

# Supplementary Advice on Conservation Objectives for The Barra Fan and Hebrides Terrace Seamount Nature Conservation MPA

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The information provided in this document sets out JNCC's supplementary advice on the conservation objectives set for **The Barra Fan & Hebrides Terrace Seamount Nature Conservation MPA (NCMPA)**, hereafter referred to as 'the site'. This document forms part of JNCC's formal conservation advice package for the site and must be read in conjunction with all parts of the package as listed below:

- **Background Document** explaining where to find the most up to date version of 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;
- **Conservation Objectives and Management Advice** document setting out the broad ecological aims (conservation objectives) for the site and JNCC's advice on:
  - protected feature condition;
  - conservation benefits that the site can provide if managed effectively; and
  - conservation measures that JNCC consider are required to support achievement of the conservation objectives stated for the site.
- **Advice on Operations** providing information on those human activities that, if taking place within or near the site, can impact it and hinder the achievement of the conservation objectives stated for the site.

The most up-to-date conservation advice package for the site can be downloaded from the [conservation advice section of the Site Information Centre \(SIC\)](#) on JNCC's website.

The advice presented here describes the ecological characteristics or 'attributes' of the site's protected biodiversity features as specified in the site's conservation objectives listed in the [2014 Designation Order](#):

- burrowed mud (including [sea pen & burrowing megafauna](#));
- [offshore subtidal sands and gravels](#);
- [offshore deep-sea muds](#);
- [orange roughy](#); and
- [seamount communities](#).

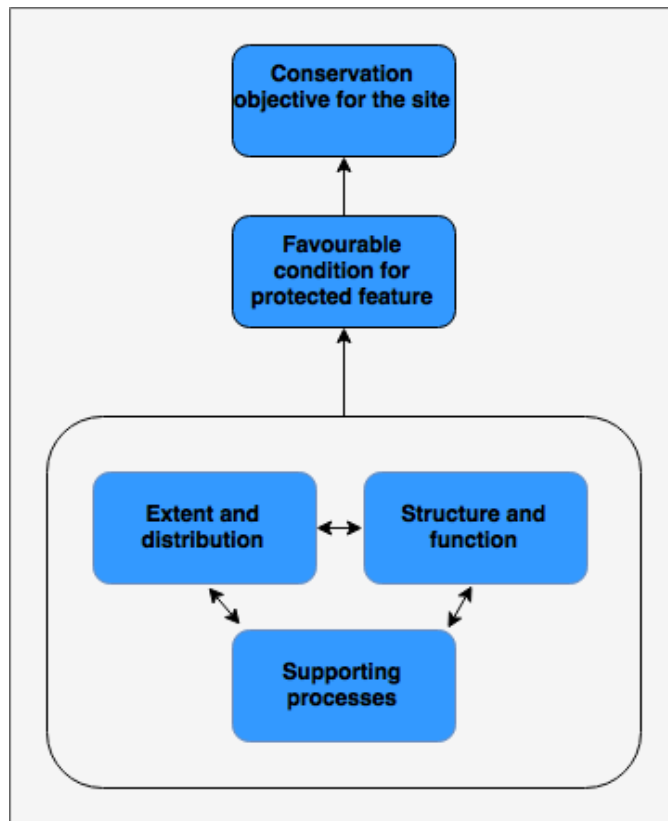
These attributes include extent and distribution, structure and function and supporting processes.

Based on the best available evidence, JNCC do not consider that the activities taking place, or that could conceivably take place, are capable of affecting the continental slope and

seamounts large-scale features. Moreover, achievement of the conservation objectives for the subtidal sedimentary habitats protected within the site is expected to conserve the geological/geomorphological features representative of The Barra Fan and The Peaches Slide Complex key geodiversity areas (Brooks, 2013): 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. Therefore, large-scale features and geological/geomorphological features are not considered further within the scope of this advice.

Figure 1 below illustrates the concept of how a protected feature's attributes are interlinked: with impacts on one potentially having knock-on effects on another e.g. the impairment of any of the supporting processes on which a feature relies can result in changes to its extent and distribution and structure and function.

