Conservation Objectives and Management Advice for The Barra Fan and Hebrides Terrace Seamount Nature Conservation MPA

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JNCC

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What the conservation advice package includes

The information provided in this document sets out:

- The conservation objectives for the protected features of the site;
- The conservation benefits which the site can provide if managed effectively;
- JNCC's current view of protected feature condition; and
- The conservation measures that JNCC consider are required to support achievement of the site's conservation objectives.

This document forms part of JNCC's formal conservation advice package for the site and must be read in conjunction with:

- **Background document** explaining where to find the advice package, JNCC's role in the provision of conservation advice, how the advice has been prepared, when to refer to it and how it can be applied;
- **Supplementary Advice on Conservation Objectives** (SACO) providing more detailed and site-specific information on the conservation objectives of the protected features of the site; and
- **Advice on Operations** providing information on those human activities that, if taking place within or near to the site, could impact it and hinder the achievement of the conservation objectives stated for the site.

The most up-to-date conservation advice package for this site can be downloaded from the conservation advice section of the Site Information Centre on JNCC's website.

Conservation objectives

This site has been designated to protect; burrowed mud, offshore subtidal sands and gravels, offshore deep-sea muds, and seamount communities habitats, the mobile species orange roughy, the large scale features: continental slope and seamounts, the geomorphological features: Quaternary of Scotland – iceberg ploughmark field, prograding wedges, Submarine Mass Movement – continental slope turbidite canyons, slide deposits, Marine Geomorphology of the Scottish Deep Ocean Bed – scout moat and the geological feature Cenozoic Structures of the Atlantic Margin – continental slope, Hebrides Terrace Seamount.

The biodiversity features listed above are Priority Marine Features (PMFs) in Scotland's seas. Additionally seamounts , orange roughy and burrowed mud (including sea pen & burrowing megafauna) are included on the OSPAR list of Threatened and/or Declining Habitats & Species across the North-east Atlantic.

The conservation objectives for The Barra Fan and Hebrides Terrace Seamount Nature Conservation MPA are set out in the 2014 Designation Order and say that

the protected features:

- *so far as already in favourable condition, remain in such condition; and*
- *so far as not already in favourable condition, be brought into such condition, and remain in such condition and*

With respect to the ***burrowed mud, offshore subtidal sands and gravels, offshore deep-sea muds and seamount communities*** *within the site, this means that their:*

- *extent is stable or increasing; and*
- *structures and functions, quality, and the composition of characteristic biological communities (which includes a reference to the diversity and abundance of species of flora and fauna forming part of or inhabiting the habitats) are such as to ensure that they are in a condition which is healthy and not deteriorating.*

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

With respect to the ***orange roughy*** *within the site, this means that the quality and quantity of its habitat and the composition of its population in terms of number, age and sex ratio are such as to ensure that the population is maintained in numbers which enable it to thrive.*

Any temporary reduction of numbers is to be disregarded if the population is thriving and sufficiently resilient to enable recovery from such reduction. Any alteration brought about entirely by natural processes is to be disregarded.

With respect to the ***continental slope*** *and* ***seamounts*** *within the site, this means that their:*

- *extent, distribution and structure is maintained;*
- *function is maintained so as to ensure that they continue to support their characteristic biological communities (including the diversity of any species associated with the features) and use of the site for, but not restricted to, feeding, courtship, spawning, or use as nursery grounds; and*
- *processes supporting the features are maintained*

Any alteration brought about entirely by natural processes is to be disregarded.

With respect to the ***Quaternary of Scotland*** *-* ***iceberg ploughmark field, prograding wedges, Submarine Mass Movement – continental slope turbidite canyons, slide deposits***, ***Marine Geomorphology of the Scottish Deep Ocean Bed*** *–* ***scour moat,***

Cenozoic Structures of the Atlantic Margin – continental slope, Hebrides Terrace Seamount *within the site, this means that:*

a) *extent, component elements and integrity are maintained;*
b) *structure and functioning are unimpaired; and*
c) *surface remains sufficiently unobscured for the purposes of determining whether the criteria in paragraphs (a) and (b) are satisfied.*

Any obscuring or alteration brought about entirely by natural processes is to be disregarded.

