

Marine Management Organisation

MMO Stage 3 Site Assessment: South West Deeps (East) MPA (DRAFT)

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Title: Stage 3 Site Assessment: South West Deeps (East) MPA (Draft) Contents

Con	tents	1
Exe	cutive Summary	1
1	Introduction	2
2	Site information	3
3	Part A - Identified pressures on the MPA	7
4	Part B - Fishing activity assessment	12
5	Part C - In-combination assessment	27
6	Conclusion and proposed management	31
7	Review of this assessment	33
Refe	erences	34
Ann	exes	36

Executive Summary

This assessment analyses the impact of anchored nets and lines, bottom towed gear and traps on the designated features subtidal coarse sediment, subtidal sand and deep-sea bed in South West Deeps (East) Marine Protected Area (MPA) to determine whether a significant risk of hindering the conservation objectives of the site can be excluded. The assessment sets out the evidence considered and analyses the quality of that evidence.

The assessment finds that without further management, there is a significant risk of ongoing use of bottom towed gear on the sand, sediment and deep-sea bed features of South West Deeps (East) MPA hindering the achievement of the conservation objectives of the MPA. MMO will therefore introduce management measures to prohibit the use of bottom towed fishing gears throughout the MPA.

The assessment also finds that there is a significant risk of ongoing use of anchored nets and lines on the deep-sea bed feature hindering the achievement of the conservation objectives of the MPA. MMO will therefore introduce management

measures to prohibit the use of anchored nets and lines on the deep-sea bed feature of the MPA.

1 Introduction

This assessment considers whether fishing activities are compatible with the conservation objectives of South West Deeps (East) Marine Protected Area (MPA).

This site is designated as a marine conservation zone (MCZ). This assessment uses the best available evidence to review site characteristics and fishing activity and determine if there is a significant risk of fishing activities hindering the conservation objectives of the site. If so, the Marine Management Organisation (MMO) will develop and introduce suitable management measures, such as MMO byelaws. If MMO byelaws are required, then these will be subject to public consultation and will require confirmation from the Secretary of State to come into effect.

2 Site information

2.1 Overview

The following Joint Nature Conservation Committee (JNCC) site information centre was used to provide background on site geography, designated features and conservation objectives within this assessment:

- JNCC Site Information South West Deeps (East) MPA¹
- Feature Map: South West Deeps (East) MCZ²

South West Deeps (East) MPA is an offshore site located in the Western Channel and Celtic Sea region. It borders South West Deeps (West) MPA to the northwest, and is delineated at the southern and eastern edges by the exclusive economic zone. The eastern boundary of the site is approximately 190 kilometres (km) southwest of the Land's End peninsula. It covers an area of approximately 4,676 square kilometres (km²) (**Figure 1**).

South West Deeps (East) MPA was designated as a marine conservation zone (MCZ) in 2019.

The depth of the MPA site is in the range 150 to 750 metres (m), and the variety of habitats between 150 m and 170 m support a range of species.

The MPA designation contains the following features:

- subtidal sand;
- subtidal coarse sediment;
- deep-sea bed; and
- the geological feature Celtic Sea Relict Sandbanks.

The dominant feature is subtidal sand with areas of subtidal coarse sediment throughout. South West Deeps (East) MPA contributes the greatest area of subtidal sand to the MPA network within this regional sea (Western Channel and Celtic Sea).

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<sup>2</sup> Feature Map: South West Deeps (East) MCZ.
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¹ JNCC Site Information - South West Deeps (East) MPA. <u>incc.gov.uk/our-</u> work/south-west-deeps-east-mpa/ (last accessed 1 June 2023)

assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_d ata/file/915706/south-west-deeps-east-mcz-feature-map.pdf (last accessed 6 July 2023)



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Figure 1: Site overview map.

An area of deep-sea bed lies to the south. The site is one of only two UK MPAs outside of Scotland's waters to protect deep-sea bed habitats beyond the shelf break. Some of the area, to the east of the deep-sea bed area, is described as deep-sea sand/muddy sand, the remainder is unclassified. Supplementary advice on the conservation objectives is not yet available from JNCC for the deep-sea bed broad-scale habitat. However, three habitats have been identified with high confidence as being present within the extent of the wider deep-sea bed feature: deep-sea rock, deep-sea mud and deep-sea bioherms. Bioherms are mounds or reefs of rock formed from the remains of marine organisms, and embedded within mineral rock, forming unique biological seabeds.

Three Celtic Sea relict sandbanks cross the site between the northwest and southeast. The Celtic Sea relict sandbanks are among the largest and deepest shelf sand ridges in UK waters.

The MPA supports a range of species including flat fish (sole and plaice), clams, cockles and marine worms which burrow within the sand.

The Conservation Objective for the South West Deeps (East) Marine Conservation Zone is 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.

The designated features, and general management approaches are set out below in **Table 1**. JNCC have based the general management approaches for the features of this site on vulnerability assessment using a JNCC expert quality assurance panel in 2021³, which recommended benthic trawling should be minimised to meet the recover objective.

The latest JNCC advice (2021) concluded that the features subtidal coarse sediment, subtidal sand and deep-sea bed were considered to be in unfavourable condition and the general management approach (GMA) was for recover. The latest activity data (2016-2020/2021) is not significantly different from that used in the assessment (2017-2018) so it is reasonable to use this advice as the best available.

³ <u>www.data.jncc.gov.uk/data/9f932d1f-190d-40da-a032-</u> 84e8c685df00/SouthWestDeepsEast-ConservationStatements-V1.0.pdf</u> (last accessed 19 May 2023)

Table 1: Designated features, including supporting habitats, and conservation objectives.

Designated feature	General Management Approach
Deep-sea bed	Recover to a favourable condition
Subtidal coarse sediment	Recover to a favourable condition
Subtidal sand	Recover to a favourable condition
Celtic Sea Relict Sandbanks (Feature of geomorphological interest)	Maintain in favourable condition

2.2 Scope of this assessment

The scope of this assessment covers fishing activities alone, and relevant activities in combination with fishing, which are set out in Part C of the assessment (**Section 5**).

3 Part A - Identified pressures on the MPA

Part A of this assessment was carried out in a manner that is consistent with the 'capable of affecting (other than insignificantly)' test required by section 126 of the Marine and Coastal Access Act 2009.⁴

Part A assesses the interactions between pressures from fishing gears on the designated features of this site, screening for interactions that require further consideration. Assessment of interactions not screened out in Part A will form Part B of the assessment. For each activity assessed in Part A, there are two possible outcomes for each identified pressure-feature interaction:

- 1. The pressure-feature interactions **are not** included for assessment in Part B and screened out:
 - a. if the feature is not exposed to the pressure, and is not likely to be in the future;
 - b. the pressure is not capable of affecting the feature, other than insignificantly; or
 - c. if MMO have information that the activity or pressure is not occurring in the site and/or does not need to be considered further.
- 2. The pressure-feature interactions **are** included for assessment in Part B:
 - a. if the feature is exposed to the pressure, or is likely to be in the future;
 - b. the pressure is capable of affecting the feature, other than insignificantly;
 - c. if it is not possible to determine whether the pressure is capable of affecting the feature, other than insignificantly; or
 - d. if MMO have information that the activity or pressure is occurring in the site and/or does need to be considered further.

Consideration of a pressure on a protected feature in an MPA includes consideration of the pressure's exposure to, or effect on, any ecological or geomorphological process on which the conservation of the protected feature is wholly or in part dependent.

3.1 Activities taking place

Table 2 lists all commercial fishing gears included for assessment. All other gears have been screened out of further assessment as they do not take place and are not likely to take place in the future, as there are no vessel monitoring system (VMS) records present within the site linked to these gear codes, nor do they appear in landings data for International Council for the Exploration of the Sea (ICES) statistical rectangles that overlap the site.

