

**Nature Conservation Marine Protected Areas
Fisheries Management Options Paper**

WEST SHETLAND SHELF MPA

This is a working draft which has been produced to support early discussions with stakeholders about management.

Table 1. Management options summary

Fishing activity	Management options
All mobile bottom contact gears	<p>Option 1: No additional management Mobile gear fisheries within the MPA are currently restricted under Common Fisheries Policy regulations due to overlap with an area (known as the “Windsock”). However, as the regulations were designed to facilitate cod recovery the restrictions imposed do not apply to all mobile demersal gears and thus there is a risk of not achieving the conservation objective for offshore subtidal sands and gravels.</p> <p>Option 2: Reduce/limit pressures This option would reduce, but not entirely eliminate, the risk of not achieving the conservation objective for offshore subtidal sands and gravels. Appropriate management could include a zoned approach, where management measures would apply to all (not just trawl and seine) potentially impacting gears to protect a proportion of the feature representing the full diversity of sand and gravel habitats across the site. 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>Option 3: Remove/avoid pressures This option would minimise the risk of not achieving the conservation objectives for offshore subtidal sands and gravels to the lowest possible levels. This is likely to include restrictions on gears that could impact the feature, such as otter trawling and scallop dredging.</p>
All static bottom contact gears	<p>Option 1: 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 objective for offshore subtidal sands and gravels associated with these activities is minimal. However, if static gear fishing activities were to increase or monitoring showed evidence of detrimental effects, it may be necessary to apply limits in the future.</p>

1. Introduction

The purpose of this document is to support discussion of fisheries management options for the West Shetland Shelf Nature Conservation Marine Protected Area (MPA). The MPA is located in offshore waters to the north of Scotland (see figure 1). The MPA overlaps with an area (known as the Windsock) closed to bottom contacting mobile gears under Common Fisheries Policy regulations for cod recovery. A diverse range of sand and gravel habitats are present within the MPA (see figure 2), providing important examples of the feature within the northern extent of their range on the continental shelf in Scotland’s seas. The area of the West Shetland Shelf MPA is approximately 4,083 km².

Although a relatively common habitat in Scotland seas, the range of different types of sand and gravel habitats present within the MPA support a particularly rich diversity of wildlife. On the surface anemones, cup sponges ([Axinella infundibuloformis](#)) and several types of crustaceans including hermit crabs and squat lobster ([Munida rugosa](#)) can be found living between small rocks, whilst urchins and starfish (such as [Porania pulvillus](#) and [Asterias](#)

[rubens](#)) are typical fauna living on the surface of the sandier sediments. Bryozoans and encrusting sponges are often found growing on the surface of cobbles and pebbles. Sea snails, bivalves (shellfish with a pair of shells) such as scallops, keel worms and sand mason worms ([Lanice conchilega](#)) are adapted to living buried in the sand to avoid passing predators.

2. Protected feature and conservation objective

The West Shetland Shelf MPA has been designated for the following protected feature:

- Offshore subtidal sands and gravels

Conservation objectives set out the desired quality of the protected features within each Nature Conservation MPA. The conservation objective for the feature in the West Shetland Shelf is:

Subject to natural change, **conserve the offshore subtidal sand and gravel feature in favourable condition**, such that:

- its extent is stable or increasing; and
- its structures and functions, its quality, and the composition of its characteristic biological communities are such as to ensure that it is in a condition which is healthy and not deteriorating.

More information regarding the Designation Order for the West Shetland Shelf MPA is available in the [Designation Order](#).

