Outer Dowsing Offshore Wind

Sabellaria spinulosa Reef Supporting Habitat Technical Note

Deadline 6

Date: April 2025

Document Reference: 22.11
Revision: 3.0

Company:	**Outer Dowsing Offshore Wind**	Asset:	**Whole Asset**
Project:	**Whole Wind Farm**	Sub Project/Package:	Whole Asset
Document Title or Description:	22.11 *Sabellaria spinulosa* Reef Supporting Habitat Technical Note		
Internal Document Number:	PP1-ODOW-DEV-CS-TCN-0003_03	3rd Party Doc No (If applicable):	N/A

Rev No.	Date	Status / Reason for Issue	Author	Checked by	Reviewed by	Approved by
1.0	February 2025	Deadline 4a	GoBe	Outer Dowsing	Shepherd & Wedderburn	Outer Dowsing
2.0	March 2025	Deadline 5	GoBe	Outer Dowsing	Shepherd & Wedderburn	Outer Dowsing
3.0	April 2025	Deadline 6	GoBe	Outer Dowsing	Shepherd & Wedderburn	Outer Dowsing

Executive Summary

The Offshore Export Cable Corridor (ECC) of Outer Dowsing Offshore Wind (ODOW) ("the Project") passes through the Inner Dowsing, Race Bank and North Ridge Special Area of Conservation (IDRBNR SAC) which includes a range of marine habitats and is designated for the Annex I habitats of sandbanks and biogenic reef. Within the IDRBNR SAC, the currently known reef forming species is the Ross worm (*Sabellaria spinulosa*).

Natural England (NE) provided Deadline 3 submissions Appendix C2 (REP3-067) and Appendix C3 (REP3-068) concerning supporting habitats and processes for Annex I *S. spinulosa* reef, including, a recommendation of how to define supporting habitat within (REP3-067). Based on this methodology, the Applicant has undertaken a mapping exercise to identify supporting habitat for *S. spinulosa* reef within the Offshore Export Cable Corridor (Offshore ECC) that crosses over with IDNRRB SAC, with a view to defining areas where removable cable protection could be deployed based on the advice provided by NE.

The mapped output demonstrated that habitat that is potentially suitable for supporting *S. spinulosa* reef were present within four distinct areas, and five smaller areas. The identification of this potential supporting habitat will inform further discussions regarding the delineation of "supporting habitat" and any decisions relating to the need for any further mitigation. The exercise has been undertaken to reach agreement on the interpretations of the methodology and results of the mapping exercise undertaken by the Applicant.

The Applicant has consulted with Natural England through the Discretionary Advice Service (DAS) which has resulted in some minor amendments to the methodology, presented as updates in this technical note at Deadline 6.

The Applicant has committed to removable cable protection within areas of habitat potentially suitable for supporting *S. spinulosa* where the IDRBNR SAC and the offshore ECC intersect and following Natural England's request has calculated the worst-case scenario of the amount of removable cable protection required.

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Acronyms & Definitions

Abbreviations / Acronyms

Abbreviation / Acronym	Description
AEoI	Adverse Effect on Integrity
DAS	Discretionary Advisory Service
DCO	Development Consent Order
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EUNIS	European Nature Information System
ES	Environmental Statement
IDRBNR	Inner Dowsing, Race Bank, and North Ridge
JNCC	Joint Nature Conservation Committee
KM	Kilometre
MBES	Multibeam echosounder
ODOW	Outer Dowsing Offshore Wind
PSA	Particle Size Analysis
RIAA	Report to Inform Appropriate Assessment
SAC	Special Area of Conservation
SoS	Secretary of State
SSS	Side-scan sonar
SBP	Sub-bottom profiler
UHRS	Ultra-high resolution seismic

Terminology

Term	Definition
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the sensitivity of the receptor, in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	A statutory process whereby planned projects must be assessed before a formal decision to proceed can be made. It involves assessment requirements on the EIA Directive and EIA Regulations, including the collection and consideration of environmental information, which fulfils the publication of an Environmental Impact Assessment Report (EIAR).
Environmental Statement (ES)	Produced as part of an EIA for projects in English waters.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Inner Dowsing, Race Bank, and North Ridge Special Area of	The Inner Dowsing, Race Bank and North Ridge Special Area of Conservation site is located off the south Lincolnshire coast in the vicinity of Skegness, extending eastwards and north from Burnham Flats on the North Norfolk coast, occupying The Wash Approaches.