⁴ For more information see: <u>www.legislation.gov.uk/ukpga/2009/23/section/126</u>

To determine the levels of fishing activity occurring within the site, the following evidence sources were used:

- VMS data;
- fisheries landings data (logbooks and sales records);
- ICES rectangle level fishing effort data in days (reference: MMO1264);
- expert opinion from MMO marine officers, inshore fisheries and conservation officers; and
- swept area ratio (SAR) data.

For more information about the above evidence sources, please see the <u>Stage 3</u> <u>MPA Site Assessment Methodology</u> document⁵, which describes each type of fishing activity evidence and summarises the strengths and limitations of each source.

Table 2. Fishing activities covered by this assessment present in VMS records(2016 to 2021) and landings data (2016 to 2020) for South West Deeps (East)MPA.

Gear type	Gear name	Gear	Justification					
		code						
	Gill nets (not specified)	GN	Present in VMS data					
	Longlines (demorsal)	119	Present in VMS data and EU					
Anchored	Longines (demersal)		under 12 m data					
nets and lines	Set gillnet (anchored)	GNS	Present in VMS data					
	Trammel net	CTR	Present in VMS data and EU					
		GIK	under 12 m data					
	Beam trawl	твв	Present in VMS data					
	Bottom otter trawl	ОТВ	Present in VMS data and EL					
		0.0	under 12 m data					
	Bottom pair trawl	РТВ	Present in VMS data					
Dettern towed	Danish / anchor seine	SDN	Present in VMS data					
Bottom towed		SDN						
gear	Hand mechanised dredge	HMD	Present in EU under 12 m data					
	Nephrops trawl	TBN	Dresent in VMS data					
	Pair seine	SPR						
	Towed dredge		Present in EU under 12 m					
	rowed diedge	DRD	data					
	Twin bottom otter trawl	OTT	Present in VMS data					
Midwater gear	Boat operated lift net	LNB						

⁵ Stage 3 MPA Site Assessment Methodology document:

www.gov.uk/government/publications/stage-3-site-assessments (last accessed 09 September 2024).

Gear type	Gear name	Gear code	Justification
	Drift gillnet	GND	
	Longlines (midwater)	LLD	
	Midwater otter trawl	ΟΤΜ	
	Midwater pair trawl	PTM	
	Purse seine (ring net)	PS	
Traps	Pot/Creel	FPO	Present in EU under 12 m data
Miscellaneous	Not known	NK	Present in VMS data

3.2 Pressures, features and activities screened out

This section identifies activities, pressures or features that are **occurring but do not need to be considered** for South West Deeps (East) MPA.

The gear types, and features screened out on this basis are listed below with justification:

- **Midwater gears:** although the use of midwater gears does occur within South West Deeps (East) MPA, there is no feasible pathway for gears of this type to interact with benthic designated features under normal operation. These gears are not designed to operate on or near the seabed and are deployed entirely within the water column. Therefore, the use of midwater gear within South West Deeps (East) MPA is not considered to be capable of affecting the designated features other than insignificantly and is not considered further within this assessment.
- **Unknown gear**: 'unknown' and 'miscellaneous' gear has been declared as having been used to land fish from ICES statistical rectangle overlapping the site. The gear codes used to report these landings do not provide any further information relating to the fishing methods used. It is therefore not possible to assess the likelihood of these fishing methods interacting with the seabed and they are not considered further within this assessment.
- Geological or geomorphological designated features: these are out of scope for this assessment as fishing activities are considered incapable of significantly impacting these features. This is applicable to the Celtic Relic sandbank.

3.3 Pressures to be taken forward to Part B

The Stage 3 Fishing Gear MPA Impacts Evidence documents detail all pressures created by fishing activity on features of interest. The documents justify which pressures should be taken forward for consideration for each feature. This is documented in Table A1.2 in the nets and lines, bottom towed gear and traps Impacts Evidence documents:

- Stage 3 Fishing Gear MPA Impacts Evidence Anchored Nets and Lines⁶;
- Stage 3 Fishing Gear MPA Impacts Evidence Bottom Towed Gear⁷; and
- Stage 3 Fishing Gear MPA Impacts Evidence Traps⁸.

To determine whether a pressure should be taken forward for this particular site, **Table 3** uses the information from the Impacts Evidence documents, alongside site level information, including sensitivity assessments, risk profiling of pressures from conservation advice packages, and JNCC advice to assess the sensitivities of pressures on the designated features of the site.

For deep-sea bed the evidence base regarding the site-specific biological components of the feature and their distribution is very limited. Therefore, the sensitivity of this feature to fishing activity is less certain, and there is more reliance on the JNCC Advice on Operations information from conservation advice packages. The Advice on Operations identifies where deep-sea bed is likely to be sensitive to the pressure and also provides a generic risk profiling of pressures (RPP). For this assessment, if the RPP is medium/high, the pressure is taken forward to part B. If low the pressure is not taken forward.

Table 3 details the pressures for each gear type - anchored nets and lines (A), bottom towed gear (B) and traps (T) - to be assessed in Part B, taking into account the pressures screened out in **sections 3.1** and **3.2**.

⁸ Stage 3 Fishing Gear MPA Impacts Evidence Traps:

⁶ Stage 3 Fishing Gear MPA Impacts Evidence Anchored Nets and Lines: <u>www.gov.uk/government/publications/stage-3-impacts-evidence</u> (last accessed 09 September 2024).

⁷ Stage 3 Fishing Gear MPA Impacts Evidence Bottom Towed Gear: <u>www.gov.uk/government/publications/stage-3-impacts-evidence</u> (last accessed 09 September 2024).

www.gov.uk/government/publications/stage-3-impacts-evidence (last accessed 09 September 2024).

Key	
	Dark blue highlighting indicates that the feature is sensitive to this pressure from the gear type in this site, and that the interaction should be taken forward for consideration.
	Light blue highlighting indicates that feature is sensitive to the pressure in general, but the gear type is unlikely to exert this pressure to an extent where impacts are of concern in the site.
	Grey highlighting indicates that there is insufficient evidence to make sensitivity conclusions, or that a sensitivity assessment has not been made for this feature to this pressure from the gear type.
	If there is no highlighting within a cell, this indicates either the feature is not sensitive to the pressure, or that the pressure from the gear type is not relevant to the feature.

 Table 3: Sensitivity to potential pressures from fishing activities on South West Deeps (East) MPA.

	Designated Features								
Potential pressures		tidal co edime	oarse nt	Su	btidal s	and	Deep-sea bed		
	Α	В	т	Α	В	т	Α	В	т
Abrasion or disturbance of the substrate on the surface of the seabed									
Changes in suspended solids (water clarity)									
Deoxygenation									
Hydrocarbon and polycyclic aromatic hydrocarbon (PAH) contamination									
Introduction of light									
Introduction of microbial pathogens									
Introduction or spread of invasive non-indigenous species									
Litter									
Organic enrichment									
Penetration and/or disturbance of the substrate below the surface of the									
seabed, including abrasion									
Physical change (to another seabed type)									
Physical change (to another sediment type)									
Removal of non-target species									
Removal of target species									
Smothering and siltation rate changes									
Synthetic compound contamination									
Transition elements and organo-metal contamination									

4 Part B - Fishing activity assessment

Part B of this assessment was carried out in a manner that is consistent with the 'significant risk of hindering the achievement of the conservation objectives' test required by section 126 of the Marine and Coastal Access Act 2009⁴.

Table 3 shows the fishing activities and pressures identified in Part A which have been included for assessment in Part B. The most relevant attributes of the designated features that could be compromised by fishing pressures were identified using the South West Deeps (East) MPA conservation advice package and are shown in **Table 4**. There are no associated targets available for these attributes in the JNCC supplementary advice on the conservation objectives (SACO)¹.

