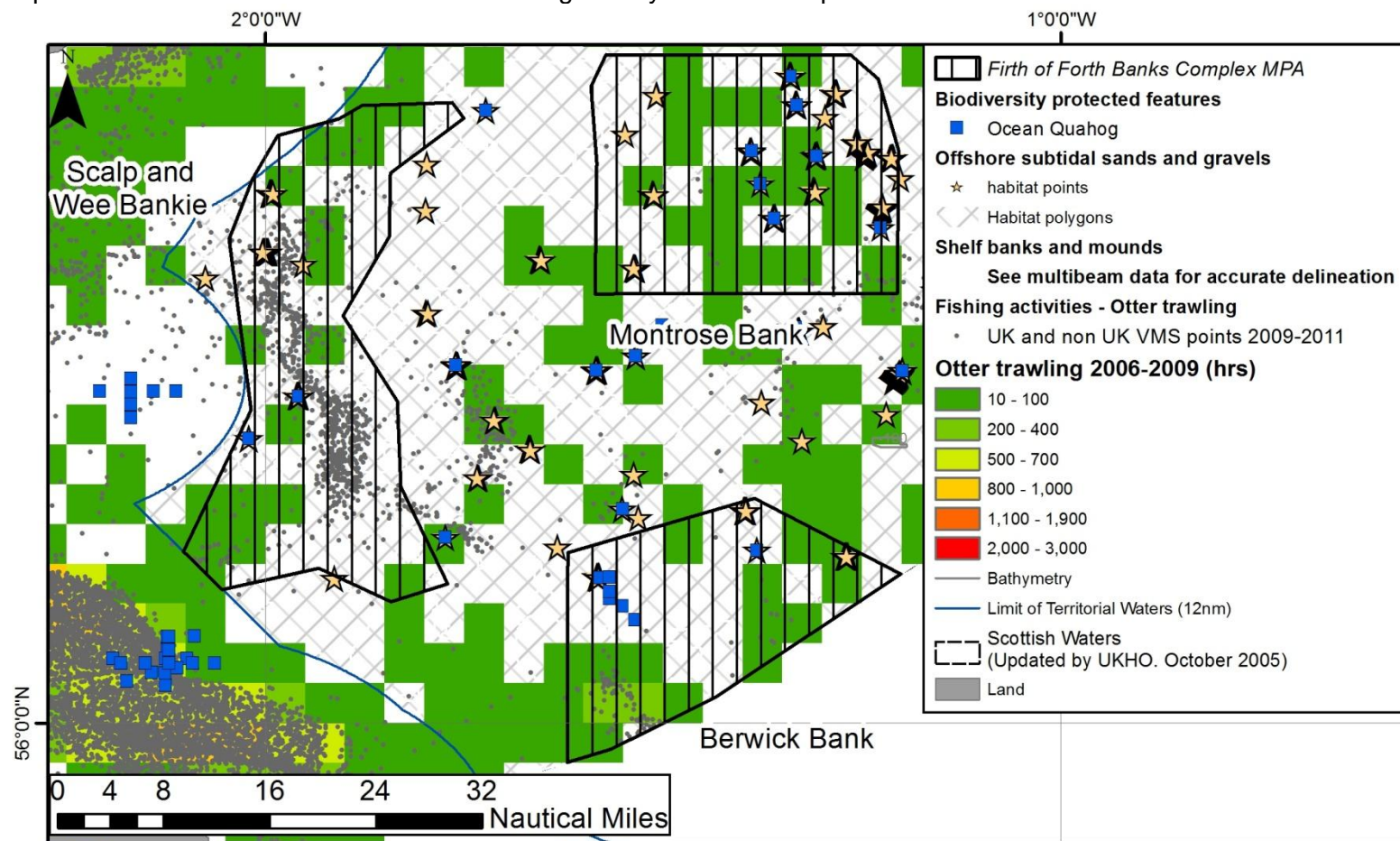
(e.g. otter trawling,
demersal seine netting,
scallop dredging)

No additional management: There is a risk of not achieving the conservation objectives for **ocean quahog aggregations** and **offshore subtidal sands and gravels**.