Term	Definition
Conservation (IDRBNR SAC)	
Mitigation	Mitigation measures are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
Multibeam echosounder (MBES)	A multibeam echosounder (MBES) is a type of sonar that is used to map the seabed. It emits acoustic waves in a fan shape beneath its transceiver. The time it takes for the sound waves to reflect off the seabed and return to the receiver is used to calculate the water depth.
Offshore Export Cable Corridor (ECC)	The Offshore Export Cable Corridor (Offshore ECC) is the area within the Order Limits within which the export cables running from the array to landfall will be situated.
Outer Dowsing Offshore Wind (ODOW)	The Project.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation (and its affiliates), TotalEnergies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The project is being developed by Corio Generation, TotalEnergies and GULF.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.

1 Introduction

1. The Offshore Export Cable Corridor (ECC) of Outer Dowsing Offshore Wind (ODOW) ("the Project") passes through the Inner Dowsing, Race Bank and North Ridge Special Area of Conservation (IDRBNR SAC) which includes a range of marine habitats and is designated for sandbanks and biogenic reef. These are Annex 1 habitats that are protected under The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017.
2. Biogenic reef as a feature can be formed by a number of species. Within the IDRBNR SAC, the currently known reef forming species is *Sabellaria spinulosa. S. spinulosa* can form as biogenic reefs (a feature of the IDRBNR SAC) although they are often found individually and present in numbers which are not sufficient to develop reef structures. Aggregations may only last for a season (and is often ephemeral), so presence can be highly variable both spatially and temporally. However, when conditions are favourable (including where pressures have been removed) dense aggregations may be found to persist over several years.
3. Natural England provided Deadline 3 submissions Appendix C2 (REP3-067) and Appendix C3 (REP3-068) concerning supporting habitats and processes for Annex I *S. spinulosa* reef. This advice is supplemented by Natural England's comments at Deadline 4 (Appendix C4 to the Natural England Deadline 4 Submission (REP4-134)) summarised in the following paragraphs:
4. "*Under the Supporting Processes attribute for IDRBNR SAC there is a 'Restore' target for the environmental conditions in those locations that are known, or which become known, to be important for S. spinulosa reef formation. NE consider any lasting change/loss of supporting habitat for Annex I S. spinulosa reef from the placement of cable protection will hinder the recovery of this feature and therefore the ability to meet the conservation objectives for the site and would require compensation….*
5. *Natural England advises the Applicant undertakes and submits into examination an assessment of supporting habitats and processes for potential Annex I S. spinulosa reef, to demonstrate that the recovery of this feature will not be hindered by the installation of the export cable and/or the lasting placement of cable protection. This will provide the Secretary of State comfort an adverse effect on integrity to IDRBNR SAC Annex I reef features and habitats/processes in which it relies upon will be avoided."*
6. Based on this, the Applicant has undertaken the analysis of supporting habitat for *S. spinulosa* reef with a view to defining areas where removable cable protection could be deployed based on the advice provided by NE.
7. This report provides details of a mapping exercise which the Applicant has undertaken to determine the extent of potential supporting habitat for *S. spinulosa* reef within the Offshore ECC that crosses within the IDNRRB SAC, based on the criteria set out within REP3-068. The exercise has been undertaken to reach agreement on the interpretations of the methodology and results of the mapping exercise undertaken by Applicant. This was issued to Natural England on the 18th of February for review.

8. Following receipt of the initial report (which was also submitted into the into the examination at Deadline 4a, 26th February 2025) (REP4a-122), Natural England carried out a review under their Discretionary Advisory Service (DAS) and subsequently provided further advice via an email received on 24th of February. The advice was in relation to the methodology used to identify supporting habitat and proposed mitigation measures for areas of supporting habitat/processes. The relevant advice received from Natural England has been included in this version of the report submitted at Deadline 5, 13th March 2025 and is summarised in Table 1-1.
9. At Deadline 6, this report has been further updated to incorporate changes to methodology as a result of Natural England consultation and to provide a calculation of the amount of removable cable protection over the identified supporting habitat. A summary is provided below:
    - The addition of the 3 km buffer to the north of the sandbank features resulting in an additional area of 2.64 km^2 included as supporting habitat (as shown in Figure 1);
    - A further 5 discreet patches of the SS.SBR.PoR.SspiMx biotope were identified and are now included in the calculations for supporting habitat;
    - The addition of the above results in a new total area of 31.23 km^2 of supporting habitat for Annex I *S.spinulosa* reef in the IDRBNR SAC where the Offshore ECC intersects.
10. Natural England have welcomed this adjustment and requested a worst-case figure for the total area of cable protection predicted within Annex I supporting habitat. This has been provided by the Applicant in Section 3.

