



**AQUIND Limited**

---

# **AQUIND INTERCONNECTOR**

## **Habitat Regulations Assessment Validity Report**

Document Ref: Habitat Regulations Assessment Validity Report

PINS Ref.: EN020022

**AQUIND Limited**

---

# **AQUIND INTERCONNECTOR**

## **Habitat Regulations Assessment Validity Report**

**PINS REF.: EN020022**

**DOCUMENT: HABITAT REGULATION ASSESSMENT VALIDITY REPORT**

**DATE: APRIL 2023**

## DOCUMENT

<b>Document</b>	<b>Habitats Regulation Assessment Validity Report</b>
<b>Revision</b>	001
<b>Document Owner</b>	Natural Power/WSP
<b>Prepared By</b>	Natural Power/WSP
<b>Date</b>	20 March 2023
<b>Approved By</b>	Natural Power/WSP
<b>Date</b>	18 April 2023

## CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>1</b>
<b>1. INTRODUCTION</b>	<b>3</b>
<b>2. VALIDITY REVIEWS</b>	<b>4</b>
<hr/>	
<b>2.1. SITES REVIEW:</b>	<b>4</b>
<b>2.2. SITE FEATURES REVIEW:</b>	<b>5</b>
<b>2.3. SITE ADVICE ON OPERATIONS REVIEW:</b>	<b>6</b>
<b>2.4. SITE CONSERVATION OBJECTIVES AND SUPPLEMENTARY ADVICE REVIEW:</b>	<b>10</b>
<b>2.6. HRA IN-COMBINATION PROJECTS LIST REVIEW:</b>	<b>13</b>

## ANNEXES

**Annex A – Woodward *et al.* (2019) Review**

**Annex B - Site Features Review Tables**

**Annex C – Advice On Operations Review Tables**

## TABLES

<b>Annex B: Table B.1: Annex I Habitats .....</b>	<b>33</b>
<b>Annex B: Table B.2: Annex II Migratory Fish .....</b>	<b>34</b>
<b>Annex B: Table B.3: Marine Mammals.....</b>	<b>36</b>
<b>Annex B: Table B.4: Marine Ornithology.....</b>	<b>37</b>
<b>Annex B: Table B.5: Onshore Ecology.....</b>	<b>42</b>

**Annex C: Revised Table 6.8 - Predicted effects of the marine elements of the Proposed Development on relevant Annex I habitat Qualifying Features [C = construction phase O = operation phase D = decommissioning phase] ..... 45**

**Annex C: Revised Table 6.9 - Predicted effects of the marine elements of the Proposed Development on relevant Annex II Migratory Fish Qualifying Features [C = construction phase O = operation phase D = decommissioning phase] ..... 51**

**Annex C: Revised Table 6.10 - Pressures listed for the different UK SACs and the corresponding effects which were assessed for all marine mammal sites. The pressures relate to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated ..... 53**

**Annex C: Revised Table 6.11 - Potential effects on marine ornithology features across all phases of the Proposed Development. The pressures relate to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated..... 54**

**Annex C: Revised Table 6.12 - Potential effects on onshore ecology features across all phases of the Proposed Development. The pressures relate to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated. .... 64**

---

# EXECUTIVE SUMMARY

---

This document presents the results of a review undertaken to examine the validity of the submitted Habitats Regulations Assessment (HRA) (REP8-020) for the Proposed Development.

The exercise undertaken includes a review of the following information:

- A review of the sites assessed and those screened out of assessment to identify whether any new sites have been designated since submission and whether all designated sites have been assessed.
- A review of the features of each UK and European site (SACs, SPAs and Ramsars) assessed within the HRA to identify whether any of the qualifying or notified features have changed for each site.
- A review of the *Advice on Operations* for sites to identify whether there are any changes to the pressures associated with the four operations assessed (and agreed with Natural England and Joint Nature Conservation Committee) for each feature of each site and whether this affects the conclusions of the assessment.
- A review to identify whether there have been any changes to the *Conservation Objectives and Supplementary Advice Attributes and Targets* presented in Appendix 6 of the HRA (REP6-058) for UK sites assessed (and taken forward for Stage 2 Appropriate Assessment).
- A review and update to the in-combination project lists presented in Appendix 3 of the HRA (REP1-086) and Figure 8.1 (REP7-031) has been undertaken to identify whether the conclusions made for all European sites assessed within the existing in-combination assessments remain valid or have changed.

The review exercises have concluded the following;

- In all cases, no new sites have been designated that would require consideration in the HRA, based upon the same screening criteria as employed for the initial application or based on updated published foraging ranges (see Annex A). This included consideration of both UK (marine and terrestrial) and transboundary European sites. Therefore, the existing assessments remain valid.
- In all cases, no new features have been identified, and there have not been any changes to the relevant features already assessed for both UK (marine and terrestrial) and transboundary European sites. Therefore, the existing assessments on features remain valid.
- In all cases, no additional pressures or effects have been identified for assessment at any phase of development. Therefore, the existing assessments remain valid.

- In all cases, no additional attributes/targets have been identified for assessment at any phase of development and there are no changes to the conservation objectives already assessed for both UK (marine and terrestrial) and transboundary European sites. Therefore, the existing assessments remain valid.
- In all cases, it has been concluded that the existing in-combination assessments for both UK (marine and terrestrial) and transboundary European sites remain valid and that the conclusions of the HRA remain the same.

As such, it is considered that all relevant UK and European sites over a large area have been assessed sufficiently to enable a decision to be reached in respect of all sites that no adverse effects on site integrity will arise as a result of the Proposed Development either alone or in combination with other plans and projects.

# 1. INTRODUCTION

---

The validity of the Habitats Regulation Assessment (HRA) Report (REP8-020) and accompanying appendices have been reviewed employing the following stepwise methodology, and the results of this validity review are presented in the following sections of this document.

The review exercises undertaken include:

- Sites Review;
- Site Features Review;
- Site Advice On Operations Review;
- Site Conservation Objectives and Supplementary Advice Review;
- In combination Assessment Review

An exercise has been undertaken to identify whether there have been any changes to conservation objectives for all UK sites assessed (SACs, SPAs and Ramsars taken forward for Stage 2 Appropriate Assessment) in instances where there has been an update by Natural England since December 2020 (which was when document reference 7.7.18 Appendix 6 of the HRA (REP6-058) which presents conservation objectives was submitted). The review has also included UK marine sites that were employed as proxy sites for French designated sites (taken forward for Stage 2 Appropriate Assessment) because information for those sites was not available at the time and remains not available.

Where changes to any component of the advice on designated sites have been identified, these have been assessed as to whether the conclusions made in relation to adverse effects on site integrity remain valid.



## 2. VALIDITY REVIEWS

---

### 2.1. SITES REVIEW:

A review of the sites assessed and those screened out of assessment has been undertaken employing the same screening criteria as agreed with Natural England (NE) and Joint Nature Conservation Committee (JNCC) at the time (see Section 6 of the HRA Report (REP8-020)). This review is to identify whether any new sites have been designated since submission of the HRA that would now be considered for assessment under those same screening criteria.

Following review, it was concluded that in all cases, no new sites have been designated that would require consideration in the HRA, based upon the same screening criteria as employed for the initial application. This included consideration of both UK (marine and terrestrial) and transboundary European sites.

It is however, recognised that new guidance on breeding seabird colony connectivity has been published and adopted by Nature Conservation bodies which recommends the distances over which marine ornithology receptors should be considered. This new guidance (Woodward *et al.*, 2019<sup>1</sup>) updates the published foraging ranges previously defined in Thaxter *et al.*, (2012)<sup>2</sup> which were used within the HRA for the Proposed Development.

For completeness, an assessment has been undertaken that examines the use of Woodward *et al.* (2019) seabird foraging ranges in order to determine that all sites and species with potential connectivity to the Proposed Development have all been adequately assessed. This assessment is presented in Annex A of this document.

The assessment in Annex A concludes that, although the distances published in Woodward *et al.*, (2019) may in some cases be considerably greater than those published in Thaxter *et al.*, (2012), the HRA does not require to be updated in light of this new information because the assessment in Annex A confirms that the existing HRA is suitably conservative for the type of project and resulting impacts that may arise.

As such, it is considered that all relevant European sites over a large area have been assessed sufficiently to enable a decision to be reached in respect of all European Sites that no adverse effects on site integrity will arise as a result of the Proposed Development either alone or in combination with other plans and projects.

---

<sup>1</sup> Woodward, I., Thaxter, C. B., Owen, E. and Cook, A. S. C. P. (2019) Desk-based revision of seabird foraging ranges used for HRA screening. BTO Research Report No. 724. The British Trust for Ornithology, The Nunnery, Thetford, Norfolk, IP24 2PU

<sup>2</sup> Thaxter, C. B., Lascelles, B., Sugar, K., Cook, A. S. C. P., Roos, S., Bolton, M., Langston, R. H. W. and Burton, N. H. K. (2012). Seabird Foraging Ranges as a Preliminary Tool for Identifying Candidate Marine Protected Areas. *Biological Conservation* 156: 53-61.

## **2.2. SITE FEATURES REVIEW:**

A review of the features of each European site (SACs, SPAs and Ramsars) assessed within the HRA has been undertaken employing the same screening criteria as agreed at the time with NE and JNCC to identify whether any of the qualifying or notified features have changed for each site, except for marine ornithology where mean max. plus 1 S.D. foraging ranges (Woodward *et al.* 2019) have been used to determine feature connectivity.

The tables presented in Annex B present the review undertaken and identify whether any features to UK and transboundary sites assessed have changed.

### **2.2.1. ANNEX I HABITATS**

No changes to features assessed have been identified.

### **2.2.2. ANNEX II MIGRATORY FISH**

No changes to features assessed have been identified.

### **2.2.3. MARINE MAMMALS**

No changes to features assessed have been identified.

### **2.2.4. MARINE ORNITHOLOGY**

Updated seabird foraging distances as published in Woodward *et al.*, (2019) have been considered and there are no changes to the features assessed in sites identified in the HRA as a result of this updated information.

### **2.2.5. ONSHORE ECOLOGY**

No changes to features assessed have been identified.

### **2.2.6. FEATURES REVIEW CONCLUSION**

This review can conclude that in all cases, no new features have been identified as requiring stage 2 assessment in the HRA, and there have not been any changes to the relevant features already assessed. Therefore, the existing assessments on features remain valid.

### 2.3. SITE ADVICE ON OPERATIONS REVIEW:

The *Advice on Operations* for a number of UK European sites provided by Natural England<sup>3</sup> was updated in March 2022. Therefore, the pressures associated with the four operations assessed (agreed with NE and JNCC) for each feature of each site have been reviewed to identify whether there are any changes in the advice and whether this affects the conclusions of the assessment.

This includes those UK European sites that have been employed as proxy sites for French European sites because Advice on Operations are not available for French designations.

The four operations considered were:

- Cables HDD
- Power Cables: Laying, Burial and Protection
- Power Cables: Operation and Maintenance
- Power Cables: Decommissioning

Although Natural England publishes information on what the package updates include<sup>4</sup>, this information ‘...does not detail every individual change/update that has taken place...but highlights key changes...’. Therefore, a detailed review of the Advice on Operations has been undertaken to identify any detailed changes. Any changes identified have then been reviewed to determine whether the conclusions made within the existing assessments to determine Likely Significant Effects (LSE) remain valid or have changed as a result of the updates.