- For the broad-scale habitats subtidal coarse sediment and subtidal sand the JNCC SACO provides advice regarding the conservation objectives in South West Deeps (East) MPA.
- For deep-sea bed limited supplementary advice is provided but the advice on operations⁹ provides information on activities capable of affecting the protected features of the site. The Advice on Operations are used as supporting information, recognising the habitats identified as being present within the extent of the wider deep-sea bed feature. The features are deep-sea rock, deep-sea mud and deep-sea bioherms.

Table 4: Relevant favourable condition attributes for identified pressure	es.
Objectives have not been set for these attributes.	

Attribute	Relevant pressures						
Extent and distribution: Of the broad-scale	'Distribution' location/patterns may be affected by: Abrasion or disturbance of the substrate on the surface of						
naditats	he seabed						
Structure and function: Finer scale topography	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Smothering and siltation rate changes						
	However, the identified pressures cannot damage or destroy the 'extent' of designated features.						

⁹ JNCC Advice on Operations: <u>hub.jncc.gov.uk/assets/9f932d1f-190d-40da-a032-</u> <u>84e8c685df00#SouthWestDeepsEast-AdviceOnOperations-V1.0.xlsx</u> (last accessed 09 September 2024)

Attribute	Relevant pressures							
Structure and function: sediment composition; characteristic communities; function; the feature within the site	Abrasion or disturbance of the substrate on the surface of the seabed Changes in suspended solids (water clarity) Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Removal of non-target species Removal of target species* Smothering and siltation rate changes							
Structure and function: Key and influential species	Key species are not identified. This is discussed in section 4.3							
Supporting processes: Hydrodynamic regime	Identified pressures cannot damage or destroy extent of designated features.							
Supporting processes: Water quality	Changes in suspended solids (water clarity) Removal of non-target species Removal of target species*							
Supporting processes: Sediment quality	Abrasion or disturbance of the substrate on the surface of the seabed							
Supporting processes: For the feature within the site	Changes in suspended solids (water clarity) Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Removal of non-target species Removal of target species* Smothering and siltation rate changes							

* Literature has insufficient evidence regarding effect of pressure for deep-sea bed on removal of target species

4.1 Fisheries access and existing management

Non-UK vessels can operate within South West Deeps (East) MPA, provided that they have a licence issued by the UK to do so. VMS records indicate nationalities which fished within the MPA between 2016 to 2021 include vessels from France, Spain, Ireland, Denmark, Netherlands, Portugal and Germany. The majority of VMS records within the MPA are from France, largely using otter trawls. More information on non-UK vessel access to UK waters can be found on MMO's <u>Single Issuing Authority</u> page¹⁰.

4.2 Fishing activity summary

 Table A1. 1 to Table A1. 6 in Annex 1 display a detailed breakdown of fishing activity within South West Deeps (East) MPA.

South West Deeps (East) MPA overlaps with ICES rectangles 25E0, 25E1, 26E0, 26E1 and 27E1. Rectangles 26E1 and 27E1 cover nearly 80 % of the MPA between them.

Data from VMS, landings and swept area ratio describes what fishing activity occurred within South West Deeps (East) MPA.

Anchored nets and lines

Anchored nets and lines are used significantly in the MPA, from vessels greater than 12 m.

There were an average 2,475 VMS records per year between 2016 and 2021. This comprised mostly fishing using set gillnets (610), longlines (1,831), trammel nets (28) and gillnets (6) (**Table A1. 1**). There was also a small usage of trammel nets in 2019 by under 12 m vessels.

Just under 540 tonnes (t) were landed on average between 2016-2020 (summing anchored nets and lines totals from tables **Table A1. 2, Table A1. 3**, and **Table A1. 5**, almost all from vessels over 12 m. VMS data shows the activity is mostly in the deep-sea beds area to the south, with some additional density at the western boundary of the MPA. Logbooks and inspections at sea indicate the main species targeted by those vessels there is hake. However substantial amounts of greater forkbeard are also caught by the longliners in the area, with fewer vessels also catching fairly large amounts of blue ling, blackbelly rosefish and one specifically targeting blue shark. There are also small amounts of bycatch of other typical demersal species including monkfish and some flatfish.

Bottom towed gear

Bottom towed gear is used significantly in the MPA. The majority of fishing activity is from demersal trawls with an average 8,051 annual VMS records between 2016 and 2021, almost entirely using bottom otter and pair bottom otter trawls. Approximately 693 live weight tonnes were fished using demersal trawls on average between 2016-2020. Landings from under 12 m vessels are generally very low. There is some historic use of mechanised dredges from under 12 m vessels although this has

¹⁰ The UK Single Issuing Authority: <u>www.gov.uk/guidance/united-kingdom-single-issuing-authority-uksia</u> (Last accessed on: 26 July 2023).

reduced significantly since 2016. There are no UK landings from vessels under 12 m for any gear type.

The mean annual surface and subsurface SAR values in the MPA are zero for seines and dredges but range between 1.40 (in 2016) and 1.89 (in 2017) at the surface for demersal trawls between 2016 to 2020 (0.11 to 0.15 for subsurface). A SAR value of 1 means that each area C-square experiences a pass of fishing gear on average once a year. For context, a surface SAR of 1.40 and 1.89 would represent covering the whole site every 6.3 to 8.5 months if activity was spread evenly across the site. In practice the webmaps show that C-squares containing SAR values for demersal trawls show coverage across approximately two-thirds of the MPA, but are predominantly located most densely in the south of the site close to the deep-sea bed region.

Traps

Traps are not prevalent in the MPA. There are only a few isolated instances of pots/creels recorded.

4.3 Pressures by gear type

The Stage 3 Fishing Gear MPA Impacts Evidence documents for anchored nets and lines⁶, bottom towed gear⁷ and traps⁸ collate and analyse the best available evidence on the impacts of different fishing gears on MPA features. This section summarises the analyses and conclusions of those documents, and considers them alongside site level information, including the nature and condition of the habitats and species present, site conservation objectives, intensity of fishing activity taking place and exposure to natural disturbance.

Subtidal coarse sediment and subtidal sand designated features have similar sensitivities to the pressures identified for different gear types, so these features have been considered together. Where there are differences between the features or the potential impacts of different gears within each grouping, this has been highlighted.

In the context of MPA assessment, the pressures removal of target and non-target species refer to any damage, loss, or removal of species defined as a designated feature or integral to the integrity of a designated feature (for example key structural or influential species). This may occur through intentional or unintentional catch associated with the act of commercial fishing. For the purposes of benthic feature assessments, the physical effects of fishing gears on seabed communities are best addressed through the assessment of abrasion and penetration pressures. As there are no designated species features associated with South West Deeps (East) MPA, and the detail of key structural and influential species is yet to be fully defined, we conclude that impacts from target and non-target removal can be scoped out from further assessment of this site. We acknowledge that these pressures may require

consideration as a result of any future evidence review, in conjunction with updated conservation advice from JNCC.

4.3.1 Summary of biotopes

There is limited survey information available for this site so available information has been used about what biotopes exist in the Western Channel and Celtic Sea within the depth range of the MPA.

Information about the biotopes in the site was extracted from the Biotope Presence-Absence spreadsheet of JNCC Report No. 647 (Tillin *et al.*, 2020)), which lists those European Nature Information System (EUNIS) biotopes that were present, likely to be present, or absent from each UK offshore bioregion based on survey data, environmental information, species records, literature and expert judgement.

Information about the depth range of each biotope is listed in the Biotope Database spreadsheet published alongside JNCC Report No. 647 (Tillin *et al.*, 2020). Where depth ranges were not available, information from <u>The Marine Life Information</u> <u>Network (MarLIN)¹¹</u> pages for each biotope were used to determine the depth range.