Table 1-1. Natural England DAS advice relevant to version 1 of this *Sabellaria spinulosa* reef supporting habitat technical note

Date	Consultee and Type of Consultation	Natural England Description/Issues Raised	Response
24th February 2025	Natural England – Discretionary Advice Service (DAS)	On behalf of the case team please find below our advice to the *Sabellaria spinulosa reef supporting habitat Technical Note: February 2025 Document Reference: 22.11 Rev: 0.1* 24.02.2025. Natural England thanks ODOW for sight of this document before submission into examination. Natural England has reviewed the document under our DAS and provides the following advice in relation to the methodology used to identify supporting habitat and proposed mitigation measures for areas of supporting habitat/processes. **Methodology** 1. Table 2 [Table 1-3], optional parameter 1 – It is not clear if this parameter has considered dominant direction tidal flows which would require an increase in the buffer from 2 km to 3 km. The figures in 'Chapter 7 Marine Physical Processes Figures Part 1 of 2' demonstrate that the dominant tidal flows and bedload transport across the ECC are in the NNW and SSW directions, and as such, we advise that the 2 km buffers applied should be extended to 3 km to align with the description of optional parameter 1 within the Technical Note.	The Applicant notes difficulty in interpreting 'Optional parameter 1,' specifically the phrasing: "within 2 km of sandbanks in any direction OR within 3 km in the direction of tidal stream, whichever is the greater 2." Our initial interpretation was that the worst-case area for the majority of the Offshore ECC was 'within a 2 km radius of the sandbanks'. This interpretation arose due the direction of the tidal stream (approximately NW-SE/ N-S, see Figure below [Figure 1] which presents tidal ellipses), we therefore did not anticipate that this would have a greater impact on the width of the corridor than the 2 km buffer applied around the entire sandbank. Furthermore, there was additional confusion surrounding the phrase "OR within 3 km in the direction of tidal stream," as it does not clearly state what the 3 km buffer is associated in relation to the tidal stream – we assume that this would be the northern points of the sandbanks for the current features of interest. We have mapped the tidal ellipse data (see figure below), which demonstrates that a 3 km buffer could be applied to the north of the sandbank features, specifically "in the direction of tidal stream." This would result in two small areas highlighted by the red cross hatch in the figure below

Date	Consultee and Type of Consultation	Natural England Description/Issues Raised	Response
			being included as supporting habitat. This additional area is 2.5 km^2. As illustrated in the figure, no other additional adjustments in relation to 'Optional parameter 1' are necessary.
24th February 2025	Natural England – Discretionary Advice Service (DAS)	2. In addition, for the avoidance of doubt, Figure 1 of the report should be updated and areas of Annex I sandbank delineated as potentially supporting habitat to Annex I *Sabellaria spinulosa* reef (i.e. using the purple hash) included/differentiated.	The Applicant notes that the Annex I sandbanks are not identified as supporting habitats for *S. spinulosa* reefs, in accordance with the methodology documentation and as established in the research. These features have been addressed with specific mitigation measures in their own context.
24th February 2025	Natural England – Discretionary Advice Service (DAS)	3. Table 2 [Table 1-3], optional parameter 2 and 4 – Natural England advises that were this parameter to be appropriately applied to the data presented in Figure 1, then all areas of the SS.SBR.PoR.SspiMx biotope (including that outside of 2 km sandbank buffer) should have been included as supporting habitat for Annex I *Sabellaria spinulosa* reef.	The Applicant notes that this area has now been included as supporting habitat for Annex I *Sabellaria spinulosa* reef as demonstrated in the Figures above, when applying the 3 km buffer to the north of the middle sandbank feature.
24th February 2025	Natural England – Discretionary Advice Service (DAS)	4. In addition, Figure 1 does not appear to include all areas that were identified as SS.SBR.PoR.SspiMx within the *Offshore Export Cable Corridor Sabellaria spinulosa Reanalysis and Report Date: December 2024 Document Reference: 15.13 V2 Revision: 2.0* and labelled as "Figure 2. Marine habitat map at Level 4 MNCR for the Project ECC, produced using project specific data from the most recent benthic habitat surveys (ENVISION, 2024)."	The Applicant notes that there is no figure labelled "Figure 2. Marine habitat map at Level 4 MNCR for the Project ECC, produced using project specific data from the most recent benthic habitat surveys (ENVISION, 2024)" however, the Applicant has applied the SS.SBR.PoR.SspiMx biotope that has been identified across all figures within this report. Most of these areas correspond with the site-specific data (APP-155), however 5 discreet patches have been identified and included in the supporting