Reduce/limit pressures: This option would reduce, but not entirely eliminate, the risk of not achieving the conservation objectives for **ocean quahog aggregations** and **offshore subtidal sands and gravels**. Appropriate management for ocean quahog could include specific restrictions on those gears known to impact the species, such as scallop and hydraulic dredging. Appropriate management for offshore subtidal sands and gravels could include a zoned approach, where management measures that apply to damaging gears are introduced to protect a proportion of the feature representing the full diversity of sand and gravel habitats across the Complex. There may be a greater requirement for restrictions on gears that penetrate deeply into the sediment. 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 minimise the risk of not achieving the conservation objectives for **ocean quahog aggregations** and **offshore subtidal sands and gravels** to the lowest possible levels. This is likely to include restrictions on all gears that could impact the features, such as otter trawling, scallop and hydraulic dredging.

Map 3: Location of over 15m vessel otter trawling activity in relation to protected features



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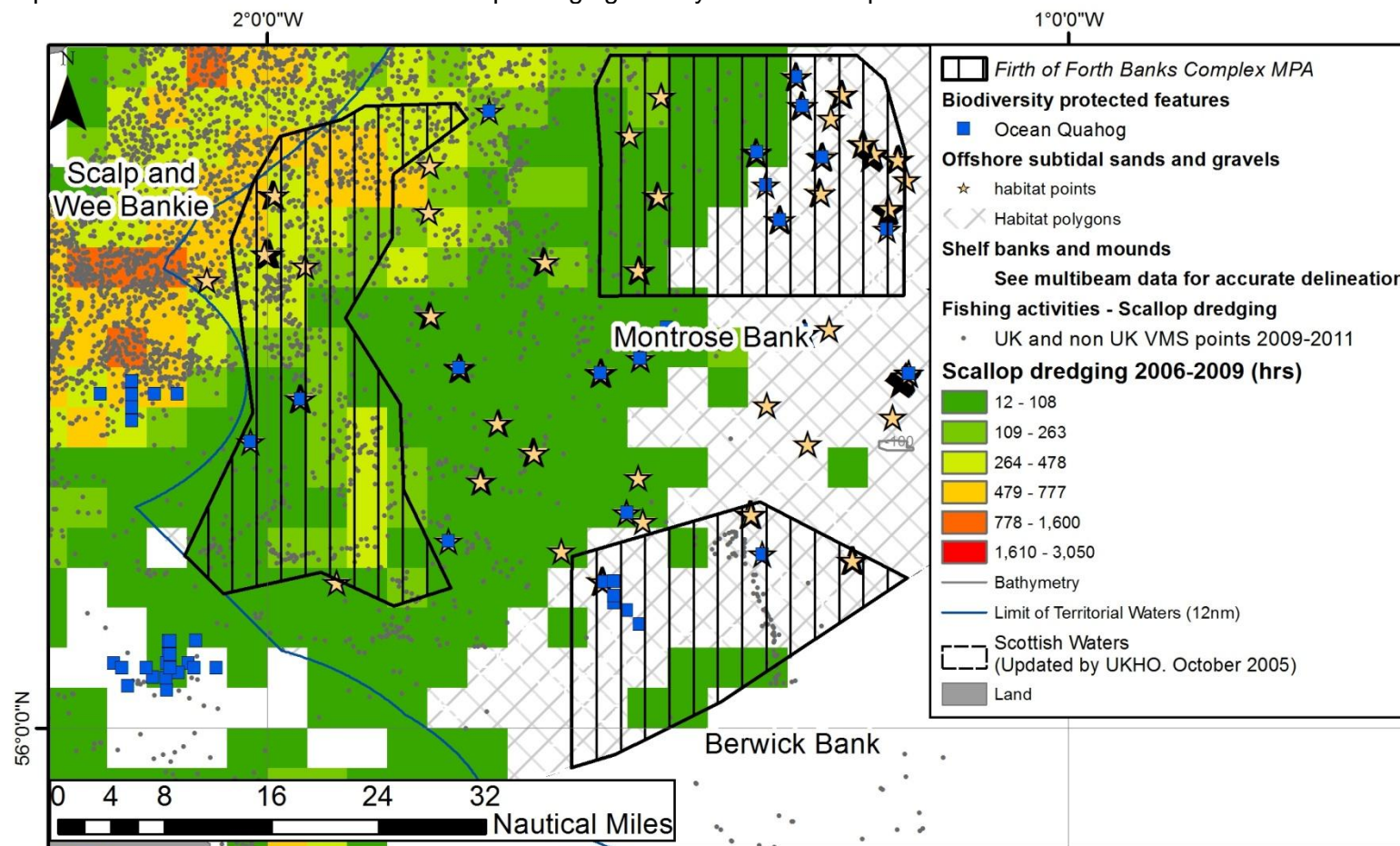
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Map 4: Location of over 15m vessel scallop dredging activity in relation to protected features