Using this information biotopes were screened out if:

- they were not located in the same region as South West Deeps (East) MPA, and;
- if they were not found at the depth range for the site (50 to 100 m).

All other biotopes were screened in, as they are found in the same region and depth range as South West Deeps (East) MPA. If no depth data was available in the JNCC report or on MarLIN for a biotope, this information was marked as 'not available' and the biotope screened in on a precautionary basis. The resulting screened in biotopes are listed in **Table 5**.

There is no detailed biotope information available for deep-sea beds. There is some evidence of deep-sea rock, deep-sea mud and deep-sea bioherms and the possibility of other features, such as living deep-sea reefs formed by cold-water corals which can extend for several kilometres and be more than 20 m high. Much of the deep-sea bed is relatively species poor, so the cold-water coral reefs form oases, in which the number of different species can be three times as high as on the surrounding soft seabed. Large colonies of sponges can also be found in the deepsea. Deep-sea bioherms may support deep-sea corals, reefs and sponge aggregations.

¹¹ The Marine Life Information Network (MarLIN): <u>www.marlin.ac.uk/habitats/eunis</u> (Last accessed on: 16 July 2024)

Table 5: Biotopes in Western Channel and Celtic Sea region to be considered.

Notes for Table 5:

- 1. Location and most depth information (except circalittoral fine sand depth information) taken from Evidence from 'Assigning the EUNIS classifications to UK's Offshore Regional Seas 2020' (Tillin *et al.*, 2020).
- 2. For circalittoral fine sand depth information is from MarLIN (Tillin, 2022a)
- 3. Depth information for this biotope was not available but based on location the biotope is screened into the assessment on a precautionary basis.
- 4. Supplementary advice on conservation objectives (SACO)¹
- 5. Sensitivity information from MarLIN¹¹. For subtidal coarse sediment and subtidal sand, the benchmark for 'heavy' smothering is up to 30 cm of fine material deposited on the seabed from a single activity (up to 5 cm is characterised as light smothering).

Feature	Biotope name	Sensitivity (Note 5)	Justification for screening in (Note 1,2)					
	Deep circalittoral coarse sediment							
Subtidal coarse	<i>Glycera lapidum, Thyasira</i> spp. and <i>Amythasides macroglossus</i> in offshore gravelly sand (Tillin and Watson, 2023)	Medium sensitivity for Smothering (heavy)	- See note 3					
Seument	<i>Hesionura</i> <i>elongata</i> and <i>Protodorvillea</i> <i>kefersteini</i> in offshore coarse sand (Tillin and Ashley, 2016)	No evidence of medium / high sensitivity to pressures.						
	Circalittoral fine sand							
	<i>Echinocyamus pusillus</i> , <i>Ophelia borealis</i> and <i>Abra prismatica</i> in circalittoral fine sand (Tillin, 2022b)	Medium sensitivity for Smothering (heavy)	Biotope can exist in correct depth range for MPA. 30- 200 metres. See note 2.					
Subtidal	Deep circalittoral sand							
sand	Maldanid polychaetes and <i>Eudorellopsis deformis</i> in deep circalittoral sand or muddy sand (Ashley, 2016)	Medium sensitivity for Smothering (heavy); abrasion; penetration	See note 3					
	<i>Owenia fusiformis</i> and <i>Amphiura filiformis</i> in deep circalittoral sand or muddy sand (De-Bastos, 2023)	Medium sensitivity for Smothering (heavy); abrasion; penetration.	- See note 5					
	Deep-sea rock and artificial hard substrata							
	Deep-sea bedrock	 No sensitivity information availa for deep-sea beds. 						
	Boulders on the deep-sea bed							
	Deep-sea mixed substrata	 SACO states there is evidence of deep-sea rock, deep-sea mud and deep-sea bioherms. (see note 4). No explicit information on whether biotope can exist in the correct depth range for MPA. Region to east of the DSB is 						
	Deep-sea biogenic gravels (shells, coral debris)							
Deep-sea bed	Communities of allochthonous material							
	Deep-sea sand							
	Deep-sea muddy sand	described as d	eep-sea sand/ deep					
	Deep-sea mud	sea muddy sand (pers. comms (British Geological Survey, 197						
	Deep-sea bioherms							
	Communities of deep-sea corals: Deep-sea <i>Lophelia pertusa</i> reefs	1010)						
	Deep-sea sponge aggregations							

4.3.2 Anchored nets and lines

The following pressures from anchored nets and lines have been considered in relation to designated features of South West Deeps (East) from **Table 3** alongside the attributes in **Table 4**.

- Designated Features: subtidal coarse sediment and subtidal sand (considered together)
 - $\circ~$ Abrasion or disturbance of the substrate on the surface of the seabed
 - Removal of non-target species (not considered further)
 - Removal of target species (not considered further)
- Designated Feature: deep-sea bed
 - Abrasion or disturbance of the substrate on the surface of the seabed
 - Removal of non-target species (not considered further)

As noted above, impacts from target/non-target removal pressures have been scoped out from this assessment, as they are assessed more completely within the abrasion and penetration pressures.

Section 4.3 describes fishing activity within South West Deeps (East) MPA, and notes the prevalence of fishing using set gillnets, and longlines. VMS records indicate activity is concentrated on the deep-sea bed area to the south of the site and also the subtidal sand area to the western boundary of the MPA.

Impacts on sediment features relating to abrasion or disturbance of the substrate on the surface of the seabed occur primarily from the footrope and anchors during the hauling of anchored nets and lines gear, and during movement along the seabed due to tides, currents or rough weather.

Designated Features: subtidal coarse sediment and subtidal sand (considered together)

Most of the activity from anchored nets and lines is focussed at the western boundary of the MPA on the subtidal sand.

The static nature of the gear type means it is unlikely to affect the physical structure of the features but there is some potential for damage to the biological communities present in intensively fished areas.

Table 5 lists those biotopes which may exist in the main Western Channel and Celtic

 Sea within the depth range of the South West Deeps (East) MPA.

Of the 5 biotopes that may be present, 2 have medium sensitivity to penetration and abrasion pressures, both within the subtidal sand feature (maldanid polychaetes and *Eudorellopsis deformis, Owenia fusiformis* and *Amphiura filiformis*).

• Maldanid polychaetes are likely to be susceptible to burial from pressures such as deposition of suspended sediment or removal of substratum, due to

the limited mobility of the species. The *Amphiura* component of the community may take 2-10 years to recover after significant disturbance though evidence is limited (Ashley, 2016).

• Information on the *Owenia fusiformis* and *Amphiura filiformis* biotope suggests that *Amphiura filiformis* has some resilience assuming the population is not completely removed, but recruitment is highly dependent on local conditions, and recovery rates may be 2-10 years (De-Bastos, 2023).

Abrasion impacts are greater on subtidal coarse sediments compared to subtidal sand as the coarser habitats often contain populations of sessile epifauna. Section 9.3 of the anchored nets and lines Impacts Evidence document⁶, states that abrasion impacts from this gear type are unlikely to have a significant negative impact on the extent or distribution of sediment features, or the structure and function of the ecosystem. Subtidal sediment habitats are considered resilient to all but intense fishing activity using anchored nets and lines on species rich sediment habitats or those with long-lived bivalves.

Overall, in the South West Deeps (East) MPA there is currently little interaction occurring between anchored net and line activity and the designated subtidal sand and subtidal coarse sediment features. The risk of abrasion and disturbance is limited, and smallest for subtidal sand features. It is considered that anchored nets and lines activity is unlikely to create heavy disturbance over an extensive range and hence the resilience of the community should be maintained at the activity levels described.

Designated Feature: deep-sea bed

The deep-sea bed feature is rare within the MPA network and there is limited information regarding the presence of features.