Date	Consultee and Type of Consultation	Natural England Description/Issues Raised	Response
			habitat for *S. spinulosa* reef area, as identified in the Figures above.
24th February 2025	Natural England – Discretionary Advice Service (DAS)	Accordingly, we believe that the area of supporting habitat for Annex I S*. spinulosa* reef should be greater than that represented in Figure 1 of the *S. spinulosa* reef supporting habitat Technical Note.	Taking the above points into consideration the difference in supporting habitat for *S. spinulosa* reef from that previously presented is 2.64 km^2, equating to a total area of 31.23 km^2.
25th March 2025	Natural England Discretionary Advice Service (DAS)	Natural England welcomes the addition of the 3km buffer to the north of the sandbank features. While this satisfies our previous advice; to ensure joint understanding of the approach, we highlight that according to the methods outlined within the Applicants [*Sabellaria spinulosa* reef supporting habitat Technical Note: February 2025], much of the red cross hatch area which we have annotated with number '1' below should have been already included as supporting habitat owing to the presence of the 'SS.SBR.PoR.SspiMx - *Sabellaria spinulosa* on stable circalittoral mixed sediment' which has been mapped in that location (in alignment with optional parameters 2 and 4).	The Applicant welcomes this response.
25th March 2025	Natural England Discretionary Advice Service (DAS)	Natural England are satisfied with the Applicants proposed approach in this respect for this project and within this designated site.	The Applicant welcomes this response.
25th March 2025	Natural England	Natural England uphold our previous reference to "*Figure 2. Marine habitat map at Level 4 MNCR for*	The Applicant welcomes this response.

Date	Consultee and Type of Consultation	Natural England Description/Issues Raised	Response
	Discretionary Advice Service (DAS)	*the Project ECC, produced using project specific data from the most recent benthic habitat surveys (ENVISION, 2024i)"* which exists with within [REP4a-070]. However, we are now satisfied that optional parameter 2 has now been met and that areas which have been previously identified as SS.SBR.PoR.SspiMx biotope have now also been included as supporting habitat.	
25th March 2025	Natural England Discretionary Advice Service (DAS)	Natural England welcomes this adjustment to the area delineated as supporting habitat and agree the area of cable corridor overlap with supporting habitat impacted is 31.23km^2. In order to address some of the outstanding issues raised by the ExA in their Rule 17 request, Natural England would welcome a realistic worst-case figure for the total area of cable protection predicted within Annex I supporting habitat being provided directly to NE by yourselves **in** advance of Deadline 6. We also acknowledge that there is likely to be a need for further dialogue with yourselves on the likely implications of those impacts. Please see next point.	The Applicant welcomes this response and the agreement on the total extent of supporting habitat and the Applicant has provided an assessment of a realistic worst-case scenario for the total area of removable cable protection predicted within Annex I supporting habitats in section 3. Regarding the final point, the Applicant has updated the RIAA with an assessment of supporting habitat at Deadline 6 (document reference 7.1) and has updated the without prejudice compensation case to include the quantification of impact to Annex I supporting habitat. The following compensation documents have therefore been updated and submitted at Deadline 6. ▪ Without Prejudice Benthic Compensation Evidence Base and Roadmap (document reference 7.6.3, V4 updated at Deadline 6) and,

Date	Consultee and Type of Consultation	Natural England Description/Issues Raised	Response
			▪ Without Prejudice Biogenic Reef Compensation Plan (document reference 7.6.2, V4 updated at Deadline 6)
25th March 2025	Natural England Discretionary Advice Service (DAS)	Whilst Natural England welcomes the commitment to use only removable cable protection, we highlight that any removability shouldn't be to the wider detriment of the Annex I features, which would be the case currently in relation to rock protection. In addition, and as highlighted by the Secretary of State Decision for Norfolk Boreas, that even with the commitment to using removable cable protection and committing to removing said protection at the time of decommissioning, the impacts over the lifetime of the project, while the protection is *in situ*, were considered by the SoS to hinder the conservation objectives and have an adverse effect on integrity. Therefore, further consideration of the implications are required by the project.	The Applicant has mapped out supporting habitat in accordance with the guidance supplied and has agreed to mitigate impacts using removable cable protection within the areas identified. It should be noted that the conservation objectives of the SAC do not require that habitats with the potential to support designated habitats receive the same level of protection as the designated habitats themselves. Whilst the conservation objective focuses on maintaining and restoring the supporting processes necessary for qualifying habitats, it is not reasonable to interpret this as a requirement to protect all habitats within the SAC that could develop into Annex I reef at some undefined time as if they were reef features themselves. The Applicant considers that the further analysis and further commitment to removable cable protection in defined areas of supporting habitat bolsters the existing conclusions of the assessment that there is no AEoI. The Applicant has updated the RIAA with this detail at Deadline 6 (document reference 7.1)