The tables presented in Annex C present the review undertaken and identify whether any changes have occurred in respect of the Advice at a features level. Any changes are shown in green text.

Each pressure includes a risk level (Medium-High risk or Low risk), and an interaction type (S – Sensitive; IE – Insufficient evidence to assess; NA – Not assessed; NS – Not sensitive at the benchmark).

For all the UK sites being considered as part of the LSE screening stage, those pressures (both Medium-High risk or Low risk) that have been classed as ‘Sensitive’, ‘Insufficient Evidence’ or ‘Not Assessed’ have been included in the assessment. Pressures ranked as Not Sensitive were not included in the assessment, as agreed with Natural England (see Section 6.4. of HRA Report (REP8-020)).

#### 2.3.1. ANNEX I HABITATS

Sites where Advice on Operations were available and where updates have been implemented since March 2021 (when the HRA was submitted) were:

---

<sup>3</sup> [REDACTED]

<sup>4</sup> [REDACTED]

- Solent Maritime SAC; and
- South Wight Maritime SAC.

There have not been changes to the pressures for Advice on Operations for the Solent Maritime SAC. Therefore, it is considered that the conclusions of the HRA remain valid for this site in this regard.

Two changes were identified for the South Wight Maritime SAC. The changes in pressures include the Reef qualifying feature for South Wight Maritime SAC. It was previously considered sensitive to the pressure “*physical change to another sediment type*” during Construction, Operations & Maintenance and Decommissioning activities. However, the recent update considers the feature is only sensitive to this pressure during Construction activities.

There is no change to the Reef qualifying feature being considered sensitive to the pressure “*physical change to another sediment type*” during Horizontal Directional Drilling. On this, Natural England advise this pressure must be screened in where cable or scour protection material is used. Rock dumping, rock bags, concrete mattresses or other forms of protection may be used to stabilise pipe ends following completion of the HDD process and duct installation and prior to cable installation. These may be removed when cables are installed, although proposals often include the use of such materials to backfill excavation pits should sufficient backfill material not be available. Use of these materials will result in a change of habitat type. However, Natural England consider the risk to be Low and state that unless there are evidence-based case or site-specific factors that increase the risk, or uncertainty on the level of pressure on a receptor, this pressure generally does not occur at a level of concern and should not require consideration as part of an assessment. The previous HRA assessment concluded that the HDD exit/entry pit lies circa 0.24 km from the boundary of the SAC. Therefore, there is no pathway for the pressure “*physical change to another sediment type*” to affect the integrity of the Reef feature of the SAC. As such, there is a high level of confidence that the conclusions of this assessment remain valid.

As the pressure ‘*physical change to another sediment type*’ was assessed within the HRA for the Proposed Development during construction, it is considered that this change to the advice does not affect the assessment, and there is a high level of confidence that the conclusions of the HRA remain valid.

In addition, the Reef qualifying feature was previously considered sensitive to the pressure “*barrier to species movement*” during Construction activities only. However, the recent update considers the feature sensitive to this pressure during Operation and Maintenance activities in relation to electromagnetic fields (EMF). On this, Natural England advise that electromagnetic fields have the potential to disrupt migratory routes of species that use the earth's magnetic field to navigate. However, they consider the risk to be Low and state that unless there are evidence-based case or site-specific factors that increase the risk, or uncertainty on the level of pressure on a receptor, this pressure generally does not occur at a level of concern and should not require consideration as part of an assessment. The previous HRA assessment concluded that effects of EMF will not extend outside the Marine

Cable Corridor, and therefore, given that there is no overlap of the SAC with the Marine Cable Corridor, there will be no effect on the reef feature from the *barrier to species movement* pressure (i.e. EMF). As such, there is a high level of confidence that the conclusions of this assessment remain valid irrespective of this change in the advice.

### 2.3.2. ANNEX II MIGRATORY FISH

Sites where Advice on Operations were available and where updates have been implemented since March 2021 (when the HRA was submitted) include:

- Plymouth Sound and Estuaries SAC which was assessed and employed as a proxy site for River Itchen, River Avon and French transboundary SACs for salmon and twaite shad features; and
- Humber Estuary SAC which was employed as a proxy site for River Axe, River Avon and French transboundary SACs for sea lamprey and river lamprey features.

Following consideration of the changes to the Advice on Operations packages, it is considered that the conclusions of the HRA remain valid in respect of Annex II migratory fish species. This is because the changes do not in any way alter the effects that would be considered in the assessment, and it is considered that all potential pressures and resulting effects, as identified by the Advice on Operations, are assessed.

### 2.3.3. MARINE MAMMALS

Sites where Advice on Operations were available and where updates have been implemented since March 2021 (when the HRA was submitted) include:

- The Wash and North Norfolk Coast SAC which was employed as a proxy site French transboundary SACs for harbour seal features.

No other sites employed as proxy sites had updates since March 2021. There have not been any changes to the pressures for Advice on Operations for the updated site. Therefore, it is considered that the conclusions of the HRA remain valid in respect of marine mammals.

### 2.3.4. MARINE ORNITHOLOGY

Sites where Advice on Operations were available and where updates have been implemented since March 2021 (when the HRA was submitted) include:

- Solent and Dorset Coast SPA;
- Chichester and Langstone Harbour SPA;
- Portsmouth Harbour SPA;
- Solent and Southampton Water; and
- Pagham Harbour SPA.

All the above sites were employed as proxy sites for French transboundary SPAs for the relevant qualifying features.

There have not been changes to the pressures for Advice on Operations for these updated sites. Given that no further changes have been made to the pressures to any of the sites, it is considered that the conclusions of the HRA remain valid in respect of marine ornithology.

### **2.3.5. ONSHORE ECOLOGY**

Sites where Advice on Operations were available and where updates have been implemented since March 2021 (when the HRA was submitted) include:

- Chichester and Langstone Harbour SPA; and
- Portsmouth Harbour SPA.

There have not been changes to the pressures for Advice on Operations for these updated sites. Given that no further changes have been made to the pressures to any of the sites, it is considered that the conclusions of the HRA remain valid in respect of onshore ecology.

### **2.3.6. ADVICE ON OPERATIONS REVIEW CONCLUSION**

The results of this review reveal that in all cases, no additional effects have been identified for assessment at any phase of development. Therefore, the existing assessments remain valid.

## 2.4. SITE CONSERVATION OBJECTIVES AND SUPPLEMENTARY ADVICE REVIEW:

An exercise has been undertaken to identify whether there have been any changes to the conservation objectives and supplementary advice attributes and targets for UK sites assessed (taken forward for Stage 2 Appropriate Assessment) in instances where there has been an update by Natural England since December 2020 (which was when Appendix 6 of the HRA (REP6-058) which presents site attributes and targets was submitted). The review has included UK marine sites that were employed as proxy sites for French designated sites (taken forward for Stage 2 Appropriate Assessment) because information for those sites was not available at the time and remains not available. Changes to the supplementary advice are shown in the accompanying Revised Appendix 6 in red.

Any changes have been reviewed to identify whether the conclusions made within the existing assessments to determine adverse effects on site integrity remain valid.

### 2.4.1. ANNEX I HABITATS:

The conservation objectives and supplementary advice for both sites (Solent Maritime and South Wight Maritime SACs) assessed for adverse effects to site integrity have not changed since submission of the assessment Appendix 6 (REP6-058) in December 2020. Therefore, the existing assessments undertaken remain valid.

### 2.4.2. ANNEX II MIGRATORY FISH:

The only site where an update to conservation objectives has occurred since December 2020 is Plymouth Sound and Estuaries SAC. The conservation objectives for all other sites assessed for adverse effects to site integrity have not changed where there has been a more recent update since submission. No changes have been identified from the updated site to those conservation objectives presented in Appendix 6.

The supplementary advice for the following sites has been updated since December 2020:

- River Itchen SAC;
- River Wye SAC (proxy site for French transboundary sites);
- River Avon SAC; and
- River Axe SAC.

The conservation objectives for all European sites assessed for adverse effects to site integrity have not changed for sites where there has been a more recent update since submission. Therefore, the existing assessments undertaken remain valid.

### 2.4.3. MARINE MAMMALS:

The only European site assessed for adverse effects to site integrity where an update to conservation objectives has occurred since December 2020 is The Wash and North Norfolk Coast SAC. However, the conservation objectives have not changed from those presented in Appendix 6 for this site.



The only European site assessed for adverse effects to site integrity where an update to the supplementary advice has occurred since December 2020 is The Wash and North Norfolk Coast SAC. A new attribute of '*Disturbance caused by human activity*' (no target listed) has been identified in The Wash and North Norfolk SAC (used as a proxy for harbour seal) however, this is not expected to change the conclusions already made within the existing assessments. Disturbance was considered in the March 2021 HRA Report (document ref: 6.8.1) and no LSE was concluded as a result of the Proposed Development either alone or in combination with other plans/projects. Therefore, the existing assessments remain valid.

#### 2.4.4. MARINE ORNITHOLOGY:

The conservation objectives and supplementary advice for the following European sites have been updated since December 2020:

- Solent and Dorset SPA;
- Chichester and Langstone Harbour SPA;
- Portsmouth Harbour SPA; and
- Solent and Southampton Water SPA.

The conservation objectives for all European sites assessed for adverse effects have not changed for sites that have been updated since submission.

Further, the supplementary advice packages for the majority of European sites assessed for adverse effects to site integrity have not changed where there has been a more recent update since submission. The only supplementary advice package that has changed since submission is for Solent and Dorset Coast SPA. Changes are highlighted in red in the accompanying Revised Appendix 6 document. The changes identified show that a number of attributes have been removed from the supplementary advice package and in all cases these attributes were not considered relevant to the assessment. Other changes identified show a slight change in wording of some targets that were not considered relevant to the assessment.

One target for the *Supporting habitat: food availability* attribute which was considered relevant to the assessment however, this change only changed the names of prey species and would not change the assessment undertaken. None of these changes to attributes or targets are considered to impact the assessments already undertaken. Therefore, the existing assessments undertaken remain valid.

#### 2.4.5. ONSHORE ECOLOGY

The conservation objectives and supplementary advice for the following European sites have been updated since December 2020:

- Chichester and Langstone Harbour SPA; and
- Portsmouth Harbour SPA.



The conservation objectives for all European sites assessed for adverse effects have not changed for sites that have been updated since submission.

Further, the supplementary advice packages for the sites assessed for adverse effects to site integrity have not changed where there has been a more recent update since submission. Therefore, the existing assessments undertaken remain valid.

#### **2.4.6. SUPPLEMENTARY ADVICE REVIEW CONCLUSIONS**

The results of this review reveal that in all cases, no additional attributes/targets have been identified for assessment at any phase of development and there are no changes to the conservation objectives already assessed. Therefore, the existing assessments remain valid.

## 2.6. HRA IN-COMBINATION PROJECTS LIST REVIEW:

An update to the in-combination project lists presented in Appendix 3 of the HRA (REP1-086) and Figure 8.1 (REP7-031) has been undertaken and updates are presented in the accompanying Revised Appendix 3 and Revised Figure 8.1A. The revised project lists for each topic and figures have been reviewed to identify whether the conclusions made for all European sites assessed within the existing in-combination assessments remain valid or have changed.