However, there is high confidence that deep-sea rock, deep-sea mud and deep-sea bioherms exist within the site. Living deep-sea reefs are formed by cold-water corals. They can extend for several kilometres and be more than 20 m high. Much of the deep-sea bed is very species poor, and cold-water coral reefs form oases, in which the number of different species can be three times as high as on the surrounding soft seabed. Large colonies of sponges can also be found in the deep-sea (JNCC, 2014).

Other deep-sea bed biotopes may also exist in the MPA (**Table 5**). Pusceddu et al. (2014) states that deep-sea habitats (greater than 200 m in depth) are rich in biodiversity, hosting many endemic and commercially important species.

VMS data indicates the majority of fishing density using anchored net and lines occurs in the deep-sea bed region of the MPA.

Specific evidence regarding sensitivity of deep-sea beds is limited although many deep sea sponge and coral communities have been found to be sensitive to damage (Section 7.1 of the anchored nets and lines Impacts Evidence document⁶). There is no sensitivity information available in MarLiN for deep-sea bed component habitats

so there is potential for deep-sea bed areas to be impacted by fishing using anchored net and lines. As bioherms are formed from the remains of marine organisms their fragility means there is a realistic possibility of damage to them in the deep-sea bed area and hence hindering the conservation objectives.

This review is based on data at a bioregion level and therefore confidence is relatively low. If any new information on biotopes present, activity levels, or biotope sensitivity arises management decisions should be reassessed at the earliest opportunity.

Therefore, **MMO concludes**

- 1. that the ongoing use of anchored nets and lines at the levels described over the sand and sediment features does not pose a significant risk of hindering the achievement of the conservation objectives of the MPA.
- 2. that there is a significant risk of the ongoing use of anchored nets and lines over the deep-sea bed feature hindering the achievement of the conservation objectives of the MPA.

4.3.3 Bottom towed gear

The following pressures from bottom towed gear have been considered in relation to designated features of South West Deeps (East) from **Table 3** alongside the attributes in **Table 4**.

- Designated Features: subtidal coarse sediment and subtidal sand (considered together)
 - $\circ~$ Abrasion or disturbance of the substrate on the surface of the seabed $^{\Delta}$
 - \circ Changes in suspended solids (water clarity)^{*}
 - $\circ~$ Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion ^
 - Removal of non-target species (not considered further)
 - Removal of target species (not considered further)
 - \circ Smothering and siltation rate changes *
- Designated Feature: deep-sea bed
 - $\circ~$ Abrasion or disturbance of the substrate on the surface of the seabed $^{\Delta}$
 - Changes in suspended solids (water clarity) *
 - $\circ~$ Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion $^{\Delta}$
 - Removal of non-target species (not considered further)
 - $\circ~$ Smothering and siltation rate changes *

Pressures marked with matching superscript symbols ($^{\Delta}$ and *) have been consolidated in this assessment due to the similar nature of their impacts on the sediment features. As noted in **section 4.3**, impacts from target/non-target removal pressures have been scoped out from this assessment.

Pusceddu et al. (2014) states that deep-sea habitats (greater than 200 m in depth) are rich in biodiversity, hosting many endemic and commercially important species. Compared with shallow-water areas, the impact of trawling on deep-sea benthic ecosystems is likely to be more severe and long-lasting, because of their lower resilience and higher vulnerability.

As per section 8.4 of the bottom towed gear Impacts Evidence document⁷ the abrasion and penetration pressures caused by bottom towed gears have both biological and physical impacts to sediment features, depending on levels of activity and fishing intensity. Physical impacts range from the creation of furrows and berms in the sediment, to the flattening of bottom features such as ripples and the homogenisation of sediments. Biological impacts include damage and mortality to flora and fauna on the seabed via surface and subsurface abrasion and penetration, as well as long term shifts in biological communities towards smaller, short-lived, opportunistic species that exhibit greater resilience to anthropogenic activity.

As per section 8.4 of the bottom towed gear Impacts Evidence document⁷ the use of bottom towed fishing gear can also cause changes in the solids suspended in the water column and smothering, affecting the ability of some organisms to feed or breathe. The subsequent settling rate of different sediment types, and entrainment in prevailing currents, can result in a change in the structure and function of the feature in finer scale topography, sediment quality and sediment composition. The degree of impact will vary according to the amount of fishing activity, the gear used and the sediment type. Sediments and faunal communities react differently to these pressures depending on grain size, the degree of sediment impaction and frequency/severity of the pressure upon them.

Table 5 lists those biotopes which may exist in the main Western Channel and Celtic

 Sea within the depth range of the South West Deeps (East) MPA.

Designated Features: subtidal coarse sediment and subtidal sand (considered together)

Table 5 lists those biotopes which may exist in the main Western Channel and Celtic Sea within the depth range of the South West Deeps (East) MPA.

Of the 5 biotopes that may be present, 4 have medium sensitivity to smothering (heavy) and 2 of these also have medium sensitivity to abrasion and penetration pressures.

- *Glycera lapidum, Thyasira* spp. and *Amythasides macroglossus* in offshore gravelly sand. Following disturbance, there is a high potential rate of recolonization of sediments by *Glycera lapidum*, but the relatively slow growth-rate and long lifespan suggests that recovery of biomass following initial recolonization by post-larvae is likely to take several years.
- *Hesionura elongata* and *Protodorvillea kefersteini* in offshore coarse sand. There was no clear evidence on the sensitivity of these species. However,

the small body size and limited mobility of the characterizing species is likely to make them more susceptible to impacts from removal of sediment, smothering or damage from abrasion. The recovery of these interstitial fauna has been reported to take years after sediment was removed, or the sediment characteristics altered by deposition.

- Echinocyamus pusillus, Ophelia borealis and Abra prismatica in circalittoral fine sand. There is limited detailed information, but available studies indicate the trend that, following severe disturbance, habitats are recolonized rapidly by opportunistic species. The polychaetes (such as *O. borealis*) are therefore likely to recover more rapidly than the characterizing bivalves (such as *A.prismatica*) which may take some years, and the biotope classification may revert, during recovery, to a polychaete dominated biotope.
- Maldanid polychaetes are likely to be susceptible to burial from pressures such as deposition of suspended sediment or removal of substratum, due to the limited mobility of the species. The *Amphiura* component (a brittlestar) of the community may take 2-10 years to recover after significant disturbance though evidence is limited.
- Information on the crustacean *Owenia fusiformis* and *Amphiura filiformis* biotope suggests that *Amphiura filiformis* has some resilience assuming the population is not completely removed, but recruitment is highly dependent on local conditions and recovery rates may be 2-10 years.

As described in **section 4.2**, the fishing activity that dominates in South West Deeps (East) MPA is from demersal trawls, which occur throughout the site, with higher levels of activity in the western area where subtidal sand is the dominant feature. Abrasion from demersal trawls can reduce the habitat complexity and can permanently alter the biological community and state of the habitat following periods of high intensity trawling.

In combination with the abrasion, disturbance and penetration pressures caused by bottom towed gear, it is likely that smothering, siltation rate and suspended solid changes could affect the extent, distribution and structure of biological communities of South West Deeps (East) MPA to the extent that the conservation objectives of the site are hindered.

Given that the swept area ratios for the site (**section 4.2**) indicate significant levels of activity, MMO consider that the sedimentary features (subtidal sand and subtidal coarse sediment) of South West Deeps (East) could experience regular exposure to abrasion and penetration pressures that would preclude recovery of the structure, distribution and function of the designated features. The impacts of demersal trawling activity at the levels described in this assessment are not, therefore, compatible with the recover conservation objective with regards to biological communities in this site.

Designated Feature: deep-sea bed

Table 5 lists those biotopes which may exist in the main Western Channel and Celtic

 Sea within the depth range of the South West Deeps (East) MPA.