Collectively, the attributes set out in Table 1 to 4 below, along with the objectives set for each of them, describe the desired ecological condition (favourable) for the site's protected features. All attributes listed in Table 1 to 4 must be taken into consideration when assessing impacts from an activity.



**Figure 1. Conceptual diagram showing how feature attributes are interlinked and collectively describe favourable condition and contribute to the conservation objectives stated for the site.**

In Table 1 and

Table 2 below, the attributes for the sedimentary seabed habitats burrowed mud, offshore deep-sea muds and offshore subtidal sands and gravels are listed. Attributes for seamount communities and orange roughy are listed in Table 1 and Table 4 respectively.

An objective of recover or conserve is set for each protected feature attribute, reflecting our current understanding of available evidence e.g. whether it indicates some of a protected feature's extent is lost and needs to be recovered or that extent is not lost and needs to be conserved to ensure the protected feature is in overall favourable condition. Where a recover objective is advised and there is considerable uncertainty as to whether recovery is possible, this will be noted alongside the objective.

The rationale for setting an objective is provided in the summary of evidence column and supporting references listed in the reference section at the end of this document.

**Note:** when a maintain objective is set, this does not preclude the need for management, now or in the future to ensure a protected feature remains in favourable condition.

**Table 1: Supplementary Advice on Conservation Objectives for the burrowed mud and offshore deep-sea muds protected features of the site**

In summary, the burrowed mud and offshore deep-sea muds protected features of the site are considered to be in unfavourable condition and need to be recovered. This conclusion is driven by evidence that suggests mobile bottom-contacting fishing practices taking place may be impacting upon the structure and function of burrowed mud and offshore deep-sea muds. Whilst a fisheries regulation came into force in 2016 that prohibits all mobile bottom-contacting gear from the site at depths below 800 m, relatively low levels of mobile bottom-contacting fishing still occur in the site in areas above 800 m and may have an impact on the structure and function of burrowed mud and offshore deep-sea muds. Please see the Conservation Objectives and Management Advice document available in the [conservation advice section of the SIC](#) for JNCC's advice on the management of activities which JNCC consider is needed to recover to favourable condition burrowed mud and offshore deep-sea muds within the site.

Further information on activities capable of affecting the protected features of the site can be found in the Advice on Operations workbook available also in the [conservation advice section of the SIC](#).

Attribute	Summary of evidence	View of attribute condition & objective	Confidence in attribute condition
Extent and distribution	<p>The extent and distribution of burrowed mud and offshore deep-sea muds are defined by their sediment composition and biological assemblages. Any changes to sediment composition and/or biological assemblages brought about by human activities may impact the conservation status of the features.</p> <p>Within the site the full extent of the burrowed mud feature is not well understood. Where records of burrowed mud presence have been identified, they overlap with the offshore deep-sea muds feature which extends across a large extent of the site down across the continental slope (Hughes, <i>et al</i>, 2014).</p> <p>Evidence from Vessel Monitoring System (VMS) data indicates that demersal trawling has occurred across the burrowed mud and offshore deep-sea muds features, albeit at relatively low levels. Demersal fishing regulations which came into force in 2016 prevented further bottom towed gear usage across areas of the features in excess of 800 m depth (Regulation (EU) 2016/2336). However, VMS data up to 2020 indicates that the</p>	Favourable - needs to be conserved	<p>Low - JNCC has a baseline understanding of the extent and distribution of the deep-sea mud features, which is derived from multibeam survey, drop camera and Particle Size Analysis (PSA) data derived from survey work taken place within the site (Sotheran <i>et al.</i>, 2014). This has been further integrated with a modelled habitat map that covers the remaining site area that has not been surveyed, as part of a composite predictive habitat mapping product 'EUSeaMap' (EUSeaMap, 2023). Burrowed mud habitat extent is limited and is derived from analysis of photographic stills data (Hughes <i>et al</i>, 2014) and Marine Scotland Science trawl bycatch records (GeMS V10 i27) which met the definitions of this feature (Tyler-Walters <i>et al.</i> 2016).</p>