Conservation benefits

Conserving or recovering the protected features of the site at or to favourable condition, will contribute to delivering:

- Strategic objectives and policies within Scotland's National Marine Plan, particularly 5 (climate change) and 9 (natural heritage);
- Scottish Biodiversity Strategy's Big Step 6 (Marine and coastal ecosystems restored) Priority Project 12 (Increase environmental status of our seas);
- A network of MPAs around the UK, as outlined under the UK Marine & Coastal Access Act (2009) (Section 123) of relevance to Scotland;
- An ecologically coherent network of MPAs which are well managed under the Convention for the Protection of the Marine Environment of the North-east Atlantic OSPAR Convention , specifically OSPAR Region V: Wider Atlantic;
- Good Environmental Status under the UK Marine Strategy; and
- Target 3 of The Kunming-Montreal Global Biodiversity Framework, known as the 30by30 target is a global commitment to effectively conserve and manage by 2030 at least 30% of terrestrial and inland water areas, and of marine and coastal areas through an ecologically representative, well-connected and equitably governed systems of protected areas and other effective areas-based conservation measures.

The Barra Fan and Hebrides Terrace Seamount Nature Conservation MPA has been designated to protect the following features: burrowed mud, offshore subtidal sands and gravels, offshore deep-sea muds and seamount communities habitats, orange roughy, large scale feature: continental slope and seamounts, geomorphological features: Quaternary of Scotland – iceberg ploughmark field, prograding wedges, Submarine Mass Movement – continental slope turbidite canyons, slide deposits, Marine Geomorphology of the Scottish Deep Ocean Bed – scour moat and the geological feature Cenozoic Structures of the Atlantic Margin – continental slope, Hebrides Terrace Seamount.

This site provides conservation benefits to the wider marine environment and society by affording protection to a range of broad-scale habitats and their associated biological communities and a named species. Consequently, the provision of the following ecosystem services:

Orange roughy

- Nutrition: Providing food for a broad range of fish and marine mammals and supporting the wider orange roughy population as a commercial fish species;
- Provision of recruits: The protection of orange roughy within the site will help the wider stock to recover from severe decline; and
- Whale watching: orange roughy provide a food source for toothed whales in the wider marine environment.

Sedimentary seabed habitats (burrowed mud, offshore deep-sea muds and offshore subtidal sands and gravels)

- Nutrition: Different sediment types offer habitat for breeding and feeding for various commercial species, which in turn are prey for larger marine species, including birds and mammals;
- Bird and whale watching: Foraging seals, cetaceans and seabirds may also be found in greater numbers near some Subtidal sedimentary habitats due to the common occurrence of prey for the birds and mammals;
- Climate regulation: Providing a long-term sink for carbon within sedimentary habitats.

Seamount communities

- Nutrition: Coral habitats are potentially an important link in the flow of carbon between the pelagic and benthic environment. Cold-water coral species secrete mucus which becomes a source of dissolved and particulate organic matter for the ecosystem. Sponge species can feed on this and it is incorporated into sponge detritus, which is then consumed by higher trophic levels. This may serve to increase the availability of prey species to predators through enhancement of biological diversity, potentially providing refugia from predators, locations to lay eggs or nurseries for fish species. There is some evidence that the abundance of certain commercial fish species is higher within coral habitats compared to noncoral habitats.
- Climate regulation: Dead coral skeletons are a long-term store of carbon, although the coral calcification process emits CO2. Ocean acidification is expected to corrode the skeletons of dead deep-water scleractinian corals although cold-water coral reefs shallower than ~ 150 m, are expected to escape corrosion as they will remain above the aragonite saturation horizon.
- Provision of recruits: The larvae of corals have a planktonic phase giving the potential for long distance dispersal. A coral habitat can create a supply of recruits to establish new or help maintain existing coral habitats elsewhere.