Section **4.3.2** describes the rarity of the deep-sea bank feature within the MPA network and that, although there is limited information regarding the presence of features, there is high confidence that deep-sea rock, deep-sea mud and deep-sea bioherms exist within the site. Further, that deep-sea bed biotopes may exist in the MPA.

As described in **section 4.2**, demersal trawls are the dominant fishing activity in South West Deeps (East) MPA. This occurs throughout the site, with the highest levels of activity to the south in the area of the deep-sea bed. Abrasion from demersal trawls can reduce the habitat complexity and can permanently alter the biological community and state of the habitat following periods of high intensity trawling.

Given that the swept area ratios for the site indicate significant levels of activity, and these are most prevalent on the deep-sea bed region, MMO consider it is possible that the deep-sea bed could be experiencing regular exposure to abrasion and penetration pressures that would preclude recovery of the structure, distribution and function of the designated features.

There is no sensitivity information available in MarLIN for deep-sea bed component habitats so there is potential for deep-sea bed areas to be impacted by fishing activity. As bioherms are formed from the remains of marine organisms their fragility means there is a realistic possibility of damage to them in the deep-sea bed area and hence hindering the conservation objectives.

In combination with the abrasion, disturbance and penetration pressures caused by bottom towed gear, it is likely that smothering, siltation rate and suspended solid changes could affect the extent, distribution and structure of biological communities of South West Deeps (East) MPA to the extent that the conservation objectives of the site are hindered.

It is acknowledged that this review is based on data at a bioregion level and therefore confidence is relatively low. If any new information on biotopes present, activity levels, or biotope sensitivity arises management decisions should be reassessed at the earliest opportunity.

Overall, the impacts of demersal trawling activity at the levels described in this assessment are not, therefore, compatible with the recover conservation objective with regards to biological communities in this site.

MMO concludes that there is a significant risk of the ongoing use of bottom towed gears over the sand and sediment features and the deep-sea bed area of South West Deeps (East) MPA hindering the achievement of the conservation objectives of the MPA.

4.3.4 Traps

The following pressures from traps have been considered in relation to designated features of South West Deeps (East) from **Table 3** alongside the attributes in **Table 4**.

- Designated Features: subtidal coarse sediment and subtidal sand (considered together)
 - $\circ~$ Abrasion or disturbance of the substrate on the surface of the seabed
 - Removal of non-target species (not considered further)
 - Removal of target species (not considered further)
- Designated Feature: deep-sea bed
 - Abrasion or disturbance of the substrate on the surface of the seabed
 - o Removal of non-target species (not considered further)

As noted above, impacts from target/non-target removal pressures have been scoped out from this assessment, as they are assessed more completely within the abrasion and penetration pressures.

The impact of abrasion or disturbance of the substrate on the surface of the seabed by traps is considered to be relatively low given the small footprint of gear, though the different sizes, materials and number of traps will mean the impact varies. The risk increases during hauling or where there is significant tidal movement. However, interaction of lines and associated anchors with the seabed is likely to be minimal.

There is also little primary evidence of the impact of the physical impacts of traps on subtidal sediments, and the evidence that is available indicates that traps are not likely to be a concern unless used at particularly high levels of intensity, or if particularly sensitive species are present.

As discussed in **section 4.2**, traps are not prevalent in the MPA. There are only a few isolated instances of pots/creels recorded.

Therefore, **MMO concludes that the ongoing use of traps at the levels** described does not pose a significant risk of hindering the achievement of the conservation objectives of the MPA.

4.4 Part B conclusion

The assessment of anchored nets and lines, bottom towed gears and traps on subtidal sand, subtidal coarse sediment and deep-sea bed features of South West Deeps (East) has concluded that:

- 1. there is a significant risk of the ongoing use of bottom towed gear of hindering the achievement of the conservation objectives of the MPA for subtidal sand, subtidal coarse sediment and deep-sea bed features.
- 2. ongoing use of anchored nets and lines at the levels described will not result in a significant risk of hindering the achievement of the conservation objectives of the MPA for subtidal sand, and subtidal coarse sediment.

- 3. there is a significant risk of the ongoing use of anchored nets and lines hindering the achievement of the conservation objectives of the MPA for deep-sea bed features.
- 4. ongoing use of traps at the levels described does not pose a significant risk of hindering the achievement of the conservation objectives of the MPA.

As such MMO concludes that management measures are required to prohibit bottom towed gear and restrict anchored nets and lines in the South West Deeps (East) MPA.

Section 6 contains further details of these measures.

5 Part C - In-combination assessment

This section assesses the impacts of fishing activities in-combination with relevant activities taking place. This includes the following:

- fishing interactions assessed in Part B but which were not considered, alone, to pose a significant risk of hindering the achievement of the conservation objectives; and
- other activities: such as marine development infrastructure plans and projects that occur in the MPA.

ArcGIS software has been used to check relevant activities that occur within, or adjacent to, the assessed site where there could be a pathway for impact. To determine relevant activities to be included in this part of the assessment, a distance of 5 km was selected as suitable to capture any potential way in which the activity could impact the benthic features of the site in-combination with effects of the fishing activities assessed. A 5 km buffer was therefore applied to the site boundary to identify relevant activities. This assessment considers the in-combination impacts of marine licensable activities that are ongoing or upcoming, and with the same medium to high-risk pressure impact pathways as permitted fishing activity. As the models were run using ArcGIS in August 2023, any licences that ended before this date were screened out of the assessment.

The North Sea Transition Authority (NSTA) is responsible for regulating the oil, gas and carbon storage industries, and as such these activities fall outside of MMO's marine licensing remit. Oil, gas and carbon storage industry activities are not currently considered in this draft assessment, as information on the potential pressures exerted by associated activities is currently under review, and the likelihood of these activities resulting in an in-combination significant risk of hindering the achievement of the site's conservation objectives with fishing is expected to be very low. Following formal consultation, relevant oil, gas and carbon storage industry activities that could impact the site in-combination with the effects of assessed fishing activities will be included before finalising this assessment, alongside marine licence applications submitted after August 2023.

Bottom towed gears were identified in Part B as requiring management to avoid posing a significant risk of hindering the achievement of the site conservation objectives. Furthermore, use of anchored nets and lines were identified as requiring management in the deep-sea bed region of the site to avoid posing a significant risk of hindering the achievement of the site conservation objectives. In-combination effects of these interactions are therefore not considered further.

Anchored nets and lines (over subtidal sand, and subtidal coarse sediment) and traps (whole site) are the only remaining fishing activities occurring within South West Deeps (East) MPA that interact with the seabed. In-combination effects of

these fishing activities as well as these activities in-combination with other relevant activities will be assessed in this section.

In accordance with the methodology detailed above, ArcGIS identified no other relevant activities occurring within or adjacent to the South West Deeps (East) MPA, within the 5 km buffer applied.

Additional checks of submarine cables using the SPIRIT package also identified there may be operational submarine cables within this MPA and some historic submarine cables. These cables are already in-situ and are unlikely to have any residual abrasion/removal pressure in-combination with the assessed fishing activity. Any abrasion/removal pressure from submarine cable operation and maintenance activity is unlikely to have a significant risk of in-combination impacts with assessed fishing activity.

Therefore, only fishing in-combination with other fishing activities are considered hereafter. **Table 3** from **section 3.3**, was used to identify medium to high risk pressures exerted by fishing which require in-combination assessment (**Table 3**).

Table 6 summarises the pressures exerted by fishing and identifies those pressures exerted by all gears (Y: pressure exerted). Activity-pressure interactions are highlighted dark blue to indicate an in-combination effect. Only fishing activity with no proposed or current fisheries management in place are considered.