	<p>demersal trawling continues to occur in the areas of the features that are above 800m.</p> <p>The pressures associated with demersal trawling (abrasion, penetration and removal of non-target species) are not considered capable of impacting the extent and distribution of these sedimentary protected features. JNCC therefore conclude that the extent and distribution of burrowed mud and offshore deep-sea muds has not been impacted by mobile bottom-contacting gear use within the site and advise a conserve objective accordingly.</p>		<p>Evidence for impact is indirect, based on our understanding of the sensitivity of burrowed mud and offshore deep-sea muds and their associated biological communities to pressures associated with human activities known to be taking place in the site; in this case bottom-contacting fishing gear (Tyler-Walters <i>et al.</i>, 2023, FeAST, 2023 and JNCC, 2018).</p> <p>Our information about activities within the site is incomplete e.g. our best available evidence for fishing activities only goes up to 2020. The assessment is also limited by the lack of information about Ministry of Defence activities that could be occurring within the site, as the site overlaps with a Military Practice Area.</p>
<p>Structure and function</p>	<p>The structure and function of burrowed mud and offshore deep-sea muds refers to the physical (finer scale topography, sediment composition) and biological structures (the presence of key and influential species and characteristic communities) of the features themselves.</p> <p>JNCC does not consider that there is sufficient evidence to assess the conservation status of key and influential species and characteristic communities of protected mud features of the site.</p> <p>Evidence from VMS data indicates that demersal trawling has occurred across the burrowed mud and offshore deep-sea muds features, albeit at relatively low levels. Demersal fishing regulations which came into force in 2016 prevented further bottom towed gear usage across areas of the features in excess of 800 m depth (Regulation (EU) 2016/2336). However, VMS records indicate that the demersal trawling continues to occur in the areas of features that are above 800 m. demersal trawling is known to cause pressures such as abrasion, penetration and removal of non-target species.</p>	<p>Unfavourable - needs to be recovered</p>	<p>Same as for extent and distribution above.</p>

	JNCC conclude that the structure and function of burrowed mud and offshore deep-sea muds may have been impacted by mobile bottom contacting gear use within the site. Therefore, JNCC advises a recover objective on this basis.		
Supporting processes	<p>Supporting processes with respect to burrowed mud and offshore deep-sea muds include hydrodynamic regime, water and sediment quality.</p> <p>There is no evidence to suggest that human activities are having an adverse impact on the typical hydrodynamic regime to which the site is exposed.</p> <p>The site is located in the Wider Atlantic region (OSPAR region V) which is assessed as having insufficient data available to examine contaminant status or water and sediment quality (Larson <i>et al.</i>, 2022).</p> <p>Overall, there is no evidence to suggest that supporting processes that operate at this site are being impeded with respect to supporting the conservation status of burrowed mud and offshore deep-sea muds. JNCC advises conserve objective on this basis.</p>	Favourable – needs to be conserved	Low - The evidence-base supporting JNCC's assessment against this attribute draws upon data from the Wider Atlantic (OSPAR Region V) (Larson <i>et al.</i> , 2022) rather than any evidence available from within, or in close proximity to, the site itself. This lack of data pertaining to water and sediment quality within the site limits our assessment. Moreover, there is a lack of time series data about water quality and on how human activities may have impacted this.

**Table 2: Supplementary Advice on Conservation Objectives for the offshore subtidal sands and gravels protected feature of the site**

In summary, the offshore subtidal sands and gravels protected feature of the site is considered to be in unfavourable condition and needs to be recovered. This conclusion is driven by evidence that suggests mobile bottom-contacting fishing practices taking place within the site may have impacted upon the extent and distribution, and structure and function, of offshore subtidal sands and gravels. Whilst a fisheries regulation came into force in 2016 that prohibits all mobile bottom-contacting gear from the site at depths below 800 m, relatively low levels of mobile bottom-contacting fishing still occur in the site in areas above 800 m and may have an impact on the extent and distribution, and structure and function, of offshore subtidal sands and gravels within the site. Please see the Conservation Objectives and Management Advice document available in the [conservation advice section of the SIC](#) for JNCC’s advice on the management of activities which JNCC consider is needed to recover to favourable condition offshore subtidal sands and gravels within the site.