1.2 Natural England methodology

11. The following method was developed by Natural England to define supporting habitat for *S. spinulosa* reef (Natural England, 2025) and was used as the foundations for this assessment. The information was first provided to the Applicant at Deadline 3 (13th December 2024) within Appendix C3 of the Natural England Deadline 3 response (REP3-067). This approach builds upon numerous studies which have researched the environmental characteristics that support *S. spinulosa* reef, including those in Table 1-2.
12. Natural England state that:

    "*S. spinulosa* reef listed as a feature/sub-feature, could be considered likely to support Annex I *S. spinulosa* reef where: BOTH of the 'essential' environmental parameters listed below are present together with at least one of the 'optional' parameters (Please see footnotes for further information and/or rationale). Note that the greater the number of additional 'optional' parameters met within a given area, the higher the quality the supporting habitat is likely to be".

    1. ESSENTIAL - Location is subject to moderate to strong tidal flows/wave action.
    2. ESSENTIAL - Sediment character meets one or more of the descriptions within Table 1-2.

    AND EITHER

    1. OPTIONAL – Location is within an area of sand waves/sandbanks OR within 2 km of sandbanks in any direction OR within 3km in direction of tidal stream, whichever is the greater[1].

    - OPTIONAL – Location is within an area where *S. spinulosa* reef may currently be absent, but where reef OR the SS.SBR.PoR.SspiMx biotope (EUNIS A5.611) has been previously identified in one or more sampling events (with a moderate or high level of confidence).
    - OPTIONAL - Individual *S. spinulosa* count is >375 per 0.1m^2 within a given sediment type polygon[2,3]
    - OPTIONAL – Location is within an area/polygon mapped as the SS.SBR.PoR.SspiMx biotope (EUNIS A5.611)[4].

[1] These distances have been based on results from a review of sandy sediment transport studies conducted by Spearman (2015), as well as the results of data analysis within HHW SAC (Natural England, 2024 – In draft).
[2] Abundance threshold has been based on a study by Envision in The Wash (Foster-Smith and Sotheran, 1999 in Limpenny et al., 2010) which reported that reef structures were associated with samples containing densities of *S. spinulosa* individuals greater than 375 per 0.1m^2
[3] Count data should not be overruled by DDV evidence because positional accuracy during surveys is highly unlikely to be sufficient to permit a direct cross reference between the data generated from the two different survey methods.
[4] Where the SS.SBR.PoR.SspiMx (EUNIS A5.611) biotope appears transitional and/or questionable, the precautionary approach should be applied and the area should be considered potentially supporting if the 'essential' parameters above are present.

2. OPTIONAL - Elevation of dead OR living tubes is ≥ 5cm (average) but where reef has not been defined, owing to low percentage cover/patchiness[5].”

- OPTIONAL – Where extent of encrusting *S. spinulosa* tubes (dead OR alive) are >10,000m2 but where average elevation has not been sufficient to categorise the area as Annex I reef according to Gubbay (2007)[6].

Table 1-2 Review of sediment characteristics reported to support *S. spinulosa* reef (Natural England, 2025)

Sediment Character	Reference
“Mixed sediment”	▪ Connor *et al*., (1997) ▪ Gibb *et al*., (2014) ▪ OSPAR 2010 ▪ NRW (2019)
“Typical shell (especially oyster valves), sandy gravel”	▪ Rees and Dare (1993)
“Sandy gravel”	▪ Newell *et al*., (2001) ▪ Seiderer and Newell (1999)
“Sandy and mixed coarser sediments”	▪ Gubbay (2007)
“Essentially sandy”	▪ Schafer (1972) ▪ Warren (1973) ▪ Warren and Sheldon (1967)
“Medium fine sand, but favours silty, cobble/gravel habitats rather than purely sandy habitats” “Grave; ribbons next to mobile sand features, thin veneers of mobile sand over gravel lags and sides of shelly sand banks”	▪ Limpenny et al., (2010)
“Medium to coarse sand dominated”	▪ Natural England *in draft* (due for publication in 2025)
“Sandy and coarse sediments”	▪ Natural England (2019)

[5] This optional parameter has been added on the basis that areas of reef which are sufficiently elevated to qualify as reef according to Gubbay (2007) but demonstrate a high degree of patchiness could represent areas of reef that have been moderated by fishing impacts. Greater elevation suggests greater potential as high-quality supporting habitat.