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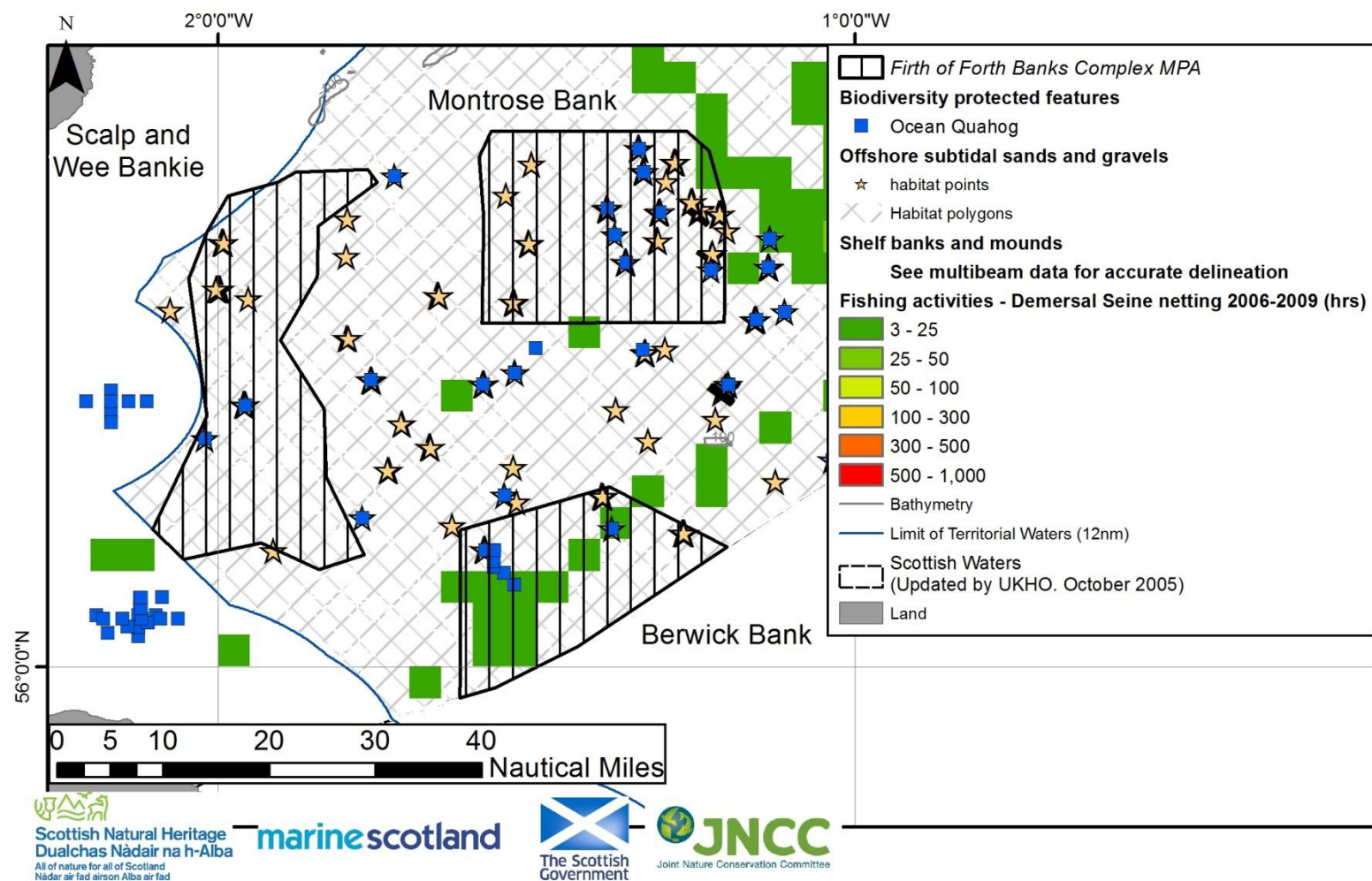
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Map 5: Location of over 15m vessel demersal seine netting activity in relation to protected features