Further information on activities capable of affecting the protected features of the site can be found in the Advice on Operations workbook available also in the [conservation advice section of the SIC](#).

Attribute	Summary of evidence	View of attribute condition & objective	Confidence in attribute condition
Extent and distribution	<p>The extent and distribution of offshore subtidal sands and gravels is defined by its sediment composition and biological assemblages. Any changes to sediment composition and/or biological assemblages brought about by human activities may impact the conservation status of the feature.</p> <p>The offshore subtidal sands and gravels feature extent is focussed in the far eastern portion of the site and also overlaps areas of the Hebrides terrace seamount geodiversity and large-scale feature (Hughes <i>et al</i>, 2014 &amp; Cross <i>et al</i>, 2014).</p> <p>Evidence from VMS data indicates that demersal trawling has occurred across the offshore subtidal sand and gravels feature, albeit at relatively low levels. Demersal fishing regulations which came into force in 2016 prevented further bottom towed gear usage across areas of the feature in excess of 800 m depth (Regulation (EU) 2016/2336). However, VMS records indicate that demersal trawling continues to occur in the eastern extent of the feature above 800 m. Demersal trawling is associated with pressures such as abrasion and removal of non-target species.</p>	Unfavourable - needs to be recovered	<p>Low - JNCC has a baseline understanding of the extent and distribution of the offshore subtidal sands and gravels feature, which is derived from multibeam survey, drop camera and PSA data (Sotheran <i>et al</i>, 2014). This has been further integrated with a modelled habitat map that covers the remaining site area that has not been surveyed, as part of a composite predictive habitat mapping product known as ‘EUSeaMap’ (EUSeaMap, 2023).</p> <p>Evidence for impact is indirect, based on our understanding of the sensitivity of offshore subtidal sands and gravels and its associated biological communities to pressures associated with human activities known to be taking place in the site; in this case bottom-contacting fishing gear (Tyler-</p>

	<p>JNCC conclude that the extent and distribution of subtidal sands and gravels may have been impacted by mobile bottom contacting gear use within the site. Therefore, JNCC advises a recover objective on this basis.</p>		<p>Walters <i>et al.</i>, 2023, FeAST, 2023 and JNCC, 2018).</p> <p>Our information about activities within the site is incomplete e.g. our best available evidence for fishing activities only goes up to 2020. The assessment is also limited by the lack of information about Ministry of Defence activities that could be occurring within the site, as the site overlaps with a Military Practice Area.</p>
Structure and function	<p>The structure and function offshore subtidal sands and gravels refers to the physical structure itself (finer scale topography and sediment composition) and its biological structure (the presence of key and influential species and characteristic communities).</p> <p>JNCC does not consider that there is sufficient evidence to assess the conservation status of key and influential species and characteristic communities of this protected feature of the site. However, JNCC conclude that the structure and function of offshore subtidal sands and gravels may have been impacted by mobile bottom-contacting gear use within the site.</p> <p>Evidence from VMS data indicates that demersal trawling has occurred across the offshore subtidal sands and gravels feature, albeit at relatively low levels. Demersal fishing regulations which came into force in 2016 prevented further bottom towed gear usage across areas of the feature in excess of 800 m depth (Regulation (EU) 2016/2336). However, VMS records indicate that demersal trawling continues to occur in the eastern extent of the feature above 800 m. Demersal trawling is associated with pressures such as abrasion and removal of non-target species.</p> <p>JNCC conclude that the structure and function of offshore subtidal sands and gravels may have been impacted by mobile bottom contacting gear use within the site. Therefore, JNCC advises a recover objective on this basis.</p>	Unfavourable - needs to be recovered	Same as for extent and distribution above.