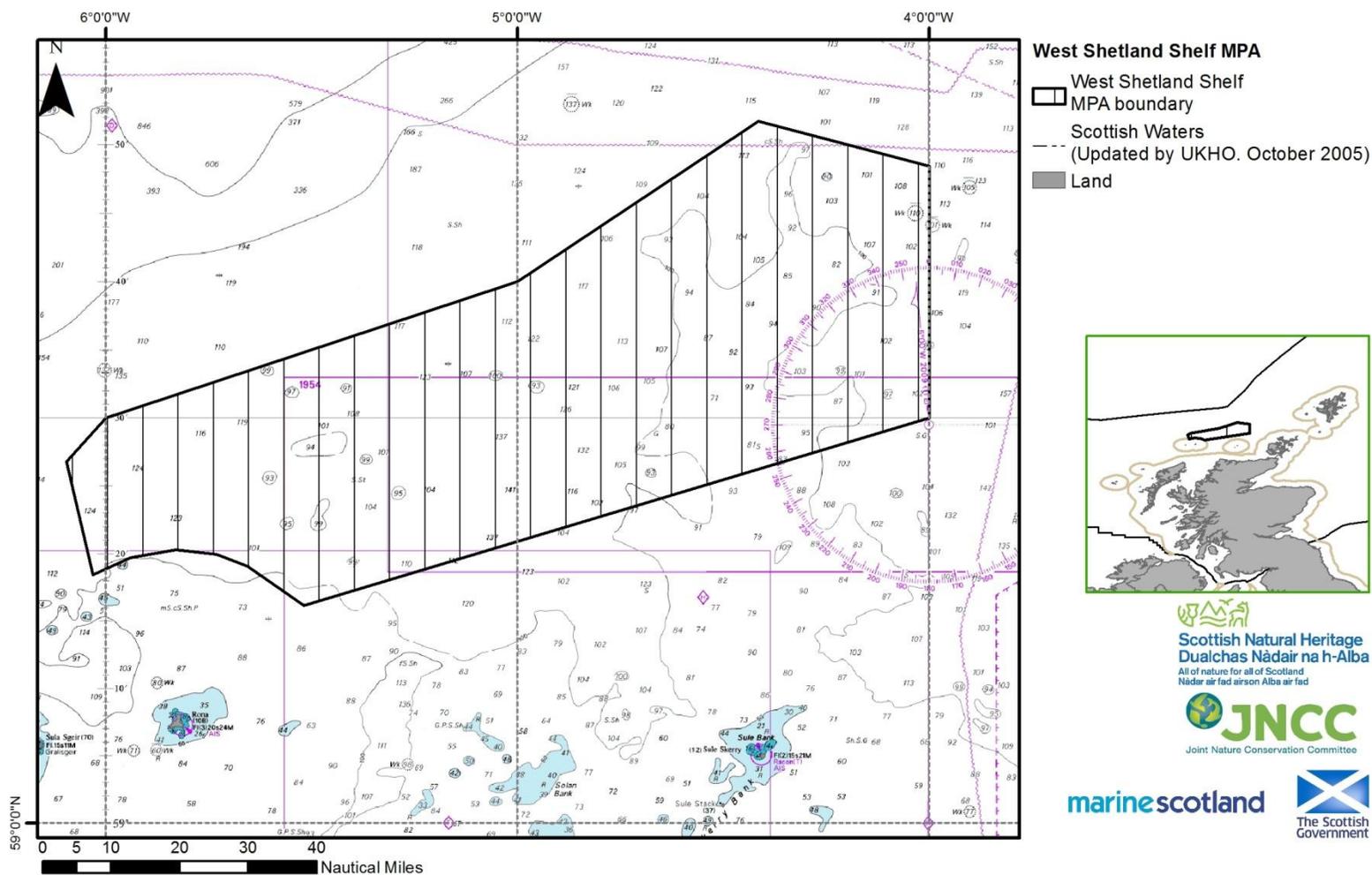
3. Roles

The role of JNCC is to advise the Scottish Government on management options for the West Shetland Shelf MPA. In doing this, JNCC aim to ensure that the conservation objective for the protected feature is met. Fisheries management in areas outside the UK's 12 nautical miles fisheries limit is an exclusive competence of the European Union and management can only be implemented through the provisions of the Common Fisheries Policy (CFP).

Marine Scotland will lead discussions on management with stakeholders. They will consider JNCC's advice and will lead on the development of specific management measures. They will be responsible for making recommendations to Scottish Ministers on these measures and the submission of potential measures to the European Commission.