Projects that are no longer in the datasets or where applications have been refused have strikethroughs in the matrix and are coloured **red**. These projects no longer have valid marine licences/permissions and are considered to be removed from the in combination scenario. In addition, projects where the permission/licence end dates are before September 2024 also have strikethroughs and are coloured **red** as the revised indicative construction programme for the Proposed Development is Q4 2024-2026 (which is identified to be the earliest point at which construction could commence) and therefore, those projects will be completed prior to construction works for the Proposed Development having begun.

New projects that have come forward have been included within the matrix in Appendix 3 and are illustrated as Figure 8.1A Sheets 1 and 2. New projects were included where licence end dates fell beyond September 2024 and where the marine works fell within the Zones of Influence and were of a nature and scale to be considered for in combination assessment. In addition, where project updates are available these have been taken into account and included below. These projects and any changes made in respect of projects previously identified and which remain relevant are coloured in **green**.

### 2.6.1. ANNEX I HABITATS

After reviewing the changes of the in-combination project list for Annex I habitats presented in Revised Appendix 3 and Figure 8.1A, it has been concluded that the existing in-combination assessments for SACs remain valid and that the conclusions of the HRA remain the same.

### 2.6.2. ANNEX II MIGRATORY FISH

After reviewing the changes of the in-combination project list for Annex II migratory fish presented in Revised Appendix 3 and Figure 8.1A, it has been concluded that the existing in-combination assessments for SACs remain valid and that the conclusions of the HRA remain the same.

### 2.6.3. MARINE MAMMALS

After reviewing the changes of the in-combination project list for marine mammals presented in Revised Appendix 3 and Figure 8.1A, it has been concluded that the existing in-combination assessments for SACs remain valid and that the conclusions of the HRA remain the same.

#### **2.6.4. MARINE ORNITHOLOGY**

After reviewing the changes of the in-combination project list for marine ornithology presented in Revised Appendix 3 and Figure 8.1A, it has been concluded that the existing in-combination assessments for SPAs remain valid and that the conclusions of the HRA remain the same.

#### **2.6.5. ONSHORE ECOLOGY**

After reviewing the changes of the in-combination project list for onshore ecology presented in the revised Appendix 3, it has been concluded that that the existing in-combination assessments for SPAs remain valid and that the conclusions of the HRA remain the same.

# Annex A – Woodward *et al.* (2019) review



# AQUIND Interconnector: Redetermination

Screening of SPAs Using Updated Marine  
Ornithology Foraging Ranges

---

**AQUIND Ltd.**

18 April 2023

1316254



OUR VISION

**Working to create a world  
powered by renewable energy**



## Document history

<b>Author</b>	Fiona Morton (Senior Offshore Ornithologist) Anne Mouillier (Offshore Ornithologist) Jack Oxtoby (Marine GIS Consultant)	13/04/2023
<b>Checked</b>	Chris Pendlebury (Director of Offshore Consenting and Environment)	18/04/2023
<b>Approved</b>	Chris Pendlebury (Director of Offshore Consenting and Environment)	18/04/2023

### Client Details

Contact	Vladimir Temerko
Client Name	AQUIND Ltd.
Address	5 Stratford Place London W1C 1AX

Issue	Date	Revision Details
A	18/04/2023	First issue to client

#### Local Office:

Ochil House  
Springkerse Business Park  
Stirling  
FK7 7XE  
SCOTLAND  
UK  
Tel: +44 (0) 1786 542 300

#### Registered Office:

The Natural Power Consultants Limited  
The Green House  
Forrest Estate, Dalry  
Castle Douglas, Kirkcudbrightshire  
DG7 3XS

Reg No: SC177881

VAT No: GB 243 6926 48

## Contents

1.	Introduction.....	1
1.1.	Background.....	1
1.2.	Thaxter <i>et al.</i> (2012) and Woodward <i>et al.</i> (2019).....	1
1.3.	The inclusion of plus one Standard Deviation.....	2
2.	Methods.....	2
2.1.	Site selection.....	2
2.2.	Species Assessment.....	2
3.	Results.....	3
3.1.	Scopoli's shearwater and Balearic shearwater.....	4
4.	Discussion.....	4
4.1.	Scopoli's shearwater and Balearic shearwater.....	4
5.	Conclusion.....	5
6.	References.....	6
	Appendix A. Sites and species with potential connectivity	
	Appendix B. BTO species codes	



# 1. Introduction

## 1.1. Background

Natural Power Consultants Ltd. (Natural Power) have been contracted by AQUIND Ltd. to carry out a review on the validity of the Habitats Regulations Assessment (HRA) Report (REP8-020) (“the 2019 assessment”) for the AQUIND Interconnector sub-sea cable (the Proposed Development).

This redetermination review has been carried out in order to ascertain whether the conclusions of the original marine ornithological HRA assessment (Natural Power/WSP UK Ltd., 2021), carried out in 2019 by Natural Power, remain valid in light of any new or changed evidence or designated sites since that time.

This document reports on an extension of this redetermination exercise for marine ornithology, and specifically focusses on the data sources used to determine connectivity between the Proposed Development and designated marine ornithological sites. Under the HRA process, connectivity is determined by examining estimated seabird foraging ranges from published peer-reviewed literature sources, as recommended by the SNCBs. The data sources discussed herein are:

- Thaxter *et al.*, 2012; and
- Woodward *et al.*, 2019.

## 1.2. Thaxter *et al.* (2012) and Woodward *et al.* (2019)

As part of the 2019 assessment, designated sites were assessed for having potential connectivity with the Proposed Development. In order to do this, the foraging ranges of breeding seabirds were used to determine any overlap between the Proposed Development and sites designated for breeding seabirds. If the Proposed Development was considered to lie within foraging range (using the shortest distance by sea) of a breeding seabird designated site, this site could be said to have potential connectivity.

The foraging ranges used in the 2019 assessment were taken from Thaxter *et al.* (2012), which was the most up-to-date source of seabird foraging ranges at the time and the recognised industry standard source for this metric. Specifically, the foraging ranges used in the assessment were each species’ mean maximum (mean max.) foraging range, as recommended by the SNCBs.

In the interim period between the previous HRA assessment and the current redetermination review, this key data source (Thaxter *et al.*, 2012) has been superseded by more recent evidence, as published by Woodward *et al.*, 2019.

Woodward *et al.* (2019) draws on larger sample sizes, as well as evidence from advances in tracking technology, which have allowed for data to be included for a wider range of species. Woodward *et al.* (2019) includes data from a higher number of both individual birds and colonies tracked than its predecessor. This publication is currently considered as being the benchmark for seabird foraging ranges, as advised by the SNCBs.

In the majority of cases, the seabird foraging ranges published by Woodward *et al.*, (2019) are greater than those published by Thaxter *et al.* (2012), having increased markedly so in some instances.



### 1.3. The inclusion of plus one Standard Deviation

In the 2019 assessment, the seabird foraging range used to determine each species' connectivity was the mean max. foraging range. However, the inclusion of one Standard Deviation (“+1 S.D.”) is now advocated by the SNCBs (Awel Y Mor, 2022) and widely followed.

It should be noted that the inclusion of +1 S.D. is considered conservative. This conservatism is further compounded by the fact that the measure of determining potential connectivity using Woodward *et al.*, (2019) mean max. (+1 S.D.) has been developed for offshore wind farms, which are considered to have a further reaching Zone of Influence than cable installation projects, such as the Proposed Development.

It has nevertheless been identified that a thorough assessment of protected sites for breeding seabirds within mean max. (+ 1 S.D.) foraging range, as published by Woodward *et al.*, (2019) is required, in order to determine that all sites and species with potential connectivity to the proposed development are adequately assessed.

## 2. Methods

The selection of sites with potential connectivity to the Proposed Development was carried out using standard HRA screening criteria:

- Sites occur within the search area\* and contain habitats which support or are functionally linked to the search area;
- Sites contain qualifying features whose range has the potential to interact with the Proposed Development's Zol (Zone of Influence); and
- The species listed under the designated sites are known to occur within the vicinity of the Proposed Development.

\*The search area in this instance is 2,365.5 km; the mean max. +1 S.D. foraging range of Manx shearwater (*Puffinus puffinus*).

### 2.1. Site selection

Designated sites were identified using QGIS Desktop 3.22.9 (QGIS, 2023), using up to date shapefiles of UK and European designated sites.

Using the mean max. (+ 1 S.D.) foraging range of the widest foraging seabird species, Manx shearwater, a buffer of 2,365.5 km was applied to the portion of the Proposed development that falls within the UK marine area. Designated sites which fell within, touched or intersected the buffer were then selected and a series of filters applied.

Firstly, designated sites which were not adjacent to or within the marine environment were removed from the selection. Of the remaining designated sites, those which were beyond 2,365.5 km from the proposed development, when using the shortest distance by sea, were removed from the selection.

The resulting “long-list” of designated sites was then taken forward to species assessment, which identified any breeding seabird features with potential connectivity to the Proposed Development.

### 2.2. Species Assessment

In order to determine potential connectivity between designated sites included in the long-list and the Proposed Development, the ornithological features of each site were assessed using the following criteria:

- Species which are breeding seabird features;
- Species which are central place foragers with published foraging ranges (using Woodward *et al.*, 2019);

- Species whose foraging ranges overlap with the Proposed Development (using the shortest distance by sea).

For SPAs, the ornithological features of each site were checked using Site Factsheets and conservation objectives available on the websites of EUNIS<sup>1</sup>, and the websites of the UK SNCBs.

For Ramsars, information on seabirds was sought from each site's Ramsar Information Sheet (RIS), available from the Convention of Wetlands' Ramsar Information Service website<sup>2</sup>.

Designated sites which met the criteria described above were taken forward for inclusion in the list of designated sites with potential connectivity to the Proposed Development.

### 3. Results

Following the site selection and species assessment processed described above, a total of 73 designated sites were identified with potential connectivity to the Proposed Development. Designated sites were screened in for six European countries, namely the UK, Ireland, France, Spain, Denmark and Germany. Table 3.1 summarises each screened-in species' closest designated site to the Proposed Development. A comprehensive list of designated sites identified and their screened-in features is provided in Appendix A.

**Table 3.1: Screened-in species and the closest sites for which they are breeding features**

Species	Site	Distance (km)	Country
Little tern	Chichester and Langstone Harbours SPA and Ramsar	0.1	UK
Common tern			
Sandwich tern			
Black-headed gull	Solent and Southampton Water Ramsar	6.6	UK
Mediterranean gull			
Roseate tern			
Cormorant	Littoral Seino-Marin SPA	30.7	France
Fulmar			
Great black-backed gull			
Herring gull			
Kittiwake			
Gannet	Cote de Granit Rose-Sept Iles SPA	253.2	France
Manx shearwater			
European storm petrel			
Puffin	Alderney West Coast and Burhou Islands Ramsar	142.0	UK Crown Dependencies
Lesser black-backed gull	Falaise du Bessin Occidental SPA	125	France
Scopoli's shearwater	Parque Nacional Marítimo-Terrestre de las Islas Atlánticas de Galicia SPA	1,136.7	Spain
Balearic shearwater			

Source: EUNIS; RSIS; Natural Power

<sup>1</sup> Available at [REDACTED] [last accessed 10/04/2023]

<sup>2</sup> [REDACTED] [last accessed 10/04/2023]

### 3.1. Scopoli's shearwater and Balearic shearwater

During the screening exercise, three SPAs and one Ramsar were identified as hosting breeding shearwater species which do not have published foraging ranges in either Thaxter *et al.* (2012) or Woodward *et al.* (2019). It is considered that, being closely related to Manx shearwater, both Scopoli's and Balearic shearwaters are likely to have similar foraging ranges to this species. In the interests of a thorough assessment, even though Scopoli's shearwater is a very rare visitor to waters surrounding the Proposed Development, the sites shown in Table 3.2 are screened in for these species.