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7.1.2 Fishing activity: Static gear

Creeling and potting

There is good anecdotal evidence of an under-15m vessel creel fishery active in all three components of the Firth of Forth Banks Complex MPA, although it is likely that the majority of effort is concentrated on the Wee Bankie. In providing advice on management options for static gear fishing activities, the focus has been on what we know about the sensitivities of the protected features to this type of fishing activity i.e. the geographic overlap between features and fishing activities has not been assessed. This is because the information available on fishing activity of under-15m vessels within and adjacent to the Firth of Forth Banks MPA is limited. Discussions with those involved with fishing within or adjacent to the MPA will help improve understanding of the interactions between different gear types and the protected features.

Management Options Bottom contact towed gear: (e.g. creeling and potting)	No additional management: It is unlikely that any additional management of creeling and potting activities will be required, as the risk of not achieving the conservation objectives for ocean quahog aggregations and offshore subtidal sands and gravels associated with these activities is minimal. However, if static gear fishing intensity increased or monitoring showed evidence of detrimental effects, it may be necessary to apply limits in the future.
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7.2 Licensed Activities

Marine Scotland Licensing Operations Team (MS-LOT), as the regulator for renewable energy operations in Scotland's seas, would be responsible for making the decision as to whether a proposed activity and/or development is capable of affecting (other than insignificantly)² the protected features of a Nature Conservation MPA.

For those activities and/or developments that MS-LOT considers require an EIA, JNCC is willing to engage at an early stage with MS-LOT and the developer to discuss the specific details of the proposed operation and/or development and offer advice on any potential effects on the protected features of the MPA. 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 advice. Early engagement will facilitate discussions on the information required to advise on possible implications of 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 development 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 renewables activity within Nature Conservation MPAs is included in the [MPA Management Handbook](#).