[6] This optional parameter has been added on the basis that extensive areas of encrusting *S. Spinulosa* may suggest that the location has good potential as supporting habitat in the absence of anthropogenic pressures. However, we suggest that at least one other ‘Optional’ parameter would also be required to provide the necessary weight to any decision making.

1.3 Review of available data

13. The Applicant reviewed available datasets that were required as both 'Essential' and 'Optional' by Natural England's methodology (Natural England, 2025) for the Offshore ECC where the IDRBNR SAC overlaps. The data identified in Table 1-3 was collated and a review undertaken.

Table 1-3 Parameters and datasets used to inform this assessment

Natural England Parameters	Natural England Parameter Description	Identified relevant dataset and description	Parameter incorporated into assessment?
Essential parameter 1	Location is subject to moderate to strong tidal flows/wave action.	There is moderate to strong tidal flows/wave action across the site (ABPmer, 2025)	Yes, parameter threshold *is* met across the whole of the Offshore ECC.
Essential parameter 2	Sediment character meets one or more of the descriptions within Table 1-2.	Site-specific data were collected across the Offshore ECC (GEOxyz, 2022): • Geophysical survey using multibeam echosounder (MBES), side-scan sonar (SSS), sub-bottom profiler (SBP), magnetometry and ultra-high resolution seismic (UHRS). • Benthic sediment grab samples were collected with 0.1m^2 Hamon grab at locations within the Offshore ECC (59 stations). All benthic grab samples were subject to infaunal species analysis and Particle Size Analysis (PSA) as well as chemical contaminants analysis stations and video footage stations. The sediment character presented in Figure 1 that match the review of sediment	Yes, sediment character (seabed features) has been presented in Figure 1.

Natural England Parameters	Natural England Parameter Description	Identified relevant dataset and description	Parameter incorporated into assessment?
		characteristics reported to support *S. spinulosa* reef (Table 1-2) include: • Circalittoral coarse sand (sand with shell gravel) • Circalittoral coarse sand (sand with shell, pebbles and cobbles) • Circalittoral mixed sediment • *S. spinulosa* on stable circalittoral mixed sediment 'Cirrcalittoral muddy sand' was the only sediment character that did not meet the description identified within Table 1-2. Circalittoral muddy sand' was the only sediment character that did not meet the description identified within Table 1-2. Furthermore, *S. spinulosa* is not known to form reef directly on sandbanks and so these areas were not included in the assessment.	
Optional parameter 1	Location is within an area of sand waves/sandbanks OR within 2 km of sandbanks in any direction OR within 3 km in direction of tidal stream, whichever is the greater.	Annex I sandbanks are present in the west, mid-section, and east of the site (JNCC, 2025) and locations within 2 km of sandbank features have been identified. The primary direction of the tidal stream is north-south. As such, a 3 km buffer was also applied to the north of the sandbanks to ensure the maximum area across the Offshore ECC in relation to this parameter was captured.	Yes, Annex I Sandbanks have been presented in Figure 1 and a 2 km and 3 km buffer has been applied and presented. The Annex I Sandbank features have been addressed with specific mitigation measures in

Natural England Parameters	Natural England Parameter Description	Identified relevant dataset and description	Parameter incorporated into assessment?
			their own right (including removeable cable protection) as detailed within the Schedule of Mitigation (APP-287).
Optional parameter 2	Location is within an area where *S. spinulosa* reef may currently be absent, but where reef OR the SS.SBR.PoR.SspiMx biotope (EUNIS A5.611) has been previously identified in one or more sampling events (with a moderate or high level of confidence).	An analysis of site-specific benthic sample data (GEOxyz, 2022; ENVISION, 2024b) demonstrates that the biotope *S. spinulosa* on stable circalittoral mixed sediment (SS.SBR.PoR.SspiMx) occurs within the Offshore ECC.	Yes, areas of the biotope SS.SBR.PoR.SspiMx are presented in Figure 1.
Optional parameter 3	Individual *S. spinulosa* count is >375 per 0.1m^2 within a given sediment type polygon.	This count threshold was met at 3/8 grab sample stations that were spread throughout the offshore ECC (ENVISION, 2024b).	Yes, count data is presented in Figure 1.
Optional parameter 4	Location is within an area/polygon mapped as the SS.SBR.PoR.SspiMx biotope (EUNIS A5.611)	Present within the central area of the Offshore ECC that overlaps the SAC (GEOxyz, 2022; ENVISION, 2024b).	Yes, areas of the biotope SS.SBR.PoR.SspiMx are presented in Figure 1.
Optional parameter 5	Elevation of dead OR living tubes is ≥ 5cm (average) but where reef has not been defined, owing to low percentage cover/patchiness.	The site-specific data evidenced that average tube height was ≤ 5 cm at all sites where video assessment took place within the Offshore ECC (ENVISION, 2024b).	Yes, but parameter threshold *is not* met from available historic data within site, so data is not mapped.
Optional parameter 6	Where extent of encrusting *S. spinulosa* tubes (dead OR alive) are >10,000 m^2 but where average elevation has not been sufficient	The extent of *S. spinulosa* doesn't reach this threshold across the site from the historic datasets (ENVISION, 2024b), therefore not relevant to this assessment.	Yes, but parameter threshold *is not* met across site from available historic data, so data is not mapped.