**Table 3.2: Designated sites screened in for additional shearwater species**

Site	Distance (km)	Breeding shearwater features
Parque Nacional Marítimo-Terrestre de las Islas Atlánticas de Galicia Ramsar	1,136.7	Manx shearwater Scopoli's shearwater Balearic shearwater
Espacio marino de la Costa da Morte SPA	995.4	Scopoli's shearwater
Espacio marino de Punta de Candalaria-Ría de Ortigueira-Estaca de Bares SPA	923.8	Scopoli's shearwater
Bassin d'Arcachon et banc d'Arguin SPA	884.4	Scopoli's shearwater

Source: EUNIS; RSIS; Natural Power

## 4. Discussion

The 2019 assessment identified a number of SPAs with potential connectivity to the Proposed Development. The use of Thaxter *et al.* (2012) to identify features within mean max. foraging distance was one element of a wider and comprehensive bibliographical desk study.

The sites identified in the current re-evaluation using the Woodward (2019) published foraging ranges are inclusive of all sites identified in the 2019 assessment. Furthermore, there have been no changes to any of the designated sites which were screened in as part of the 2019 assessment.

The sites listed in Appendix A have been subjected to a high-level screening assessment, and it is concluded that none of the additional sites identified when using Woodward *et al.* (2019) foraging ranges as a metric for connectivity have the potential to experience LSE as a result of the Proposed Development.

### 4.1. Scopoli's shearwater and Balearic shearwater

Scopoli's and Balearic shearwaters have been identified herein as, despite not having published foraging ranges in Woodward *et al.* (2019), it is considered that they have the potential to forage widely from their breeding colonies and as such have the capacity to interact with the Proposed Development. As mentioned above, Scopoli's shearwater is included in the interests of a thorough assessment, even though it is a very rare visitor to waters surrounding the Proposed Development.

Using the criteria outlined in Section 2: Methods, specifically "*The species listed under the designated sites are known to occur within the vicinity of the Proposed Development*", it is considered that there is no mechanism by which sites designated for breeding Scopoli's shearwater can experience LSE. There is a possibility that Balearic

shearwater will occur in waters surrounding the Proposed Development, but LSE is ruled out since the site is sufficiently distant that any potential impacts are considered to be negligible.

## 5. Conclusion

It is considered that the 2019 assessment is suitably conservative for the type of project and resulting impacts that may arise as a result, and that all relevant European sites over a large area have been assessed sufficiently to enable a decision to be reached in respect of all European Sites that no adverse effects on site integrity will arise as a result of the Proposed Development either alone or in combination with other plans and projects.

Even though slightly different screening criteria have been utilised in this assessment of the Woodward *et al.* (2019) foraging ranges, for the reasons given above, the original 2019 assessment is hereby considered robust and fit for purpose.

## 6. References

Awel Y Môr Offshore Wind Farm. Category 5: Reports. (2022) RIAA Annex 2: HRA Screening Update (Ornithology). Application Reference 5.2.2.

AQUIND Interconnector – Habitats Regulations Assessment Report (2021) Natural Power/WSP UK Ltd. Document Reference 6.8.1.

QGIS Development Team, (2023). QGIS Geographic Information System. Open Source Geospatial Foundation Project. <http://qgis.osgeo.org>

Thaxter, C. B., Lascelles, B., Sugar, K., Cook, A. S. C. P., Roos, S., Bolton, M., Langston, R. H. W. and Burton, N. H. K. (2012). Seabird Foraging Ranges as a Preliminary Tool for Identifying Candidate Marine Protected Areas. *Biological Conservation* 156: 53-61.

Woodward, I., Thaxter, C. B., Owen, E. and Cook, A. S. C. P. (2019) Desk-based revision of seabird foraging ranges used for HRA screening. BTO Research Report No. 724.

## Appendix A: Sites and species identified as having potential connectivity with the Proposed Development

Site name	Distance (km)	Country	Type	Features screened in	LSE	Justification
Solent and Dorset Coast	0.0	United Kingdom	SPA	AF; CN; TE	No	Conclusions of 2019 assessment remain valid
Chichester and Langstone Harbours	0.1	United Kingdom	Ramsar	AF; CN	No	Conclusions of 2019 assessment remain valid
Chichester and Landstone Harbours	0.1	United Kingdom	SPA	AF; CN; TE	No	Conclusions of 2019 assessment remain valid
Solent and Southampton Water	6.6	United Kingdom	Ramsar	BH; CN; MU; RS; TE	No	Conclusions of 2019 assessment remain valid
Solent and Southampton Water	6.9	United Kingdom	SPA	CN; MU; RS; TE	No	Conclusions of 2019 assessment remain valid
Pagham Harbour	10.4	United Kingdom	SPA	CN	No	Conclusions of 2019 assessment remain valid
Littoral seino-marin	30.7	France	SPA	CA; F.; GB; HG; KI	No	Conclusions of 2019 assessment remain valid
Falaise du Bessin Occidental	125.0	France	SPA	F.; KI; LB	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Alderney West Coast and Burhou Islands	142.0	United Kingdom	Ramsar	GX; TM; KI; LB; PU	No	Conclusions of 2019 assessment remain valid
Herm, Jethou and The Humps	169.4	United Kingdom	Ramsar	F.; LB; MX; TM	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Chausey	210.3	France	SPA	GX; MX; TM	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Alde-Ore Estuary	225.3	United Kingdom	Ramsar	LB	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Cote de Granit Rose-Sept Iles	253.2	France	SPA	F.; GX; KI; MX; TM	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Baie de Morlaix	294.1	France	SPA	MX; TM	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Ouessant-Molène	393.2	France	SPA	F.; MX	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Camaret	407.8	France	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Cap Sizun	424.6	France	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Skomer, Skokholm and the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro	493.9	United Kingdom	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.

Site name	Distance (km)	Country	Type	Features screened in	LSE	Justification
Archipel de Glenan	511.9	France	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Baie de Quiberon	563.0	France	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Iles Houat-Hoedic	594.2	France	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Saltee Islands	595.1	United Kingdom	SPA	F.; MX	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Helvick Head to Ballyquin	613.6	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Old Head of Kinsale	620.0	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Galley Head to Duneen Point	635.2	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Sheep's Head to Toe Head	649.4	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island	666.4	United Kingdom	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Wicklow Head	680.9	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Seevogelschutzgebiet Helgoland	683.5	Germany	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Beara Peninsula	707.3	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Ireland's Eye	730.6	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.

Site name	Distance (km)	Country	Type	Features screened in	LSE	Justification
Deenish Island and Scariff Island	732.5	Ireland	SPA	F.; MX	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Iveragh Peninsula	735.5	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Lambay Island	739.3	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Skelligs	746.6	Ireland	SPA	F.; MX	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Puffin Island	747.5	Ireland	SPA	F.; MX	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Irish Sea Front	761.6	United Kingdom	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Basket Islands	773.1	Ireland	SPA	F.; MX	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Dingle Peninsula	777.7	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Outer Firth of Forth and St Andrews Bay Complex	782.4	United Kingdom	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Magharee Islands	824.4	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Kerry Head	831.6	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Loop Head	843.4	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Illauonearaun	860.1	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.



Site name	Distance (km)	Country	Type	Features screened in	LSE	Justification
Fowlsheugh	883.4	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Bassin d'Arcachon et banc d'Arguin	884.4	France	SPA	Scopoli's shearwater	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Cliffs of Moher	895.4	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Inishmore	907.6	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Espacio marino de Punta de Candelaria-Ría de Ortigueira-Estaca de Bares	923.8	Spain	SPA	Scopoli's shearwater	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Buchan Ness to Collieston Coast	924.9	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Cruagh Island	939.0	Ireland	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
High Island, Inishshark and Davillaun	939.5	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Illaunnaon	955.7	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Clare Island	969.2	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Espacio marino de la Costa da Morte	995.4	Spain	SPA	Scopoli's shearwater	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Duvillaun Islands	999.0	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Horn Head to Fanad Head	1060.5	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.

Site name	Distance (km)	Country	Type	Features screened in	LSE	Justification
East Caithness Cliffs	1062.1	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
North Caithness Cliffs	1072.2	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Tory Island	1079.2	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Copinsay	1082.6	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Hoy	1105.3	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
West Donegal Coast	1117.4	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Inishmurray	1117.6	Ireland	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
West Westray	1130.4	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Parque Nacional Marítimo-Terrestre de las Islas Atlánticas de Galicia	1136.7	Spain	Ramsar	MX; Scopoli's shearwater; YQ	No	Species are of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Rousay	1141.9	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Mingulay and Berneray	1164.7	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Fair Isle	1167.8	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Rum	1170.3	United Kingdom	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.

Site name	Distance (km)	Country	Type	Features screened in	LSE	Justification
Fetlar	1197.7	United Kingdom	SPA	F.	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
North Rona and Sula Sgeir	1259.0	United Kingdom	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Skuvoy	1435.4	Denmark	Ramsar	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.
Granitz	1523.9	Germany	SPA	MX	No	Species is of low sensitivity to cabling activities; site is sufficiently distant that any potential impacts are considered to be negligible.

## B. BTO species codes

Table 6.1: BTO species codes as shown in Appendix A

Code	Species	Scientific name
AF	Little tern	<i>Sternula albifrons</i>
BH	Black-headed gull	<i>Chroicocephalus ridibundus</i>
CA	Cormorant	<i>Phalacrocorax carbo</i>
CN	Common tern	<i>Sterna hirundo</i>
F.	Fulmar	<i>Fulmarus glacialis</i>
GB	Great black-backed gull	<i>Larus marinus</i>
GX	Gannet	<i>Morus bassanus</i>
HG	Herring gull	<i>Larus argentatus</i>
KI	Kittiwake	<i>Rissa tridactyla</i>
LB	Lesser black-backed gull	<i>Larus fuscus</i>
MU	Mediterranean gull	<i>Ichthyaetus melanocephalus</i>
MX	Manx shearwater	<i>Puffinus puffinus</i>
PU	Puffin	<i>Fratercula arctica</i>
RS	Roseate tern	<i>Sterna dougallii</i>
TE	Sandwich tern	<i>Thalasseus sandvicensis</i>
TM	European storm petrel	<i>Hydrobates pelagicus</i>
YQ	Balearic shearwater	<i>Puffinus mauretanicus</i>

Source: BTO



Creating a better environment



[sayhello@naturalpower.com](mailto:sayhello@naturalpower.com)



For full details on our ISO and other certifications, please visit our website.

NATURAL POWER CONSULTANTS LIMITED, THE NATURAL POWER CONSULTANTS LIMITED, NATURAL POWER SARL, NATURAL POWER CONSULTANTS (IRELAND) LIMITED, NATURAL POWER LLC, NATURAL POWER S.A, NATURAL POWER SERVICES LIMITED AND NATURAL POWER OPERATIONS LIMITED (collectively referred to as "NATURAL POWER") accept no responsibility or liability for any use which is made of this document other than by the Client for the purpose for which it was originally commissioned and prepared. The Client shall treat all information in the document as confidential. No representation is made regarding the completeness, methodology or current status of any material referred to in this document. All facts and figures are correct at time of print. All rights reserved. VENTOS® is a registered trademark of NATURAL POWER. Melogale™, WindCentre™, ControlCentre™, ForeSite™, vuWind™, WindManager™ and OceanPod™ are trademarks of NATURAL POWER.