7.2.1. Renewable energy activity

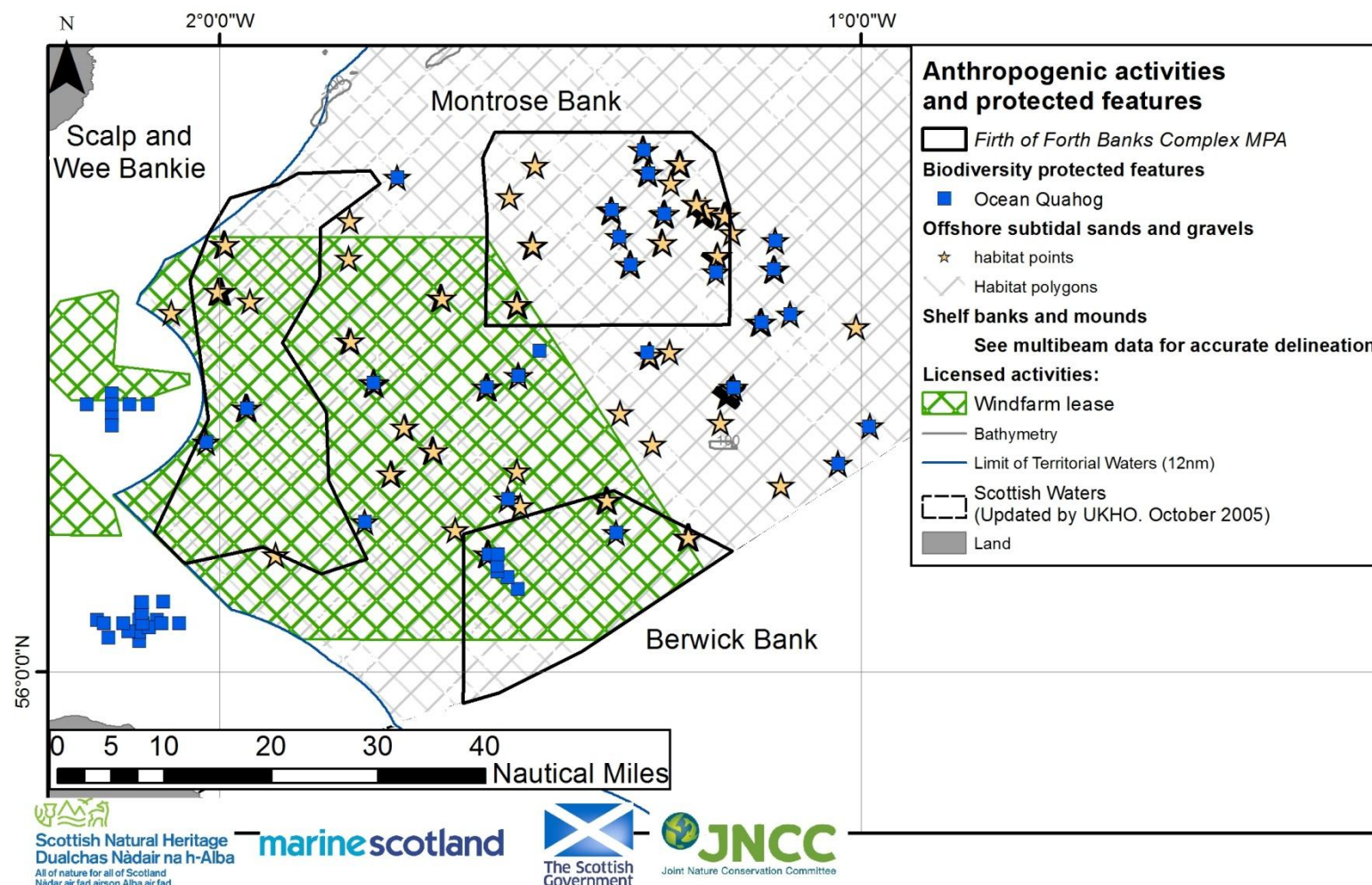
The MPA overlaps with a Round 3 Licence Area for offshore wind development, as shown in Map 6. All three phases of the project have been scoped and the developer submitted an application for Phase 1 of the development in October 2012. If consented, construction is planned to start in 2015.

Management Options

Renewable energy activity:

The potential impacts of renewable energy 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 Marine Scotland and JNCC would help identify and resolve any issues at an early stage.

Map 6: Location of Round 3 Wind Farm Licence Area in relation to protected features



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7.3 Ministry of Defence activity

A Ministry of Defence (MOD) Military Practice Area overlaps with a small part of the southern side of the Wee Bankie and the western side of the Berwick Bank component of the MPA (see Map 7). Although 2010 data on military activities within Military Practice Areas suggests seabed, surface and sub-surface activities occurred in the region, discussion with the Ministry of Defence suggests this area is primarily used for surface activities such as vessel transiting that is unlikely to interact with the protected features. The MOD will incorporate Nature Conservation MPAs into their Environmental Protection Guidelines (Maritime) of their Marine Environmental and Sustainability Assessment Tool, and will use these guidelines to manage their activities in a way that will not affect the features achieving their conservation objectives.