Natural England Parameters	Natural England Parameter Description	Identified relevant dataset and description	Parameter incorporated into assessment?
	to categorise the area as Annex I reef according to Gubbay (2007).		

2 Results

14. Figure 1 shows areas of habitat that are potentially suitable for supporting *S. spinulosa* reef within the section of the Offshore ECC that crosses with the IDRBNR SAC. Supporting habitat was located within four distinct areas. Within these areas, variable bed features (sediment types) were present (as determined by the site-specific data and interpretation (GEOxyz, 2022; ENVISION, 2024b)), including "circalittoral coarse sand (sand with shell and gravel)", "circalittoral mixed sediment", "circalittoral muddy sand" and "*Sabellaria spinulosa* on stable circalittoral mixed sediment".
15. The mapping exercise has identified the following areas:
    - Supporting Habitat: 31.23 km²
    - Non-Supporting Habitat: 10.66 km²
16. Supporting habitat was mainly identified within 2 km and 3 km of the sandbanks, and five smaller areas just outside of this buffer (approximately 3-4 km from the sandbank) within the mid-section of the Offshore ECC.
17. Non-supporting habitat was also present within the Offshore ECC, lying outside of the 2 km and 3 km buffers around the sandbanks in areas with variable bed features (sediment types) in line with the Natural England methodologies (Natural England, 2025).