No part of this document or translations of it may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopying, recording or any other information storage and retrieval system, without prior permission in writing from Natural Power. All facts and figures correct at time of print. All rights reserved. © Copyright 2020.

# **Annex B – Site Features Review**

**Annex B: Table B.1: Annex I Habitats**

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>5</sup> or JNCC <sup>6</sup> or Natura 2000 site <sup>7</sup>	Assessment Status	Any changes to the relevant features?
Solent Maritime SAC	Perennial vegetation of stony banks [1220]; Annual vegetation of drift lines [1210]; Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") [2120] Desmoulin's whorl snail ( <i>Vertigo moulinsiana</i> ) [1016] Coastal lagoons [1150]	Last updated: 13 March 2020	Pre-screened out 1 March 2021 (terrestrial feature, no connectivity to marine activities) – See Table 6.3 of 6.8.1 HRA Report (REP8-020) and 6.8.2.4.1 Figure 4.1 Annex I Habitats Sites (APP-492) in UK Marine Area.	No
	Estuaries [1130] Sandbanks which are slightly covered by sea water all the time [1110] Mudflats not covered by seawater at low tide [1140] <i>Spartina swards</i> [1320] Atlantic salt meadows [1330] <i>Salicornia</i> and other annuals colonising mud and sand [1310]	Last updated: 13 March 2020	Assessed for LSE and adverse effects (2021) – See Tables 6.3 and 10.20 of 6.8.1. HRA Report.	No
South Wight Maritime SAC	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	Last updated: 16 March 2018	Pre -screened out 1 March 2021 (terrestrial feature, no connectivity to marine activities)- See Table 6.3 of 6.8.1 HRA Report Figure 4.1 Annex I Habitats Sites in UK Marine Area.	No
	Reefs [1170] Submerged or partially submerged sea caves [8330]	Last updated: 16 March 2018	Assessed for LSE and adverse effects (2021) – See Tables 6.3 and 10.22 of 6.8.1. HRA Report.	No
Solent and Isle of Wight Lagoons SAC	Coastal lagoons [1150]	14 September 2018	Pre-screened out 1 March 2021 (no connectivity due to isolation from sea and distance from activities)- See Table 6.3 of 6.8.1 HRA report. Figure 4.1 Annex I Habitats Sites in UK Marine Area.	No
Wight-Barfleur Reef SAC	Reefs [1170]	November 2017	Pre-screened out 1 March 2021 (outside Zone of Influence ; ZOI)- See Table 6.3 of 6.8.1 HRA report Figure 4.1 Annex I Habitats Sites in UK Marine Area.	No
Studland to Portland SAC	Reefs [1170]	14 September 2018	Pre-screened out 1 March 2021 (outside ZOI)- See Table 6.3 of 6.8.1 HRA report	No

<sup>5</sup> [Site Search](#) [REDACTED]

<sup>6</sup> [Special Areas of Conservation \(jncc.gov.uk\)](http://jncc.gov.uk)

<sup>7</sup> [Natura 2000 Network Viewer](#) [REDACTED]

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>5</sup> or JNCC <sup>6</sup> or Natura 2000 site <sup>7</sup>	Assessment Status	Any changes to the relevant features?
			Figure 4.1 Annex I Habitats Sites in UK Marine Area.	
Bassurelle Sandbank SAC	Sandbanks (slightly covered by seawater all the time [1110])	November 2017	Pre-screened out 1 March 2021 (outside ZOI)- See Table 6.3 of 6.8.1 HRA report (REP8-020) Figure 4.1 Annex I Habitats Sites in UK Marine Area.	No
Ridens et dunes hydrauliques du detroit du Pas-de-Calais Zone Speciale de Conservation	Annex I habitats	February 2016	Pre-screened out 1 March 2021 (outside ZOI)- See Table 6.3 of 6.8.1 HRA report Figure 4.2 Annex I Habitats Transboundary Sites (APP-493)	No
Littoral Cauchois SAC	Annex I habitats	September 2017	Pre-screened out 1 March 2021 (outside ZOI)- See Table 6.3 of 6.8.1 HRA report Figure 4.2 Annex I Habitats Transboundary Sites (APP-493)	No

#### Annex B: Table B.2: Annex II Migratory Fish

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>8</sup> or JNCC <sup>9</sup> or Natura 2000 site <sup>10</sup> or Ramsar Site <sup>11</sup>	Assessment Status	Any changes to the relevant features?
River Itchen SAC	Salmon	December 2015	Assessed for LSE and adverse effects in 2021 - See Tables 6.4 and 10.24 of 6.8.1 HRA report Figure 4.3 Migratory Fish Sites in UK Marine Area (APP-494)	No
River Avon SAC	Salmon Sea lamprey	December 2015	Assessed for LSE and adverse effects in 2021- See Tables 6.4 and 10.26 of 6.8.1 HRA report Figure 4.3 Migratory Fish Sites in UK Marine Area	No
Littoral Cauchois SAC	Twaite shad Sea lamprey River lamprey	September 2017	Assessed for LSE and adverse effects in 2021- See Tables 6.4 and 10.33 of 6.8.1 HRA report Figure 4.4 Migratory Fish Transboundary Sites (APP-495)	No

<sup>8</sup> [Site Search \(naturalengland.org.uk\)](https://naturalengland.org.uk)

<sup>9</sup> [Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk)

<sup>10</sup> [Natura 2000 Network Viewer \(europa.eu\)](https://europa.eu)

<sup>11</sup> [Home | Ramsar Sites Information Service](#)



Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>8</sup> or JNCC <sup>9</sup> or Natura 2000 site <sup>10</sup> or Ramsar Site <sup>11</sup>	Assessment Status	Any changes to the relevant features?
Estuaires et littoral Picards (Baies de Somme et d'Authie) SAC/Baie de Somme Ramsar	River lamprey European Eel	August 2014 and 9 March 2017	Assessed for LSE and adverse effects in 2021 - See Tables 6.4 and 10.37 of 6.8.1 HRA  Figure 4.4 Migratory Fish Transboundary Sites	No
Baie de Canche et Couloir des trois Estuaires SAC	Allis shad Sea lamprey River lamprey Salmon	May 2015	Assessed for LSE and adverse effects in 2021- See Tables 6.4 and 10.41 of 6.8.1 HRA report  Figure 4.4 Migratory Fish Transboundary Sites	No
Estuaire de la Seine SAC/Marais Vernier Ramsar	Twaite shad River lamprey Sea lamprey Salmon European Eel	November 2019 and 05 October 2016	Assessed for LSE and adverse effects in 2021- See Tables 6.4 and 10.51 of 6.8.1 HRA report  Figure 4.4 Migratory Fish Transboundary Sites	No
Baie de Seine Orientale SAC	Allis shad Twaite shad Sea lamprey River lamprey Salmon	July 2019	Assessed for LSE and adverse effects in 2021 - See Tables 6.4 and 10.45 of 6.8.1 HRA report  Figure 4.4 Migratory Fish Transboundary Sites	No
River Axe SAC	Sea lamprey	December 2015	Assessed for LSE and adverse effects in 2021- See Tables 6.4 and 10.28 of 6.8.1 HRA report  Figure 4.3 Migratory Fish Sites in UK Marine Area	No
Plymouth Sound and Estuaries SAC	Allis shad	September 2021	Assessed for LSE and adverse effects in 2021- See Tables 6.4 and 10.30 of 6.8.1 HRA report  Figure 4.3 Migratory Fish Sites in UK Marine Area	No

**Annex B: Table B.3: Marine Mammals**

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>12</sup> or JNCC <sup>13</sup> or Natura 2000 site <sup>14</sup> or Ramsar Site <sup>15</sup>	Assessment Status	Any changes to the relevant features?
Littoral Cauchois SAC	Bottlenose dolphin Harbour porpoise Grey seal Harbour seal	September 2017	Assessed for LSE and adverse effects in 2021- See Tables 6.5 and 10.34 of 6.8.1 HRA report Figure 4.6 Marine Mammals transboundary sites (APP-497)	No
Ridens et dunes hydrauliques du detroit du Pas-de-Calais SAC	Harbour porpoise Grey seal Harbour seal	February 2016	Assessed for LSE and adverse effects in 2021- See Tables 6.5 and 10.48 of 6.8.1 HRA report Figure 4.6 Marine Mammals transboundary sites	No
Baie de Canche et couloir des trois estuaires SAC	Harbour porpoise Grey seal Harbour Seal	May 2015	Assessed for LSE and adverse effects in 2021- See Tables 6.5 and 10.42 of 6.8.1 HRA report Figure 4.6 Marine Mammals transboundary sites	No
Estuaires et littoral Picards (Baies de Somme et d'Authie) SAC/Baie de Somme Ramsar	Bottlenose dolphin Harbour porpoise Grey seal Harbour seal	August 2014 and 9 March 2017	Assessed for LSE and adverse effects in 2021- See Tables 6.5 and 10.38 of 6.8.1 HRA report Figure 4.6 Marine Mammals transboundary sites	No
Estuaire de la Seine SAC	Harbour porpoise Grey seal Harbour seal	November 2019	Assessed for LSE and adverse effects in 2021 - See Tables 6.5 and 10.52 of 6.8.1 HRA report Figure 4.6 Marine Mammals transboundary sites	No
Baie de Seine Orientale SAC	Bottlenose dolphin Harbour porpoise Grey seal Harbour seal	July 2019	Assessed for LSE and adverse effects in 2021- See Tables 6.5 and 10.46 of 6.8.1 HRA report Figure 4.6 Marine Mammals transboundary sites	No
Recifs Gris-Nez Blanc-Nez SAC	Harbour porpoise Grey seal Harbour seal	May 2015	Assessed for LSE and adverse effects in 2021- See Tables 6.5 and 10.54 of 6.8.1 HRA report Figure 4.6 Marine Mammals transboundary sites	No
Southern North Sea SAC	Harbour porpoise	February 2019	Pre-screened out in 2021- See Table 6.5 of 6.8.1 HRA report Figure 4.5 Marine Mammal Sites in UK Marine Area (APP-496)	No
The Wash and Norfolk Coast SAC	Harbour seal	19 March 2021	Pre-screened out in 2021- See Table 6.5 of 6.8.1 HRA report Figure 4.5 Marine Mammal Sites in UK Marine Area	No
Pembrokeshire Marine SAC	Grey seal	December 2015	Pre-screened out in 2021- See Table 6.5 of 6.8.1 HRA report Figure 4.5 Marine Mammal Sites in UK Marine Area	No
Cardigan Bay SAC	Bottlenose dolphin Grey seal	December 2015	Pre-screened out in 2021- See Table 6.5 of 6.8.1 HRA report Figure 4.5 Marine Mammal Sites in UK Marine Area	No

<sup>12</sup> [Site Search](#) [redacted]

<sup>13</sup> [Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk)

<sup>14</sup> [Natura 2000 Network Viewer](#) [redacted]

<sup>15</sup> [Home | Ramsar Sites Information Service](#)