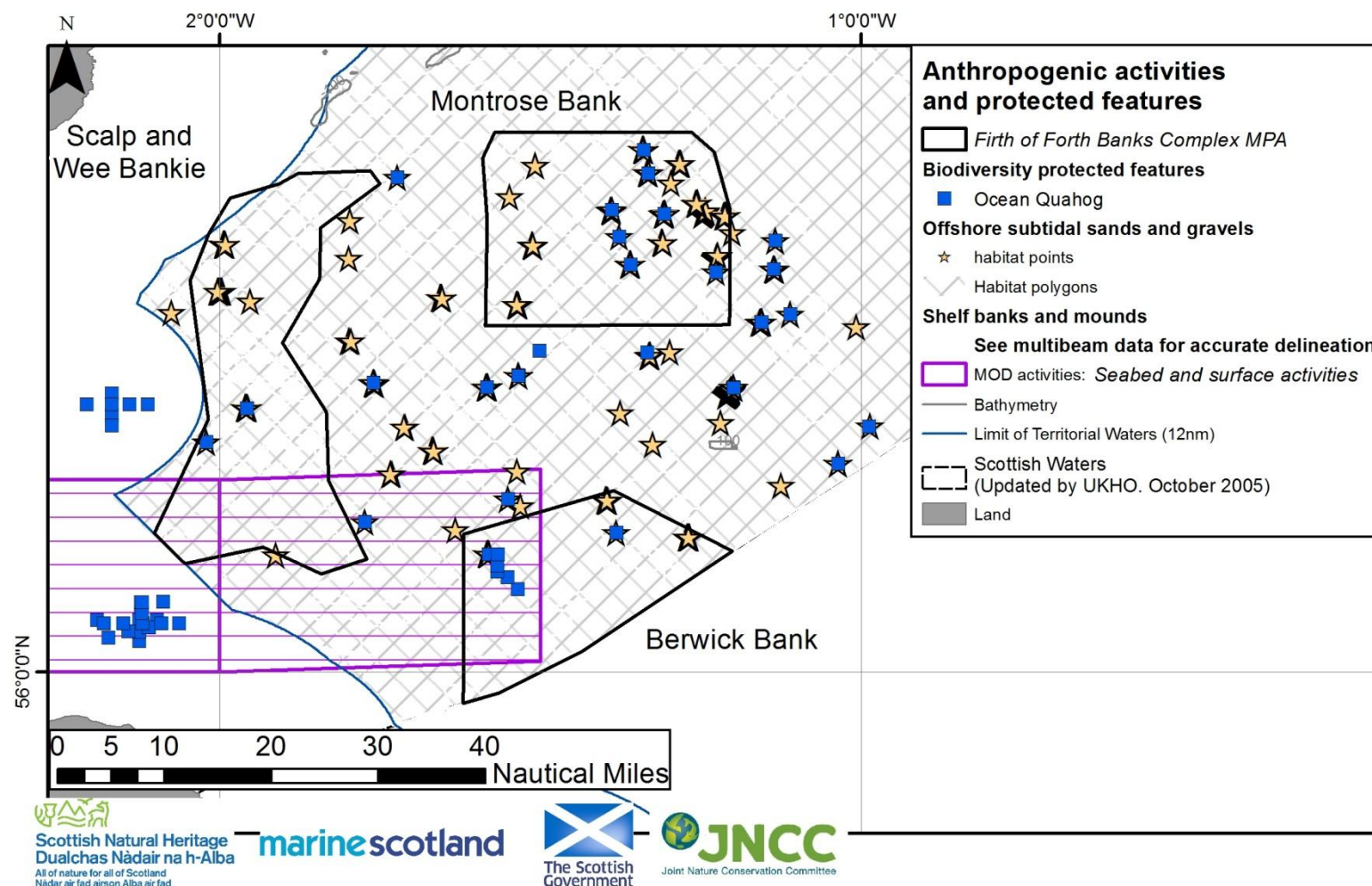
Management options

Military activity:

(e.g. practice areas)

Military activity is unlikely to interact with the protected features and JNCC consider that no additional management is required. Should seabed activities occur in future, JNCC anticipate that management will be coordinated through the Ministry of Defence Environmental Protection Guidelines.

Map 7: Location of the MOD practice area in relation to protected features



8 Conclusions and further recommendations

Marine Scotland will make recommendations to Scottish Ministers on any management measures that may be required for the protected features to achieve their conservation objectives. Any such measures will be developed through discussion with stakeholders following MPA designation. 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 and the Nature Conservation MPA is located where Scottish Ministers do not have exclusive competence, then the intention is that an application will be made for measures using the mechanisms of the 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 Firth of Forth Banks Complex MPA are also available at www.jncc.defra.gov.uk/page-6480:

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