- Provision of biochemical and biotechnological products: Chemicals extracted from corals have been shown to have applications in the pharmaceutical industry.

Managing activities to conserve the protected features at, or recover them to, favourable condition, will support provision of ecosystem services and help fulfil the policy and legal obligations listed above.

Protected Feature Condition

Table 1. JNCC's view on the condition of the protected features in the site.Table 1 below sets out JNCC's view on the condition of the site's protected features. This view is based on JNCC's assessment of protected feature condition using best available information at the time of writing and which is summarised in the SACO available from the conservation advice section of the Site Information Centre on JNCC's website. The SACO sets out our understanding of the condition of a feature's attributes as listed in the conservation objective for the site.

In summary, a protected feature is in unfavourable condition either where evidence indicates one or more of its attributes need to be recovered. Conversely, a protected feature is in favourable condition where evidence indicates none of the attributes are being adversely affected.

Table 1. JNCC's view on the condition of the protected features in the site.

Protected feature	View of condition and protected feature objective
Burrowed mud	Unfavourable, recover to favourable condition
Seamount communities	Unfavourable, recover to favourable condition
Offshore deep sea muds	Unfavourable, recover to favourable condition
Offshore subtidal sands and gravels	Unfavourable, recover to favourable condition
Orange roughy	Unfavourable, recover to favourable condition
Continental slope	Favourable, conserve in favourable condition
Seamounts	Favourable, conserve in favourable condition
Quaternary of Scotland – iceberg ploughmark field, prograding wedges	Favourable, conserve in favourable condition
Submarine Mass Movement – continental slope turbidite canyons, slide deposits	Favourable, conserve in favourable condition
Marine Geomorphology of the Scottish Deep Ocean Bed – scour moat	Favourable, conserve in favourable condition

Cenozoic Structures of the Atlantic Margin – continental slope, Hebrides Terrace Seamount	Favourable, conserve in favourable condition

The conservation measures listed below set out JNCC's advice regarding management which should be implemented to conserve the protected features of the site in favourable condition or where needed, recover then to favourable condition.

Conservation measures

Based on JNCC's understanding of the pressures associated with human activities taking place within, or in close proximity to the site and the sensitivity of the protected features to those pressures, we conclude that the protected features of the site; burrowed mud, seamount communities, offshore deep sea muds, offshore subtidal sands and gravels and orange roughy need to be recovered to favourable condition.

JNCC advise the following conservation measures are adopted to support their recovery to favourable condition and reduce the risk of the site not achieving its conservation objectives to the lowest possible level:

- **No new licensable activities** capable of impacting (either directly or indirectly) the protected features; burrowed mud, seamount communities, offshore deep sea muds, offshore subtidal sands and gravels and orange roughy or hindering their recovery, **should be permitted**.

- For **orange roughy**, note this includes activities capable of impacting the protected feature's **supporting habitat** which is characterised within the site as rough substrate at depths of 700-1400m and topographic features like pinnacles, canyons, ridges and seamounts and is critical to the protected feature's recovery.

- To also avoid hindering the recovery of the protected features, **variations to existing licenced activities** must seek, as far as is practicable to do so, to **avoid the introduction of additional hard substrata or subsea deposits** in areas where the protected features; burrowed mud, seamount communities, offshore deep sea muds, offshore subtidal sands and gravels and orange roughy are recorded within the site. The impact of variations to existing consented activities, are to be **considered on a case-by-case basis in consultation with JNCC**.

- **Any new activities** whether located within or outwith the site, must look to avoid, or, as far as is practicable to do so, **minimise the introduction of contaminants to ensure compliance with sedimentary and water Environmental Quality Standards** within the site.