**Annex B: Table B.4: Marine Ornithology**

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>16</sup> or JNCC <sup>17</sup> or Natura 2000 site <sup>18</sup> or Ramsar Site <sup>19</sup>	Assessment status	Any changes to the relevant features?
Solent and Dorset Coast SPA	Sandwich tern (B)	17 September 2021	All features assessed for LSE and adverse effects in 2021- See Tables 6.6 and 10.6 of 6.8.1 HRA report Figure 4.7 Marine Ornithology in UK Marine Sites (APP-498)	No
	Common tern (B)			
	Little tern (B)			
	Supporting habitat (water column)			
Chichester and Langstone Harbours SPA/ Ramsar site	Red-breasted merganser (W)	16 March 2018	Assessed for LSE and adverse effects in 2021- See Tables 6.6 and 10.3 of 6.8.1 HRA report and Figure 4.7 Marine Ornithology in UK Marine Sites	No
	Sandwich tern (B)			
	Little tern (B)			
	Common tern (B)			
	Supporting habitat (water column)			
Portsmouth Harbour SPA/Ramsar site	Red-breasted merganser (W)	13 September 2019	Assessed for LSE and adverse effects in 2021- See Tables 6.6 and 10.9 of 6.8.1 HRA report and Figure 4.7 Marine Ornithology in UK Marine Sites	No
	Supporting habitat (water column)			
Solent and Southampton Water SPA/Ramsar site	Sandwich tern (B)	17 September 2021	All features assessed for LSE and adverse effects in 2021- See Tables 6.6 and 10.12 of 6.8.1 HRA report and Figure 4.7 Marine Ornithology in UK Marine Sites	No
	Common tern (B)			
	Roseate tern (B)			
	Little tern (B)			
	Mediterranean gull (B)			
	Supporting habitat (water column)			

<sup>16</sup> [Site Search](#) [redacted]

<sup>17</sup> [Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk)

<sup>18</sup> [Natura 2000 Network Viewer](#) [redacted]

<sup>19</sup> [Home | Ramsar Sites Information Service](#)

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>16</sup> or JNCC <sup>17</sup> or Natura 2000 site <sup>18</sup> or Ramsar Site <sup>19</sup>	Assessment status	Any changes to the relevant features?
Pagham Harbour SPA/Ramsar site	Common tern(B)	15 September 2017	Little tern pre-screened out due to no connectivity. Other features assessed for LSE and adverse effects in 2021- See Tables 6.6 and 10.14 of 6.8.1 HRA report and Figure 4.7 Marine Ornithology in UK Marine Sites	No
	Supporting habitat (water column)			
	Little tern(B)			
Littoral-Seino Marin SPA	Common scoter (W)	September 2013	Great black-backed gull, herring gull, fulmar and kittiwake were assessed for LSE and adverse effects in 2021- See Tables 6.6 and 10.16 of 6.8.1 HRA report and Figure 4.8 Marine Ornithology Transboundary Sites (APP-499). All other features were pre-screened out of assessment due to no connectivity.	No
	Eider (W)			
	Red-throated diver (W)			
	Great Northern Diver (W)			
	Black-throated diver (W)			
	Great-crested grebe (W)			
	Black-necked grebe (W)			
	Slavonian grebe (W)			
	Red-breasted merganser (W)			
	Manx shearwater (P)			
	Balearic shearwater (P)			
	Storm petrel (P)			
	Gannet (W)			
	Cormorant (B)			
	Shag (B)			
	Great skua (P)			
Arctic skua (P)				
Pomarine skua (P)				
Sandwich tern (P)				

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>16</sup> or JNCC <sup>17</sup> or Natura 2000 site <sup>18</sup> or Ramsar Site <sup>19</sup>	Assessment status	Any changes to the relevant features?
Dungeness Romney Marsh and Rye Bay SPA/Ramsar site		13 September 2019	All features were pre-screened out of assessment due to no connectivity. See Table 6.6 of 6.8.1 HRA report and Figure 4.7 Marine Ornithology in UK Marine Sites	No
	Common tern (P)			
	Arctic tern (P)			
	Little tern (P)			
	Lesser black-backed gull (W)			
	Mediterranean gull (W)			
	Little gull (W)			
	Guillemot (W)			
	Razorbill (W)			
	Velvet scoter (W)			
	Fulmar (B)			
	Great black-backed gull (B)			
	Herring gull (B)			
Kittiwake (B)				
Poole Harbour SPA	Sandwich tern (B)	18 March 2022	All features were pre-screened out of assessment due to no connectivity. See Table 6.6 of 6.8.1 HRA report and Figure 4.7 Marine Ornithology in UK Marine Sites	No
	Common tern (B)			
	Little tern (B)			
	Mediterranean gull (B)			
	Supporting habitat (water column)			

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>16</sup> or JNCC <sup>17</sup> or Natura 2000 site <sup>18</sup> or Ramsar Site <sup>19</sup>	Assessment status	Any changes to the relevant features?
Estuaire et Marais de la Basse Seine SPA	Mediterranean gull (B)	November 2002	All features were pre-screened out of assessment due to no connectivity. See Table 6.6 of 6.8.1 HRA report and Figure 4.8 Marine Ornithology Transboundary Sites	No
	Supporting habitat (water column)			
	Common scoter (W)			
	Eider (W)			
	Red-throated diver (W)			
	Great northern diver (W)			
	Black-throated diver (W)			
	Cormorant (W)			
	Great crested grebe (W)			
	Red-necked grebe (W)			
	Slavonian grebe (W)			
	Red-breasted merganser (W)			
	Great skua (P)			
	Arctic skua (P)			
	Sandwich tern (P)			
	Common tern (P)			
	Arctic tern (P)			
Mediterranean gull (P)				
Little gull (P)				
Guillemot (W)				
Razorbill (W)				
Alderney West Coast and Burhou Island Ramsar site	Great black-backed gull (B)	June 2008	Storm petrel, gannet and lesser black-backed gull were assessed for LSE and adverse effects in 2021- See Tables 6.6 and 10.18 of 6.8.1 HRA report and Figure 4.8 Marine	No

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>16</sup> or JNCC <sup>17</sup> or Natura 2000 site <sup>18</sup> or Ramsar Site <sup>19</sup>	Assessment status	Any changes to the relevant features?
	Cormorant (B)		Ornithology Transboundary Sites. All other features were pre-screened out of assessment due to no connectivity. All other features were pre-screened out due to no connectivity.	
	Shag (B)			
	Herring gull (B)			
	Kittiwake (B)			
	Guillemot (B)			
	Razorbill (B)			
	Puffin (B)			
	Storm petrel (B)			
	Gannet (B)			
	Lesser black-backed gull (B)			

**Annex B: Table B.5: Onshore Ecology**

Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>20</sup> or Natura 2000 site <sup>21</sup> or Ramsar Site <sup>22</sup>	Assessment status	Any changes to the relevant features?
Chichester and Langstone Harbours SPA/ Ramsar site	Dark-bellied Brent Goose (W)	16 March 2018	Assessed for LSE and adverse effects in 2021- See Tables 6.7 and 10.4 of 6.8.1 HRA report.	No
	Redshank (W)			
	Shelduck (W)			
	Pintail (W)			
	Shoveler (W)			
	Teal (W)			
	Wigeon (W)			
	Bar-tailed godwit (W)			
	Black-tailed godwit (W)			
	Curlew (W)			
	Turnstone (W)			
	Sanderling (W)			
	Grey plover (W)			
	Ringed plover (W)			
Dunlin (W)				
Waterfowl assemblage (W)				

<sup>20</sup> [Site Search](#) [redacted]  
<sup>21</sup> [Natura 2000 Network Viewer](#) [redacted]  
<sup>22</sup> [Home | Ramsar Sites Information Service](#)



Site	Features	Site Information/Citation last updated on Natural England Designated Sites page <sup>20</sup> or Natura 2000 site <sup>21</sup> or Ramsar Site <sup>22</sup>	Assessment status	Any changes to the relevant features?
	Supporting habitat (freshwater and coastal grazing marsh)			
Portsmouth Harbour SPA/Ramsar site	Dark-bellied brent goose (W) Dunlin (W) Black-tailed godwit (W) Supporting habitat (freshwater and coastal grazing marsh)	13 September 2019	Assessed for LSE and adverse effects in 2021- See Tables 6.7 and 10.10 of 6.8.1 HRA report.	No

# Annex C – Advice On Operations Review

**Annex C: Revised Table 2.1 - Predicted effects of the marine elements of the Proposed Development on relevant Annex I habitat Qualifying Features [C = construction phase O = operation phase D = decommissioning phase]**

Site	Qualifying Feature	AoO-Cables HDD C	AoO-Cable Decomm D	AoO-Cable Lay, Bury, Protect C	AoO-Cable O&M O	Pressure	Effect
Solent Maritime SAC	Estuaries	✓	✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)	Habitat disturbance
		✓	✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)	
		✓	✓	✓	✓	Vibration (C, O, D)	
		✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased Suspended Sediment Concentration (SSC)
		✓	✓	✓	✓	Deoxygenation (C, O, D)	
		✓	✓	✓	✓	Nutrient enrichment (C, O, D)	
		✓				Organic Enrichment (C)	
		✓	✓	✓	✓	Smothering and siltation rate changes (light) (C, O, D)	Deposition of sediment (smothering)
		✓		✓		Smothering and siltation rate changes (Heavy) (C, O)	
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	Resuspension of contaminated sediments
		✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	Physical change (to another seabed type) (C, O, D)	Pollution
		✓	✓	✓	✓	Physical change (to another sediment type) (C, O, D)	
				✓	✓	Physical loss (to land or freshwater habitat) (C, O)	
		✓	✓	✓	✓	Litter (C, O, D)	
		✓				Introduction of other substances (solid, liquid or gas) (C)	Increased light (Pollution)
		✓	✓	✓	✓	Hydrocarbon & Pesticides and Polycyclic Hydrocarbons ('PAH') contamination (C, O, D)	
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓	✓	✓	✓	Introduction of light (C, O, D)	Invasive species
		✓				Barrier to species movement (C, O)	Electromagnetic Field (EMF)
					Electromagnetic changes (O)		
					Temperature decrease (O)		
					Temperature increase (O)	Temperature changes	
	✓	✓	✓	✓	Water flow (tidal current) changes, including sediment transport considerations (C, O, D)	Hydrodynamic changes	
	✓				Wave exposure changes (C)		
	✓				Emergence regime changes, including tidal level change considerations (C)		
	Mudflats and sand flats not submerged at low tide		✓	✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)
✓			✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)	
✓			✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC