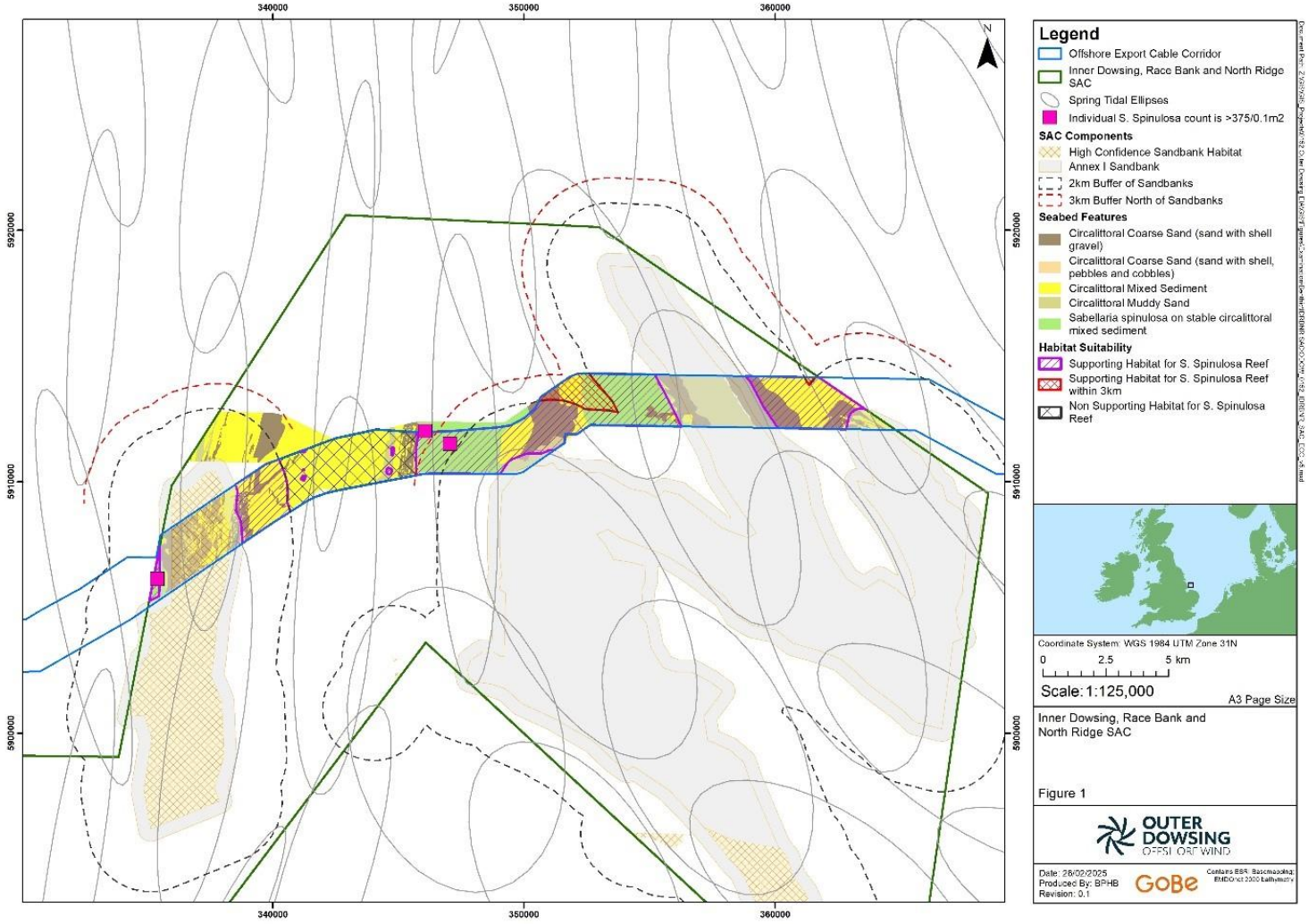

Figure 1. Habitat suitability for *Sabellaria spinulosa* reef within the Outer Dowsing Offshore Windfarm Export Cable Corridor (ECC) and Inner Dowsing, Race Bank and North Ridge Special Area of Conservation (IDRBNR SAC).

3 Cable protection requirements

18. At Deadline 6 this technical note was used to inform updates to the RIAA (document reference 7.1) and further engineering calculations were carried out to determine the amount of removable cable protection as a worst-case that would be required within the supporting habitats of Annex I *S. spinulosa* within the IDRBNR SAC. The calculations provided in Table 3-1 show, as a worst-case scenario, that the amount of removable cable protection within the areas of supporting habitats for Annex I *S. spinulosa* reef will be 0.095 km^2.

Table 3-1 Calculation of area of removable cable protection within areas of supporting habitat for *S.spinulosa*.

Calculation Step Description	Value	Unit
Number of Cables	4	each
Length of transit for each cable through Supporting Habitat	16562.5	m
Length of transit for all cables through Supporting Habitat	66250	m
20% of total length	13250	m
Number of mattresses required (rounded up)	4417	each
Each mattress footprint	18	m^2
Footprint within Supporting Habitat	79506	m^2
20% allowance for installation accuracy and slippage	15901.2	m^2
Total Footprint for Supporting Habitat	95407.2 (0.0954)	m^2 (km^2)

19. The Applicant has committed to using removable cable protection in areas of supporting habitat for Annex I *S. spinulosa* and the Applicant maintains in the updated RIAA (document reference 7.1) that there will be no AEoI on the IDRBNR SAC on biogenic reef features.

4 Conclusions

20. Following the assessment of supporting habitat for *S. spinulosa* reef using Natural England's approach, potential supporting habitat for *S. spinulosa* reef is present as shown in Figure 1.
21. The Applicant notes that the assumption was made within the RIAA and EIA process that supporting habitat was present. This identification of the potential supporting habitat is presented herein to gain agreement with Natural England as to the delineation of "supporting habitat" to facilitate discussions on the need for any further mitigation.
22. The Applicant maintains that the conservation objectives of the SAC do not require that habitats with the potential to support designated habitats receive the same level of protection as the designated habitats themselves. While the conservation objective focuses on maintaining and restoring the supporting processes necessary for qualifying habitats, it is not justified to interpret this as a requirement to preserve all habitats within the SAC that could develop into Annex I reef at some undefined time, as if they were reef features themselves.
23. Notwithstanding this position, the Applicant has committed to the installation of removeable cable protection on the defined areas of supporting habitat for *S. spinulosa reef* identified in Figure 1. This commitment is detailed within the Outline Scour and Cable Protection Management Plan (8.21) and in the Outline Cable Specification and Installation Plan (8.5), secured under condition 13(1)(d), Part 2, Schedule 11 of the DCO.
24. The Applicant as a worst-case scenario has calculated that 0.095 km^2 of removable cable protection may be used within areas of potential supporting habitat for *S. spinulosa*.

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