- Targeted deep-water fishing of orange roughy no longer occurs within the site and EU Regulations for zero Total Allowable Catch (TAC) have been in place since 2010. As long as this zero TAC remains in place, this should support recovery of the feature within the site and **no additional management is likely to be required for orange roughy**.

- There is a significant risk of not achieving the conservation objectives for the protected features; burrowed mud, seamount communities, offshore deep-sea muds, and offshore subtidal sands and gravels if **mobile bottom contact gears** are not managed within the site to recover them to favourable condition. If the risk of not achieving the site's conservation objectives is to be reduced to the lowest possible level, **all mobile bottom contact gears would need to be removed from where burrowed mud, seamount communities, offshore deep-sea muds, and offshore subtidal sands and gravels are present** within the site.

- Under normal operations, **pelagic gears** are not expected to interact with the protected features and therefore should not present a risk to the achievement of the conservation objectives of the site. **Therefore no additional management of this gear type is advised**.

- It is unlikely that any additional management of **static bottom contact gear** activities will be required to support recovery of the protected features; burrowed mud, offshore deep-sea muds, and offshore subtidal sands and gravel, as the risk of not achieving the conservation objectives for the features associated with these activities is likely to be minimal. Furthermore, static gear activity is not believed to take place within the MPA at the current time; however, if it were to start and monitoring showed evidence of detrimental effects on these features, it **may be necessary to apply limits in the future**.

- While the use of **static bottom contact gears** is not known to be occurring within the site, these gears pose a potential significant risk of not achieving the conservation objectives for **seamount communities** were it to occur. Therefore it is advised that

static bottom contact gear should be prohibited where seamount communities are present within the site.

Based on JNCC's understanding of the pressures associated with human activities taking place within, or in close proximity to the site and the sensitivity of the large scale, geomorphological and geological protected features to those pressures, we conclude that continental slope, seamounts, Quaternary of Scotland – iceberg ploughmark field, prograding wedges, Submarine Mass Movement – continental slope turbidite canyons, slide deposits and Marine Geomorphology of the Scottish Deep Ocean Bed – scour moat and Cenozoic Structures of the Atlantic Margin – continental slope, Hebrides Terrace Seamount need to be conserved in favourable condition.

JNCC advise that the following conservation measures are needed to conserve these protected features in favourable condition and reduce the risk of the site not achieving its conservation objectives to the lowest possible level:

- **No new licensable activities capable of obscuring** these large scale, geomorphological and geological features **or significantly impacting** their extent and physical structure, should be permitted. An impact's significance should consider the spatial scale, duration and the relative geological importance of the area impacted, to the protected feature. Impacts, for example, which are long-lasting or result in loss of the protected feature within the site should be considered significant.

- **Fishing activities** are not considered capable of impacting the conservation status of these large-scale, geomorphological and geological protected features, with the exception of iceberg ploughmarks which are a component of the Quaternary of Scotland – iceberg ploughmark field, prograding wedges geodiversity feature. There is a risk of not achieving the conservation objectives for this protected feature if **mobile bottom contact gears** are not managed within the site to conserve the feature in favourable condition**.** If the risk of not achieving the site's conservation objectives is to be reduced to the lowest possible levels, **all mobile bottom contact gears would need to be removed where iceberg ploughmarks are present within the site.**

More information about how activities can impact the protected/qualifying features can be found in the Advice on Operations for this site which is accessible via the conservation advice section of the Site Information Centre. It provides information on the sensitivity of the

protected features of the site to pressures associated with activities that JNCC consider may conceivably take place within, or in close proximity to, the site. This should be used when undertaking an initial assessment of whether a proposed plan or project (or ongoing activity) may have an impact on the protected features of the site alongside JNCC's Supplementary Advice on Conservation Objectives also available from the conservation advice section of the Site Information Centre.

JNCC can provide additional assistance through our discretionary advice service with assessing the impact of proposed operations on the protected features. For queries regarding this service, please contact OIA@jncc.gov.uk.