Site	Qualifying Feature	AoO-Cables HDD C	AoO-Cable Decomm D	AoO-Cable Lay, Bury, Protect C	AoO-Cable O&M O	Pressure	Effect	
		✓	✓	✓	✓	Deoxygenation (C, O, D)	Resuspension of contaminated sediments Deposition of sediment (smothering) Habitat Loss Pollution Increased light (Pollution) Invasive species EMF Temperature changes Hydrodynamic changes	
		✓	✓	✓	✓	Nutrient enrichment (C, O, D)		
		✓				Organic Enrichment (C)		
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)		
		✓	✓	✓	✓	Smothering and siltation rate changes (light) (C, O, D)		
		✓				Smothering and siltation rate changes (Heavy) (C)		
		✓	✓			Habitat structure changes - removal of substratum (extraction) (C, D)		
		✓	✓	✓	✓	Physical change (to another sediment type) (C, O, D)		
		✓			✓	Physical Change (to another Seabed type) (C)		
					✓	Physical loss (to land or freshwater habitat) (C, O)		
		✓	✓	✓	✓	Litter (C, O, D)		
		✓				Introduction of other substances (solid, liquid or gas) (C)		
		✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)		
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)		
		✓	✓	✓	✓	Introduction of light (C, O, D)		
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)		
						✓		Electromagnetic changes (O)
						✓		Temperature decrease (O)
						✓		Temperature increase (O)
		✓	✓	✓	✓	✓		Water flow (tidal current) changes, including sediment transport considerations (C, O, D)
	✓					Wave exposure changes (C)		
	✓					Emergence regime changes, including tidal level change considerations (C)		
	Sandbanks slightly covered by seawater all the time	✓	✓	✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)	Habitat disturbance
		✓	✓	✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)	Increased SSC
		✓	✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	
		✓	✓	✓	✓	✓	Deoxygenation (C, O, D)	Deposition of sediment (smothering)
		✓					Organic Enrichment (C)	
		✓	✓	✓	✓	✓	Nutrient enrichment (C, O, D)	Resuspension of contaminated sediments
		✓	✓	✓	✓	✓	Smothering and siltation rate changes (light) (C, O, D)	
		✓			✓		Smothering and siltation rate changes (Heavy) (C)	Habitat loss
		✓	✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	
		✓	✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Pollution
✓		✓	✓	✓	✓	Physical change (to another seabed type) (C, O, D)		
✓		✓	✓		✓	Physical change (to another sediment type) (C, O, D)		
✓			✓	✓	Physical loss (to land or freshwater habitat) (C, O)			
✓	✓	✓	✓	✓	Litter (C, O, D)			

Site	Qualifying Feature	AoO-Cables HDD C	AoO-Cable Decomm D	AoO-Cable Lay, Bury, Protect C	AoO-Cable O&M O	Pressure	Effect	
		✓				Introduction of other substances (solid, liquid or gas) (C)		
		✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)		
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)		
		✓	✓	✓	✓	Introduction of light (C, O, D)	Increased light (Pollution)	
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species	
						✓	Electromagnetic changes (O)	EMF
						✓	Temperature decrease (O)	Temperature changes
						✓	Temperature increase (O)	
		✓	✓	✓	✓	✓	Water flow (tidal current) changes, including sediment transport considerations (C, O, D)	Hydrodynamic changes
		✓					Wave exposure changes (C,)	
	✓					Emergence regime changes, including tidal level change considerations (C)		
	<i>Spartina</i> swards	✓	✓	✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)	Habitat disturbance
		✓	✓	✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)	
		✓	✓	✓	✓	✓	Vibration (C, O, D)	
		✓	✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC
		✓		✓			Smothering and siltation rate changes (Heavy) (C)	Deposition of sediment (smothering)
		✓	✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	Resuspension of contaminated sediments
		✓	✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	✓	Physical change (to another sediment type) (C, O, D)	
		✓	✓	✓	✓	✓	Physical loss (to land or freshwater habitat) (C, O)	
		✓	✓	✓	✓	✓	Litter (C, O, D)	Pollution
		✓					Introduction of other substances (solid, liquid or gas) (C)	
		✓	✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)	
		✓	✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓	✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species
		✓					✓	Barrier to species movement (C, O)
						✓	Electromagnetic changes (O)	
						✓	Temperature decrease (O)	
						✓	Temperature increase (O)	Temperature changes
	✓						Emergence Regime Changes (C)	Hydrodynamic changes
	Atlantic salt meadows	✓	✓	✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)	Habitat disturbance
		✓	✓	✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)	
		✓	✓	✓	✓	✓	Vibration (C, O, D)	

Site	Qualifying Feature	AoO-Cables HDD C	AoO-Cable Decomm D	AoO-Cable Lay, Bury, Protect C	AoO-Cable O&M O	Pressure	Effect	
		✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC	
		✓		✓		Smothering and siltation rate changes (Heavy) (C)	Deposition of sediment (smothering)	
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	Resuspension of contaminated sediments	
		✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss	
		✓	✓	✓	✓	Physical change (to another sediment type) (C, O, D)		
				✓	✓	Physical loss (to land or freshwater habitat) (C, O)		
		✓	✓	✓	✓	Litter (C, O, D)	Pollution	
		✓				Introduction of other substances (solid, liquid or gas) (C)		
		✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)		
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)		
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species	
		✓				Barrier to species movement (C, O)	EMF	
						Electromagnetic changes (O)		
						Temperature decrease (O)	Temperature changes	
						Temperature increase (O)		
	✓				Emergence Regime Changes (C)	Hydrodynamic changes		
	<i>Salicornia</i> and other annuals colonising mud and sand	✓	✓	✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)	Habitat disturbance
		✓	✓	✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)	
		✓	✓	✓	✓	✓	Vibration (C, O, D)	
			✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC
		✓		✓			Smothering and siltation rate changes (Heavy) (C)	Deposition of sediment (smothering)
		✓	✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	Resuspension of contaminated sediments
		✓	✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	✓	Physical change (to another sediment type) (C, O, D)	
				✓	✓	✓	Physical loss (to land or freshwater habitat) (C, O)	
		✓	✓	✓	✓	✓	Litter (C, O, D)	Pollution
		✓					Introduction of other substances (solid, liquid or gas) (C)	
		✓	✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)	
		✓	✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓	✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species
		✓					Barrier to species movement (C, O)	EMF
							Electromagnetic changes (O)	
						Temperature decrease (O)	Temperature changes	
					Temperature increase (O)			
✓					Emergence Regime Changes (C)	Hydrodynamic changes		

Site	Qualifying Feature	AoO-Cables HDD C	AoO-Cable Decomm D	AoO-Cable Lay, Bury, Protect C	AoO-Cable O&M O	Pressure	Effect	
South Wight Maritime	Reefs	✓	✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)	Habitat disturbance	
		✓	✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)		
		✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC	
		✓	✓	✓	✓	Deoxygenation (C, O, D)		
		✓				Organic Enrichment (C)		
		✓	✓	✓	✓	Nutrient enrichment (C, O, D)		
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	Resuspension of contaminated sediments	
		✓	✓	✓	✓	Smothering and siltation rate changes (light) (C, O, D)	Deposit of sediment (smothering)	
		✓		✓		Smothering and siltation rate changes (Heavy) (C)		
		✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss	
		✓	✓	✓	✓	Physical change (to another seabed type) (C, O, D)		
		✓				Physical change (to another sediment type) (C, O, D)		
		✓		✓	✓	Physical loss (to land or freshwater habitat) (C, O)		
		✓	✓	✓	✓	Litter (C, O, D)	Pollution	
		✓				Introduction of other substances (solid, liquid or gas) (C)		
		✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)		
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)		
		✓	✓	✓	✓	Introduction of light (C, O, D)	Increased light (Pollution)	
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species	
		✓	✓	✓	✓	Underwater noise changes (C, O, D)	Noise and vibration	
	✓			✓	Barrier to species movement (C, O)	EMF		
				✓	Electromagnetic changes (O)			
				✓	Temperature decrease (O)			
				✓	Temperature increase (O)	Temperature changes		
	✓	✓	✓	✓	Water flow (tidal current) changes, including sediment transport considerations (C, O, D)	Hydrodynamic changes		
	✓				Emergence Regime Changes (C)			
	✓				Wave exposure changes (C)			
	Submerged or partially submerged sea caves			✓	✓	✓	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion (C, O, D)	Habitat disturbance
				✓	✓	✓	Abrasion/disturbance of the substrate on the surface of the seabed (C, O, D)	
		✓	✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC
		✓	✓	✓	✓	Deoxygenation (C, O, D)		
		✓	✓	✓	✓	Nutrient Enrichment (C, O, D)		
		✓	✓	✓	✓	Smothering and siltation rate changes (light) (C, O, D)	Deposit of sediment (smothering)	
✓			✓		✓	Smothering and siltation rate changes (Heavy) (C)		
	✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	Resuspension of contaminated sediments		



Site	Qualifying Feature	AoO-Cables HDD C	AoO-Cable Decomm D	AoO-Cable Lay, Bury, Protect C	AoO-Cable O&M O	Pressure	Effect
			✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
			✓	✓	✓	Physical change (to another seabed type) (C, O, D)	
				✓	✓	Physical loss (to land or freshwater habitat) (C, O)	
			✓	✓	✓	Litter (C, O, D)	Pollution
			✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)	
			✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
			✓	✓	✓	Introduction of light (C, O, D)	
			✓	✓	✓	Introduction or spread of INIS (C, O, D)	Increased light (Pollution)
					✓	Electromagnetic changes (O)	Invasive species
					✓	Temperature decrease (O)	EMF
					✓	Temperature increase (O)	Temperature changes
		✓	✓	✓	✓	Water flow (tidal current) changes, including sediment transport considerations (C, O, D)	Hydrodynamic changes
		✓				Emergence Regime Changes (C)	



**Annex C: Revised Table 1.9 - Predicted effects of the marine elements of the Proposed Development on relevant Annex II Migratory Fish Qualifying Features [C = construction phase O = operation phase D = decommissioning phase]**

Site	Qualifying Feature	AoO-Cables HDD	AoO-Cable Decomm	AoO-Cable Lay, Bury, Protect	AoO-Cable O&M	Pressure	Effect
Plymouth Sound and Estuaries SAC	Allis shad	✓	✓	✓	✓	Changes in suspended solids (water clarity) (C,O,D)	Increased SSC
		✓	✓	✓	✓	Deoxygenation (C, O, D) and barrier to species movement ( C)	
			✓	✓	✓	Collision below water with static or moving objects not naturally found in the marine environment (C,O,D)	Physical injury
		✓	✓	✓	✓	Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species
		✓	✓	✓	✓	Hydrocarbon and PAH contamination (C,O,D)	Pollution events
		✓	✓	✓	✓	Litter (C,O,D)	
		✓	✓	✓	✓	Synthetic compounds contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓				Introduction of other substances (solid, liquid or gas) (C)	
		✓	✓	✓	✓	Transition elements & organo-metals (e.g. TBT) contamination (C, O, D))	
			✓	✓	✓	Underwater noise changes (C, O, D)	Noise and vibration
			✓	✓	✓	Vibration (C, O, D)	Visual disturbance
			✓	✓	✓	Visual Disturbance (C, O, D)	
			✓			Barrier to species movement (C,O)	EMF
						✓	Electromagnetic changes (O)
				✓	Temperature decrease (O)		
				✓	Temperature increase (O)		
River Itchen SAC and River Avon SAC and French sites using Allis Shad Plymouth Sound and Estuaries SAC as a proxy	Salmon	✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC
		✓	✓	✓	✓	Deoxygenation (C,O, D) and barrier to species movement (C)	
			✓	✓	✓	Collision below water with static or moving objects not naturally found in the marine environment (C, O, D)	Physical injury
		✓	✓	✓	✓	Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species
		✓	✓	✓	✓	Hydrocarbon and PAH contamination (C, O, D)	Pollution events
		✓	✓	✓	✓	Litter (C, O, D)	
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓				Introduction of other substances (solid, liquid or gas) (C)	
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	
			✓	✓	✓	Underwater noise changes (C, O, D)	Noise and vibration
			✓	✓	✓	Vibration (C, O, D)	Visual disturbance
			✓	✓	✓	Visual Disturbance (C, O, D)	
			✓			Barrier to species movement (C,O)	EMF
						✓	Electromagnetic changes (O)
				✓	Temperature decrease (O)		
				✓	Temperature increase (O)		
French sites		✓	✓	✓	✓	Changes in suspended solids (water clarity) (C, O, D)	Increased SSC
		✓	✓	✓	✓	Deoxygenation (C,O, D) and barrier to species movement (C)	