<p>Supporting processes</p>	<p>Supporting processes with respect to offshore subtidal sands and gravels include hydrodynamic regime, water and sediment quality.</p> <p>There is no evidence to suggest that human activities are having an adverse impact on the typical hydrodynamic regime to which the site is exposed. The site is located in the Wider Atlantic region (OSPAR region V), which is assessed as having insufficient data available to examine contaminant status or water and sediment quality (Larson <i>et al.</i>, 2022).</p> <p>Overall, there is no evidence to suggest that supporting processes that operate at this site are being impeded with respect to supporting the conservation status of subtidal sands and gravels. JNCC advises conserve objective on this basis.</p>	<p>Favourable – needs to be conserved</p>	<p>Low - The evidence-base supporting JNCC's assessment against this attribute draws upon data from the Wider Atlantic (OSPAR Region V) (Larson <i>et al.</i>, 2022) rather than any evidence available from within, or in close proximity to, the site itself. This lack of data pertaining to water and sediment quality within the site limits our assessment. Moreover, there is a lack of time series data about water quality and on how human activities may have impacted this.</p>
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**Table 3: Supplementary Advice on Conservation Objectives for the seamount communities protected feature of the site**

In summary, the seamount communities protected feature of the site is considered to be in unfavourable condition and needs to be recovered. The conclusion is driven by evidence that suggests mobile bottom-contact fishing practices taking place prior to the introduction of fishing regulations may have impacted upon the extent and distribution, and the structure and function, of the seamount communities protected feature of the site. Whilst a fisheries regulation came into force in 2010 that prohibits all mobile bottom-contacting gear from the seamount area of the site, the extent and distribution, and the structure and function, of the seamount communities protected feature will not yet have had sufficient time to recover. Please see the Conservation Objectives and Management Advice document available in the [conservation advice section of the SIC](#) for JNCC’s advice on the management of activities which JNCC consider is needed to recover to favourable condition the seamount communities protected feature within the site.

Further information on activities capable of affecting the protected features of the site can be found in the Advice on Operations workbook available also in the [conservation advice section of the SIC](#).

Attribute	Summary of evidence	View of attribute condition & objective	Confidence in attribute condition
Extent and distribution	<p>The extent and distribution of seamount communities refers to the total area in the site occupied by the biogenic habitat and must include consideration of its distribution, i.e. how it is spread out within the site. A reduction in extent has the potential to alter the biological and physical functioning of biogenic habitats associated with seamount communities.</p> <p>The distribution and extent of community structures across the seamount within the site is complex. These communities are composed of various non-reef forming corals, sponges and bryozoans.</p> <p>Within the site, there is evidence that demersal trawling has historically occurred over the extent of the seamount communities feature. There is direct evidence of historical trawl marks across the feature (Allen, <i>et al</i>, 2014) and evidence from VMS records that demersal trawling was taking place over the protected feature prior to the fisheries regulation coming into force in 2010 prohibiting its use.</p>	<p>Unfavourable - needs to be recovered</p> <p><b>NOTE:</b> Considerable uncertainty over recoverability</p>	<p>Low - JNCC has a baseline understanding of the extent and distribution of the seamount communities feature, which is derived point records from video and still transects along the sides and top of the Hebrides Terrace seamount structure (Cross <i>et al.</i>, 2014 &amp; Allen <i>et al.</i>, 2014), which are underpinned by earlier multibeam surveys over the feature. Survey data also provided supplementary indications of feature condition, with presence of trawl scar marks present in multiple videos taken over the feature (Allen <i>et al.</i>, 2014).</p> <p>Evidence for impact is mainly indirect, based on our understanding of the sensitivity of seamount communities to pressures associated to with human activities known to have taken place in the site; in this case bottom-contacting fishing</p>