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

Figure 1. West Shetland Shelf MPA site map

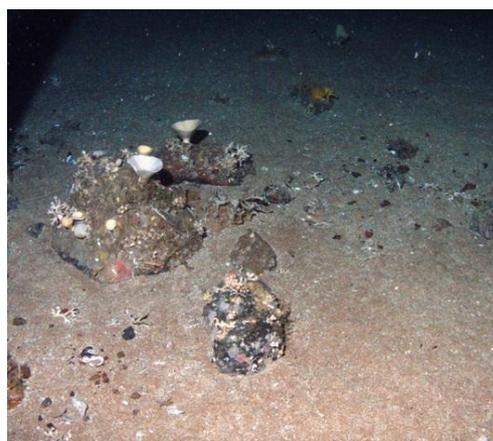


Map projected in Mercator (World) projection. The exact limits of the UK Continental Shelf are set out in the Continental Shelf (Designation of Areas) Order 2013, Statutory Instrument 2013/3162 (© Crown Copyright). Landmass Ordnance Survey © Crown Copyright and database right 2011. All rights reserved. Scotland (Adjacent waters) Updated by the Law of the Sea Division, United Kingdom Hydrographic Office October 2005. Bathymetry © GEBCO, 2011. MPA © JNCC and SNH 2014. All rights reserved. Admiralty Chart © Crown Copyright/UKHO, 2013 Chart is not to be used for navigation.

Figure 2. Examples of protected feature within the West Shetland Shelf MPA



A diversity of sand and gravel habitats are present within the MPA © JNCC & Marine Scotland Science



Sponges on boulders © JNCC & Marine Scotland Science

4. Effects of fishing on the features

JNCC have prepared feature specific fisheries management guidance¹ providing advice on the impact various fishing activities may have on features in Scotland's seas. Further information regarding the sensitivity of the protected features to fishing activity is provided within the [Feature Activity Sensitivity Tool](#) (FeAST).

4.1 Mobile bottom contact gear

In general, the impact of mobile bottom contact gear on **sand and gravel** sediments is relatively well understood. In high energy locations (i.e. of wave and/or tide exposed) the associated fauna tend to be well adapted to disturbance and as a result are more tolerant of fishing-related disturbance (Dernie et al., 2003; Hiddink et al., 2006). In lower energy locations, such as muddy sands and sand in deep water, sediments tend to be more stable and their associated fauna less tolerant of disturbance (Kaiser et al., 2006; Hiddink et al., 2006). Stable gravels often support a 'turf' of fragile species which are easily damaged by trawling and recover slowly (Collie et al., 2005; Foden et al., 2010). Trawling and dredging tend to cause increased mortality of fragile and long lived species and favour opportunistic, disturbance-tolerant species (Bergman and Van Santbrink, 2000; Eleftheriou and Robertson, 1992). Some particularly sensitive species may disappear entirely (Bergman and Van Santbrink, 2000). We cannot be certain regarding the sensitivity of the protected feature across the full extent of the site. However, there is a possibility that exposure to bottom contacting gears may result in some degree of modification relative to the un-impacted state (Bergman and Van Santbrink, 2000; Kaiser et al., 2006).

4.2 Static bottom contact gear

The protected feature within the site is not considered sensitive to static gear activity. 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). Sensitivity to low intensity potting is considered low (Hall *et al.*, 2008).

¹ <http://jncc.defra.gov.uk/page-6498>

5. Development of management options

A range of options are available to managers, which differ in the degree of restriction they would place on fishing operations and the risk they would pose to the achievement of the conservation objectives. Three broad categories of possible management are considered below and further elaborated in Tables 3 and 4.

For each of these broad management categories, we have evaluated the level of risk posed to the achievement of the conservation objectives. It is not generally possible to quantify the degree of risk posed by each management option; however we have indicated in Tables 3 and 4, where we consider that a risk exists, where it would be 'significant', and where it would be reduced by application of management. In most cases we have not recommended a single preferred option but would advise that fisheries managers and stakeholders consider the identified levels of risk when further developing management options.

Risks were evaluated using existing data and information on protected features and relevant activities, and also our understanding of the relationships between the feature and relevant activities. Our identification of the risk has been refined using available information on the interaction between the features and activities where this is available (see section 4). The text focuses on interactions in terms of physical overlap but the assessment of risk in future should also take account of the intensity and frequency of activities within the NCMPA.