Table 6: Pressures exerted by fishing

	Fishing activities						
Potential pressures	Anchored nets and lines *	Traps					
Abrasion or disturbance of the substrate on the surface of the seabed	Y	Y					
Removal of non-target species	Y	Y					
Removal of target species	Y	Y					

* The anchored nets and lines interactions in **Table 6** only apply to the subtidal sand, and subtidal coarse sediment features. Part B of this assessment concluded that there is a significant risk of the ongoing use of anchored nets and lines hindering the achievement of the conservation objectives of the MPA for the deep-sea bed features so MMO will introduce management measures to address this risk. Hence there will be no interaction between anchored nets and lines and traps in the deep-sea bed region, only the subtidal sand, and subtidal coarse sediment.

5.1 In-combination pressure sections

The fishing pressures exerted by anchored nets and lines and traps will be considered in this section.

5.2 Fishing vs Fishing in-combination pressures

5.2.1 Abrasion and disturbance of the substrate on the surface of the seabed and removal of target and non-target species

As noted in Part B (**section 4.3**), impacts from the removal of target and non-target species pressure is not being considered in detail in this assessment. In-combination impacts from the removal of target and non-target species pressures are more fully assessed under the pressure abrasion, as the detail of key structural and influential species is yet to be fully defined. Therefore, the removal pressures are not considered further in this in-combination assessment. The pressures may require further consideration as future evidence becomes available, in conjunction with updated conservation advice from JNCC.

The combined impacts from anchored nets and lines and traps (subtidal sand, and subtidal coarse sediment features only) could potentially increase the risk of negative effects from the pressure abrasion and disturbance of the substrate on the surface of the seabed. Anchored nets and lines alone have been assessed as having no significant risk of hindering the site conservation objectives, there is an average annual total (2016 to 2021) of 535.51 tonnes of live weight landings (**Table A1. 2** and **Table A1. 3**) almost all from vessels over 12 metres. The <u>VMS density WebApps for static gear</u> indicate the majority of this activity is in the deep-sea bed area and therefore not applicable to this in-combination assessment. Traps activity is very small totalling an annual average of 0.02 tonnes, using under 12 metre vessels. Therefore, the in-combination effect from these activities will not cause a significant risk of hindering the achievement of the conservation objectives.

Therefore, MMO concludes that the combined pressures from anchored nets and lines and traps will not result in a significant risk of hindering the achievement of the conservation objectives for the South West Deeps (East) MPA at the levels described.

5.3 Part C conclusion

MMO concludes that fishing interactions in-combination will not result in a significant risk of hindering the achievement of the conservation objectives for South West Deeps (East) MPA.

Further management measures will not therefore be implemented for fishing activities currently occurring within the MPA.

6 Conclusion and proposed management

Part A of this assessment concluded that anchored nets and lines, bottom towed gear, and traps are capable of affecting (other than insignificantly) the designated features of South West Deeps (East) MPA.

Part B of this assessment concluded that:

- 1. there is a significant risk of the ongoing use of bottom towed gear of hindering the achievement of the conservation objectives of the MPA for subtidal sand, subtidal coarse sediment and deep-sea bed features.
- 2. there is a significant risk of the ongoing use of anchored nets and lines hindering the achievement of the conservation objectives of the MPA for deep-sea bed features.
- 3. ongoing use of anchored nets and lines at the levels described will not result in a significant risk of hindering the achievement of the conservation objectives of the MPA for subtidal sand, and subtidal coarse sediment.
- 4. ongoing use of traps at the levels described does not pose a significant risk of hindering the achievement of the conservation objectives of the MPA.

Part C of this assessment concluded that fishing interactions in-combination will not result in a significant additional risk of hindering the achievement of the conservation objectives for South West Deeps (East) MPA.

To ensure that fishing activities do not result in a significant risk of hindering the conservation objectives of South West Deeps (East) MPA, MMO will implement a byelaw to prohibit the use of bottom towed gear throughout South West Deeps (East) MPA and to prohibit the use of anchored nets and lines on the deep-sea bed features in the South West Deeps (East) MPA.

Figure 2 shows the proposed management area in line with the conclusions set out above.

The boundaries of the proposed management area include an appropriate buffer zone to prevent direct damaging physical interactions between fishing activities and the designated features to be protected. The rationale for determining buffer size can be found in Annex 2 of the <u>Stage 3 MPA Site Assessment Methodology</u> document⁵.



Datum: ETRS 1989 Projection: Lambert Azimuthal Equal Area MMO Reference: 10786

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Figure 2: Map of proposed management.

7 Review of this assessment

MMO will review this assessment every five years, or earlier if significant new information is received. Such information could include:

- updated conservation advice
- updated advice on the condition of the site's feature(s)
- significant increase in activity levels

To coordinate the collection and analysis of information regarding activity levels, and to ensure that any required management is implemented in a timely manner, a monitoring and control plan will be implemented for this site. This plan will be developed in line with MMO's Monitoring and Control Plan framework.

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Annexes

Annex 1: Fishing activity data

Table A1. 1: VMS record count and proportion per nation group (UK and EU Member State (EU)) and proportional activity (%), per gear, per gear group, per year (2016 to 2021), totals and annual average 2016 to 2021. All numbers are rounded to the nearest whole number.

		2016		2017		2018		2019		2020		2021		Total (2016 to 2021)		Annual average (2016 to 2021)	
Gear group	Gear code	Nation group	Count	%	Count	%	Count										
	GN	UK	0	0	0	0	9	100	27	100	0	0	1	100	37	100	6
	GN To	otal	0	0	0	0	9	0	27	1	0	0	1	0	37	0	6
	GNS	EU	862	95	488	100	427	100	583	100	641	100	613	100	3,614	99	602
	GNS	UK	44	5	1	0	0	0	0	0	0	0	0	0	45	1	8
Anchored Net/Line	GNS T	Fotal	906	35	489	19	427	12	583	21	641	37	613	37	3,659	25	610
	GTR	UK	36	100	49	100	44	100	39	100	0	0	0	0	168	100	28
	GTR 1	Fotal	36	1	49	2	44	1	39	1	0	0	0	0	168	1	28
	LLS	EU	1,610	100	2,101	100	3,030	100	2,118	100	1,082	100	1,039	100	10,980	100	1,830
	LLS	UK	3	0	0	0	0	0	0	0	0	0	0	0	3	0	1
	LLS T	otal	1,613	63	2,101	80	3,030	86	2,118	77	1,082	63	1,039	63	10,983	74	1,831
Anchored Net/Line Total		2,555	29	2,639	22	3,510	29	2,767	26	1,723	16	1,653	14	14,847	22	2,475	
	SDN	EU	0	0	0	0	0	0	3	100	1	100	1	100	5	100	1
Demersal Seine	SDN 1	Fotal	0	0	0	0	0	0	3	75	1	11	1	100	5	36	1
	SPR	EU	0	0	0	0	0	0	1	100	8	100	0	0	9	100	2