	<p>Key fishing pressures of concern acting upon the feature prior to prohibitive regulations included abrasion, penetration, physical change (to another seabed type), removal of non-target species, and smothering and siltation rate changes. Whilst the fisheries regulation came into force in 2010 that prohibits all mobile bottom-contacting gear from the feature, the extent and distribution of the protected feature will not have had sufficient time to recover.</p> <p>Some species and habitats associated with the feature may have begun recovery, but other associated species, such as <i>Solenosmilia variabilis</i> reefs, are known to require more extensive periods of time to recover (up to hundreds of years), which exceeds than the current period of activity cessation (Grave. <i>et al</i>, 2022).</p> <p>JNCC therefore advises a recover objective on this basis.</p>		<p>gear (Tyler-Walters <i>et al.</i>, 2023, FeAST, 2023 and JNCC, 2018).</p> <p>Our information about activities within the site is incomplete e.g. our best available evidence for fishing activities only goes up to 2020. The assessment is also limited by the lack of information about Ministry of Defence activities that could be occurring within the site, as the site overlaps with a Military Practice Area.</p>
Structure and function	<p>The structure and function of seamount communities refers to the physical structure itself (finer scale topography and habitat composition) and its biological structure (the presence of key and influential species, and characteristic communities).</p> <p>Based on the same evidence presented for extent and distribution above, JNCC advise a recover objective.</p>	<p>Unfavourable - needs to be recovered</p> <p><b>NOTE:</b> Considerable uncertainty over recoverability</p>	<p>Same as for extent and distribution above.</p>
Supporting processes	<p>Biogenic habitats, and the communities they support such as seamount communities, rely on a range of natural processes to support function (ecological processes) and help any recovery from adverse impacts.</p> <p>Supporting processes with respect to seamount communities include hydrodynamic regime, physical topography, supporting habitat, water and sediment quality. Physical topography and supporting habitat condition have been reflected in the assessment of extent and distribution, and structure and function, and therefore are not also considered within this assessment against the supporting processes attribute.</p>	<p>Favourable – needs to be conserved</p>	<p>Low - The evidence-base supporting JNCC's assessment against this attribute draws upon data from the Wider Atlantic region (OSPAR region V) (Larson <i>et al.</i>, 2022), rather than any evidence available from within, or in close proximity to, the site itself. This lack of data pertaining to water and sediment quality within the site limits our assessment. Moreover, there is a lack of time series data about water quality and on how human activities may have impacted this.</p>

	<p>There is no evidence to suggest that human activities are having an adverse impact on the typical hydrodynamic regime to which the site is exposed. The site is located in the Wider Atlantic region (OSPAR region V), which is assessed as having insufficient data available to examine contaminant status or water and sediment quality (Larson <i>et al.</i>, 2022).</p> <p>Overall, there is no evidence to suggest that supporting processes that operate at this site are being impeded with respect to supporting the conservation status of seamount communities. JNCC therefore advises a conserve objective on this basis.</p>		
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**Table 4: Supplementary Advice on Conservation Objectives for the *Hoplostethus atlanticus* (Orange roughy) protected feature of the site**

In summary, the orange roughy protected feature is considered to be in unfavourable condition and needs to be recovered. The conclusion is driven by evidence that suggests historical targeted deep-water trawling practices may have impacted upon the extent and distribution, and the structure and function, of the orange roughy protected feature of the site. Following the implementation of a Zero Total Allowable Catch quota for ICES region VI, further targeted fisheries practices no longer occur. However, the extent and distribution, and the structure and function, of the orange roughy protected feature of the site will not yet have had sufficient time to recover. Additionally, low levels of mobile bottom-contacting fishing still persist in areas where orange roughy are considered to occur and may have an impact on the extent and distribution, and the structure and function, of the orange roughy protected feature. Please see the Conservation Objectives and Management Advice document available in the [conservation advice section of the SIC](#) for JNCC’s advice on the management of activities which JNCC consider is needed to recover to favourable condition the orange roughy protected feature within the site.

Further information on activities capable of affecting the protected features of the site can be found in the Advice on Operations workbook available also in the [conservation advice section of the SIC](#).

Attribute	Summary of evidence	View of attribute condition & objective	Confidence in attribute condition
Presence and distribution	<p>The presence and distribution of <i>Hoplostethus atlanticus</i> - orange roughy describes occurrence, with the spatial distribution providing a more detailed overview of the location(s) and pattern of occurrence within a site, both in the water column and at the seabed.</p> <p>The life history characteristics of orange roughy across the North-east Atlantic is not well understood, though it is known that as well as depth, topography also plays an important role in influencing its distribution (Priede, 2019).</p> <p>Orange roughy may use a range of areas within the site, including both the seamount and deeper continental shelf waters for feeding, courtship or spawning purposes, as well as nursery grounds (Gordan &amp; Duncan, 1987). It is important to consider the key life stages and behaviours of a species within a site as this may influence its distribution, which can fluctuate over time and be patchy in nature.</p>	<p>Unfavourable - needs to be recovered.</p> <p><b>NOTE:</b> Considerable uncertainty over recoverability</p>	<p>Low - Species presence and distribution point data are derived from 39 data records within the site via trawl surveys (GeMS V10 i27), along with a regional distribution model (Defra, 2011), which encapsulates the entire site.</p> <p>Evidence for impact is indirect, based on our understanding of the sensitivity of orange roughy to pressures associated to with human activities known to have taken place, or that are still taking place, within the site; in this case historic targeted fishing and bottom-contacting fishing gear – the latter posing a risk via bycatch and the removal of non-target species (Tyler-Walters <i>et al.</i>, 2023, FeAST, 2023 and JNCC, 2018).</p>