A gradient of management options has been considered. These have been described under three potential management option categories:

- a) **No additional management** - where fisheries managers choose to apply no additional site specific fisheries management within the site
- b) **Additional management to reduce pressures** – where fisheries managers may wish to consider a range of measures that could be used to reduce the risk to features by managing fishing activity. These could include:
 - Area restrictions (permanently closing some or all of the feature's area)
 - Gear restrictions (e.g. restricting use of the more damaging gears)

Ideally, any measures would generally apply only to the parts of the sites where the feature is present. However, there may be some circumstances in which 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.

In situations where there is high uncertainty regarding the impacts of fishing on the features, these management measures could be "adaptive" i.e. changes in the features' condition following introduction of managing measures will be monitored and future management may be modified accordingly.

- c) **Additional management to remove pressures** – where fishing activities known to adversely affect the feature would be excluded. Such exclusion would generally apply only to the parts of the sites where the feature is present, although it may occasionally be necessary to apply them to a wider area.

We recognise that stakeholders can provide local environmental knowledge and more detailed information on activities, including distribution and intensity of effort, frequency of

activity, and fishing methods employed. This additional information will help us to develop more specific management options, focused on interactions between features and activities.

6. Overview of activities

Table 2. Overview of fishing activities with the potential to take place within or close to the West Shetland Shelf NCMPA

Activities considered capable of affecting the protected features	Activities <i>not</i> considered capable of affecting the protected features
Fishing activities: <ul style="list-style-type: none"> • Creeling and potting • Otter trawling (not currently active) • Scallop dredging (not currently active) • Demersal seine netting (not currently active) 	Fishing activities: <ul style="list-style-type: none"> • Pelagic trawling and purse seining

7. Management options

Table 3: Management options for mobile bottom contact gear

Management option	Risk to achieving the conservation objectives
Option 1: No additional management	Mobile gear fisheries within the MPA are currently restricted under Common Fisheries Policy regulations due to overlap with an area (known as the “Windsock”). However, as the regulations were designed to facilitate cod recovery the restrictions imposed do not apply to all mobile demersal gears and thus there is a risk of not achieving the conservation objective for offshore subtidal sands and gravels .
Option 2: Reduce/limit pressures	This option would reduce, but not entirely eliminate, the risk of not achieving the conservation objective for offshore subtidal sands and gravels . Appropriate management could include a zoned approach, where management measures would apply to all (not just trawl and seine) potentially impacting gears to protect a proportion of the feature representing the full diversity of sand and gravel habitats across the site. 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.
Option 3: Remove/avoid pressures	This option would minimise the risk of not achieving the conservation objectives for offshore subtidal sands and gravels to the lowest possible levels. This is likely to include restrictions on gears that could impact the feature, such as otter trawling and scallop dredging.

Table 4: Management options for static bottom contact gear:

Management option	Risk to achieving the conservation objectives
Option 1: 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 objective for offshore subtidal sands and gravels associated with these activities is minimal. However, if static gear fishing activities were to increase or monitoring showed evidence of detrimental effects, it may be necessary to apply limits in the future.

8. Conclusions

Fisheries management measures for the West Shetland Shelf MPA will be developed through discussion with stakeholders. Discussions will focus on our understanding of the features and the likely risks to the designated features where there are interactions with fishing activities. Based on the options presented here, it is hoped that a preferred set of management measures can be developed. This will form the basis of management measure proposals to be submitted to the EU under the Common Fisheries Policy.

9. Further information

The following documents relevant to the West Shetland Shelf MPA are available:

- The Site Summary Document, Detailed Assessment against the MPA Selection Guidelines, Data Confidence Assessment and Management Options Paper are all available on the West Shetland Shelf page on the JNCC website: <http://jncc.defra.gov.uk/page-6491>
- Offshore subtidal sands and gravels Fisheries Management Guidance document – http://jncc.defra.gov.uk/pdf/SMPA_fisheries_management_guidance_offshore_subtidal_sand_and_gravels_July2013.pdf

10. References

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Hiddink, JG, Jennings, S, Kaiser, M. J, Queirós, AM, Duplisea, DE and Piet, G. J (2006) Cumulative impacts of seabed trawl disturbance on benthic biomass, production, and species richness in different habitats. *Canadian Journal of Fisheries and Aquatic Sciences*, 63 (4). pp. 721-736. ISSN 0706-652X.

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