			201	6	201	7	201	8	201	9	202	0	202	1	Tota (2016 2027	al to I)	Annual average (2016 to 2021)
Gear group	Gear code	Nation group	Count	%	Count	%	Count										
	SPR ⁻	Total	0	0	0	0	0	0	1	25	8	89	0	0	9	64	2
Demersal Seine	Total		0	0	0	0	0	0	4	0	9	0	1	0	14	0	2
	ОТВ	EU	3,984	98	4,874	96	4,668	98	4,218	96	5,174	99	4,119	94	27,037	97	4,506
	ОТВ	UK	71	2	201	4	78	2	188	4	50	1	283	6	871	3	145
	OTB [·]	Total	4,055	73	5,075	62	4,746	58	4,406	56	5,224	60	4,402	45	27,908	58	4,651
	ΟΤΤ	EU	1,474	100	3,067	100	3,417	100	3,471	100	3,499	100	5,461	100	20,389	100	3,398
Demersal trawl	OTT	Total	1,474	27	3067	38	3,417	42	3,471	44	3,499	40	5,461	55	20,389	42	3,398
	РТВ	EU	0	0	0	0	0	0	1	100	0	0	0	0	1	100	0
	PTB 1	Total	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
	TBN	UK	5	100	0	0	0	0	0	0	0	0	0	0	5	100	1
	TBN ⁻	Total	5	0	0	0	0	0	0	0	0	0	0	0%	5	0	1
Demersal trawl T	otal		5,534	63	8,142	68	8,163	67	7,878	73	8,723	81	9,863	84	48,303	73	8,051
Midwater - Gill	GND	EU	582	100	796	100	468	100	0	0	0	0	0	0	1,846	100	308
Drift	GND	Total	582	100	796	100	468	100	0	0	0	0	0	0	1,846	100	308
Midwater - Gill D	rift Tota	al	582	7	796	7	468	4	0	0	0	0	0	0	1,846	3	308
Midwater -	PS	EU	0	0	0	0	0	0	0	0	2	100	0	0	2	100	0
surrounding	PS To	otal	0	0	0	0	0	0	0	0	2	100	0	0	2	100	0
Midwater - surrounding Total		0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
Midwater	LLD	EU	108	100	120	100	89	100	63	100	41	100	2	100	423	100	71
Hook/Lines	LLD 1	Total	108	100	120	100	89	100	63	100	41	100	2	100	423	100	71
Midwater Hook/L	ines To	otal	108	1	120	1	89	1	63	1	41	0	2	0	423	1	71

			2010	6	201	7	201	8	201	9	202	0	202	1	Tota (2016 2021	l to)	Annual average (2016 to 2021)
Gear group	Gear code	Nation group	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count
	ОТМ	EU	3	100	7	100	9	100	92	100	24	100	30	100	165	100	28
Midwator Trawl	ОТМ -	Total	3	11	7	24	9	56	92	92	24	86	30	27	165	53	28
	РТМ	EU	24	100	22	100	7	100	8	100	4	100	81	100	146	100	24
	PTM 1	Fotal	24	89	22	76	7	44	8	8	4	14	81	73	146	47	24
Midwater Trawl To	otal		27	0	29	0	16	0	100	1	28	0	111	1	311	0	52
	NK	EU	0	0	184	100	0	0	0	0	287	1	72	1	543	100	91
Unknown	NK To	otal	0	0	184	100	0	0	0	0	287	100	72	100	543	100	91
Unknown Total	•		0	0	184	2	0	0	0	0	287	3	72	1	543	1	91
Midwatar Lift Nat	LNB	EU	9	100	0	0	2	100	2	100	7	100	0	0	20	100	3
	LNB 1	otal	9	100	0	0	2	100	2	100	7	100	0	0	20	100	3
Midwater Lift Net	Total		9	0	0	0	2	0	2	0	7	0	0	0	20	0	3
Grand Total			8,815	12	11,910	17	12,248	18	10,814	16	10,820	17	11,702	18	66,309	16	11,053

Gear group	Gear code	2016	2017	2018	2019	2020	Total (2016 to 2020)	Average (2016 to 2020)
	GN	0	0	3.72	6.05	0	9.76	1.95
Anchored	GNS	27.84	0.44	0	0	0	28.28	5.66
Net/Line	GTR	3.59	9.20	9.69	6.32	0	28.80	5.76
	LLS	0.97	0	0	0	0	0.97	0.19
Anchored Net/I	ine Total	32.40	9.64	13.40	12.37	0	67.81	13.56
	OTB	31.24	59.13	45.74	62.83	19.74	218.68	43.74
Demersal trawl	TBB	0	0	0	0	0	0	0
	TBN	2.48	0	0	0	0	2.48	0.50
Demersal trawl	Total	33.71	59.13	45.74	62.83	19.74	221.16	44.23
Grand total		66.12	68.77	59.14	75.20	19.74	288.97	57.79

Table A1. 2: UK over 12m live weight tonnage (t) estimates from vessels over 12 m in length South West Deeps (East).

Table A1. 3: EU27 live weight tonnage (t) landings estimate by gear over 12 m in length in South West Deeps (East). All numbers are rounded to the nearest whole number.

Gear group	Gear code	2016	2017	2018	2019	2020	Total (2016 to 2020)	Average (2016 to 2020)
Anchorod Not/Lino	GNS	231	203	109	142	351	1,036	207
Anchored Net/Line	LLS	368	317	442	293	155	1,575	315
Anchored Net/Line Total		599	520	551	435	506	2,611	522
Domoroal trawl	ОТВ	476	493	401	324	428	2,122	424
Demersartrawi	OTT	152	222	252	274	224	1,124	225
Demersal trawl Total		628	715	653	598	652	3,246	649

Gear group	Gear code	2016	2017	2018	2019	2020	Total (2016 to 2020)	Average (2016 to 2020)
Midwater Hook/Lines	LLD	65	65	52	30	42	254	51
Midwater Hook/Lines To	tal	65	65	52	30	42	254	51
Miductor Troud	ОТМ	7	12	238	405	57	719	144
	PTM	188	6	2	311	904	1,411	282
Midwater Trawl Total		195	18	240	716	961	2,130	426
Grand total		1,487	1,318	1,496	1,779	2,161	8,241	1,648

 Table A1. 4: Percentage overlap between ICES rectangles and South West Deeps (East) MPA.

ICES rectangle	Percentage
25E0	12.83
25E1	1.91
26E0	20.27
26E1	41.54
27E1	37.40

Gear group	Gear code	2016	2017	2018	2019	2020	Total (2016 to 2020)	Average (2016 to 2020)
Anchored Net/Line	LLS	0	0	0	0.01	0	0.01	<0.01
	GTR	0	0	0	0.34	0	Total (2016 to 2020) 0.01 0.34 0.35 0.29 0.29 0.29 0.42 2.65 3.07 0.08 0.08 0.08 3.78	0.07
Anchored Net/Line Total		0	0	0	0.35	0	0.35	0.07
Demersal trawl	OTB	0	0	0	0	0.29	0.29	0.06
Demersal trawl Total		0	0	0	0	0.29	0.29	0.06
Dredge	DRB	0	0	0	0.39	0.04	0.42	0.08
Dieuge	HMD	0	0	0	2.65	0	2.65	0.53
Dredge Total		0	0	0	3.03	0.04	3.07	0.61
Traps	FPO	0	0	0	0.07	0.01	0.08	0.02
Traps Total		0	0	0	0.07	0.01	0.08	0.02
Grand total		0	0	0	3.45	0.34	3.78	0.76

Table A1. 5: EU27 under 12m live weight tonnage (t) estimates by gear for South West Deeps (East).

Gear group	SAR category	2016	2017	2018	2019	2020
Domorcal saines	Surface	0	0	0	0	0
	Subsurface	0	0	0	0	0
Domorcal trawle	Surface	1.40	1.89	1.70	1.45	1.68
	Subsurface	0.11	0.15	0.13	0.11	0.13
Dradges	Surface	0	0	2018 2 0 0 0 1.89 1.70 0 0.15 0.13 0 0 0 0 0 1.89 1.70 0 0 0 0 0 0 0 0 0 0 0 0 0.15 0.13 0 0 0 0.15 0.13 0 0 0	0	0
Diedges	Subsurface	0	0	0	0	0
Pottom towed goor	Surface	1.40	1.89	1.70	1.45	1.68
Bollom lowed gear	Subsurface	0.11	0.15	0.13	0.11	0.13

Table A1. 6: Mean annual surface and subsurface SAR values for South West Deeps (East) MPA.