	<p>Within the site, targeted deep-water fishing of orange roughy no longer occurs as EU regulations for zero Total Allowable Catch (TAC) have been in place since 2010 (ICES, 2020). The slow recoverability of orange roughy means that it may take many years for populations to return to healthy levels (Priede, 2019).</p> <p>According to VMS data, mobile bottom-contacting fishing has been occurring at a relatively low level across portions of site, within the modelled range of orange roughy. This poses a risk of incidental bycatch of the species</p> <p>JNCC does not consider the presence and distribution of the orange roughy protected feature will have had sufficient time to recover since the zero TAC has been implemented and is still at continued risk of bycatch from wider mobile bottom-contacting gear fishing practices; noting below 800 m depth mobile bottom-contacting fishing gear has been prohibited.</p> <p>JNCC therefore advises a recover objective on this basis.</p>		<p>Our information about activities within the site is incomplete e.g. our best available evidence for fishing activities only goes up to 2020. The assessment is also limited by the lack of information about Ministry of Defence activities that could be occurring within the site, as the site overlaps with a Military Practice Area.</p>
<p>Structure and function (of supporting habitats)</p>	<p>The structure and function of the orange roughy feature refers to areas of seabed which support conservation of the species, such as the presence of topographic features in the site.</p> <p>The life history characteristics of orange roughy across the North-east Atlantic is not very well understood, though it is known that as well as depth, topography also plays an important role in the distribution of orange roughy (Priede, 2019).</p> <p>The species occupies a depth range between 500-1750 m in the Rockall Trough region of the North-east Atlantic, with density varying across deep water habitats (Gordan &amp; Duncan, 1987). Gordan &amp; Duncan (1987) also note that topographic features like pinnacles canyons, ridges, rocks and seamounts are important for feeding and species aggregations, which are consistent with the continental shelf and seamount geomorphic features of the site.</p>	<p>Unfavourable - needs to be recovered</p> <p><b>NOTE:</b> Considerable uncertainty over recoverability</p>	<p>Same as for presence and distribution above.</p>

	<p>Within the site, there is little information available to determine the impacts of human activities on the structure and function of deepwater habitats supporting this protected species in the site. However, JNCC conclude that the structure and function (of supporting habitats) within the site may have been impacted by the historic fishing and ongoing low levels of mobile bottom-contacting gear present in the same depth range as the orange roughy protected feature. JNCC therefore advises recover objective on this basis.</p>		
Supporting processes	<p>Supporting processes with respect to orange roughy include hydrodynamic regime and water quality.</p> <p>There is no evidence to suggest that human activities are having an adverse impact on the typical hydrodynamic regime to which the site is exposed. The site is located in the Wider Atlantic region (OSPAR region V), which is assessed as having insufficient data available to examine contaminant status or water and sediment quality (Larson <i>et al.</i>, 2022). Overall, there is no evidence to suggest that supporting processes that operate at this site are being impeded with respect to supporting the conservation status of orange roughy. JNCC therefore advises a conserve objective on this basis.</p>	Favourable – needs to be conserved	Low - The evidence-base supporting JNCC's assessment against this attribute draws upon data from the Wider Atlantic region (OSPAR region V) (Larson <i>et al.</i> , 2022), rather than any evidence available from within, or in close proximity to, the site itself. This lack of data pertaining to water and sediment quality within the site limits our assessment. Moreover, there is a lack of time series data about water quality and on how human activities may have impacted this.

## References

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