Site	Qualifying Feature	AoO-Cables HDD	AoO-Cable Decomm	AoO-Cable Lay, Bury, Protect	AoO-Cable O&M	Pressure	Effect
using Allis Shad Plymouth Sound and Estuaries SAC as a proxy	Twaite Shad		✓	✓	✓	Collision below water with static or moving objects not naturally found in the marine environment (C, O, D)	Physical injury
		✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species
		✓	✓	✓	✓	Hydrocarbon and PAH contamination (C, O, D)	Pollution events
		✓	✓	✓	✓	Litter (C, O, D)	
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓				Introduction of other substances (solid, liquid or gas) (C)	
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	
		✓	✓	✓	✓	Underwater noise changes (C, O, D)	Noise and vibration
		✓	✓	✓	✓	Vibration (C, O, D)	
		✓	✓	✓	✓	Visual Disturbance (C, O, D)	Visual disturbance
		✓			✓	Barrier to species movement (C,O)	EMF
					✓	Electromagnetic changes (O)	
			✓	Temperature decrease (O)	Temperature changes		
			✓	Temperature increase (O)			
River Avon and River Axe SAC and French sites using Humber Estuary SAC as a proxy	Sea Lamprey	✓	✓	✓	✓	Deoxygenation (C,O, D) and barrier to species movement (C)	Increased SSC
		✓	✓	✓	✓	Collision below water with static or moving objects not naturally found in the marine environment (C, O, D)	Physical injury
		✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species
		✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)	Pollution events
		✓	✓	✓	✓	Litter (C, O, D)	
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓				Introduction of other substances (solid, liquid or gas) (C)	
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	
		✓	✓	✓	✓	Underwater noise changes (C, O, D)	Noise and vibration
		✓	✓	✓	✓	Vibration (C, O, D)	
		✓			✓	Barrier to species movement (C,O)	EMF
					✓	Electromagnetic changes (O)	
			✓	Temperature decrease (O)	Temperature changes		
			✓	Temperature increase (O)			
French SACs using Humber Estuary SAC as a proxy	River Lamprey	✓	✓	✓	✓	Deoxygenation (C,O, D) and barrier to species movement (C)	Increased SSC
		✓	✓	✓	✓	Collision below water with static or moving objects not naturally found in the marine environment (C, O, D)	Physical injury
		✓	✓	✓		Habitat structure changes - removal of substratum (extraction) (C, D)	Habitat loss
		✓	✓	✓	✓	Introduction or spread of INIS (C, O, D)	Invasive species
		✓	✓	✓	✓	Hydrocarbon & PAH contamination (C, O, D)	Pollution events
		✓	✓	✓	✓	Litter (C, O, D)	
		✓	✓	✓	✓	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals) (C, O, D)	
		✓				Introduction of other substances (solid, liquid or gas) (C)	

Site	Qualifying Feature	AoO-Cables HDD	AoO-Cable Decomm	AoO-Cable Lay, Bury, Protect	AoO-Cable O&M	Pressure	Effect
		✓	✓	✓	✓	Transition elements & organo-metal (e.g. TBT) contamination (C, O, D)	Noise and vibration
		✓	✓	✓	✓	Underwater noise changes (C, O, D)	
		✓	✓	✓	✓	Vibration (C, O, D)	
		✓			✓	Barrier to species movement (C,O)	EMF
					✓	Electromagnetic changes (O)	Temperature changes
					✓	Temperature decrease (O)	
					✓	Temperature increase (O)	

**Annex C: Revised Table 6.10 - Pressures listed for the different UK SACs and the corresponding effects which were assessed for all marine mammal sites. The pressures relate to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated**

Features	Site	Effect	Pressure	AoO-Cables HDD	AoO-Cable Decomm	AoO-Cable Lay, Bury, Protect	AoO-Cable O&M
Harbour seal <sup>23</sup>	Récifs Gris-Nez Blanc-Nez SAC	Auditory injury	Underwater noise changes	✓	✓	✓	✓
			Vibration	✓	✓	✓	✓
	Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC	Disturbance	Barrier to species movement (operational phase only for power cables, construction phase only for HDD)	✓			✓
			Above water noise	✓	✓	✓	✓
	Baie de Canche et couloir des trois estuaires SAC	Collision	Introduction of light	✓	✓	✓	✓
			Visual disturbance	✓	✓	✓	✓
			Collision below water with static or moving objects not naturally found in the marine environment	✓	✓	✓	✓
	Estuaires et littoral picards (baies de Somme et d'Authie) SAC/Baie de Somme Ramsar	Indirect effects	Introduction or spread of INIS	✓	✓	✓	✓
			Pollution	Hydrocarbon and PAH contamination	✓	✓	✓
	Litter	✓		✓	✓	✓	
	Baie de Seine orientale SAC	Pollution		Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)	✓	✓	✓
			Estuaire de la Seine SAC	Transition elements and organo-metal (e.g. TBT) contamination	✓	✓	✓
		Introduction of other substances (solid, liquid or gas) (not listed for power cables, construction phase only for HDD)		✓			

<sup>23</sup> Information on pressures for the relevant activities (considered to be Cables – Power cable: Laying, burial and protection; Cables – Power cable: Operation and maintenance; Cables – Power cable: Decommissioning; Cables – Cables: HDD) taken from the Advice on Operations page of Natural England's Designated Sites View website for The Wash and North Norfolk Coast SAC as a proxy site

(accessed August 2020).

**Annex C: Revised Table 6.11 - Potential effects on marine ornithology features across all phases of the Proposed Development. The pressures relate to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.**

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO- Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O	
Solent and Dorset Coast SPA	Disturbance and displacement	Above water noise	Sandwich tern Common tern Little tern	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
		Underwater noise changes	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
		Visual disturbance	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
		Introduction of light	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
		Vibration	Supporting habitat (water column)	✓	✓	✓	✓	
		Barrier to species movement (Operational phase and HDD in construction phase only)	Little tern Supporting habitat (water column)	✓ ✓			✓ ✓	
	Collision*	Collision above water with static or moving objects	Sandwich tern Common tern Little tern	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
		Collision below water with static or moving objects	Sandwich tern Common tern Little tern	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
	Indirect effects	Changes in suspended solids (water clarity)	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
			Deoxygenation	Supporting habitat (water column)	✓	✓	✓	✓
			Nutrient enrichment	Supporting habitat (water column)	✓	✓	✓	✓
			Habitat structure changes – removal of substratum (Construction and decommissioning phases only)	Supporting habitat (water column)	✓	✓	✓	
		Physical loss (to land or freshwater) (Operational phase and cable lay/burial/protection period of construction phase only)	Supporting habitat (water column)			✓	✓	
		Water flow (tidal current) changes, including sediment transport considerations	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O	
Chichester and Langstone Harbour SPA		Emergence regime changes, including tidal level change considerations (HDD in construction phase only)	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓				
		Transition elements and organometal contamination	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
		Wave Exposure changes (HDD period of construction phase only)	Supporting habitat (water column)	✓				
		Organic enrichment (HDD period of construction phase only)	Supporting habitat (water column)	✓				
		Physical change (to another seabed type) (HDD in construction phase only)	Supporting habitat (water column)	✓				
		Physical change (to another sediment type) (HDD in construction phase only)	Supporting habitat (water column)	✓				
		Electromagnetic changes (Operational phase only)	Supporting habitat (water column)				✓	
		Temperature decreases (Operational phase only)	Supporting habitat (water column)				✓	
		Temperature increases (Operational phase only)	Supporting habitat (water column)				✓	
		Accidental spills	Hydrocarbon and Polycyclic Aromatic Hydrocarbon ('PAH') contaminants	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓
	Synthetic compound contamination (incl. pesticides, antifoulants and pharmaceuticals)		Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
	Introduction of other substance (solid, liquid, gas) (HDD in construction phase only)		Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓				
	Litter	Litter	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
	INIS	Introduction or spread of INIS	Sandwich tern Common tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
		Disturbance and displacement	Above water noise	Common tern (breeding) Little tern (breeding)	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓



Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O	
			Red-breasted merganser (non-breeding) Sandwich tern (breeding)	✓	✓	✓	✓	
		Underwater noise changes	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
		Visual disturbance	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
		Introduction of light	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
		Vibration	Supporting habitat (water column)	✓	✓	✓	✓	
		Barrier to species movement (Operational phase and HDD in construction phase only)	Little tern (breeding) Red-breasted merganser (non-breeding) Supporting habitat (water column)	✓ ✓ ✓			✓ ✓ ✓	
		Collision*	Collision above water with static or moving objects	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓
			Collision below water with static or moving objects	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓
		Indirect effects	Changes in suspended solids (water clarity)	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
				Deoxygenation	Supporting habitat (water column)	✓	✓	✓
			Nutrient enrichment	Supporting habitat (water column)	✓	✓	✓	✓

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O	
		Habitat structure changes – removal of substratum (Construction and decommissioning phases only)	Supporting habitat (water column)	✓	✓	✓	✓	
		Physical loss (to land or freshwater) (Operational phase and cable lay/burial/protection period of construction phase only)	Supporting habitat (water column)			✓	✓	
		Water flow (tidal current) changes, including sediment transport considerations	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
		Emergence regime changes, including tidal level change considerations (HDD in construction phase only)	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓				
		Transition elements and organometal contamination	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
		Wave Exposure changes (HDD period of construction phase only)	Red-breasted merganser (non-breeding) Supporting habitat (water column)	✓ ✓				
		Organic enrichment (HDD period of construction phase only)	Supporting habitat (water column)	✓				
		Physical change (to another seabed type) (HDD in construction phase only)	Supporting habitat (water column)	✓				
		Physical change (to another sediment type) (HDD in construction phase only)	Supporting habitat (water column)	✓				
		Electromagnetic changes (Operational phase only)					✓	
		Temperature decreases (Operational phase only)					✓	
		Temperature increases (Operational phase only)					✓	
		Accidental spills	Hydrocarbon and Polycyclic Aromatic Hydrocarbon ('PAH') contaminants	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O	
		Synthetic compound contamination (incl. pesticides, antifoulants and pharmaceuticals)	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
		Introduction of other substance (solid, liquid, gas) (HDD in construction phase only)	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓				
	Litter	Litter	Common tern (breeding) Little tern (breeding) Red-breasted merganser (non-breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	
	INIS	Introduction or spread of INIS	Common tern (breeding) Little tern (breeding) Sandwich tern (breeding) Supporting habitat (water column)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
	Portsmouth Harbour SPA	Disturbance and displacement	Above water noise	Red-breasted merganser	✓	✓	✓	✓
			Underwater noise	Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓
Visual disturbance			Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓	
Introduction of light			Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓	
Vibration			Supporting habitat (water column)	✓	✓	✓	✓	
Barrier to species movement (operational phase and HDD period of construction phase only)			Red-breasted merganser Supporting habitat (water column)	✓ ✓			✓	
Collision		Collision ABOVE water with static or moving objects	Red-breasted merganser	✓	✓	✓	✓	
		Collision BELOW water with static or moving objects	Red-breasted merganser	✓	✓	✓	✓	
Indirect effects		Changes in suspended solids (water clarity)	Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓	
			Deoxygenation	Supporting habitat (water column)	✓	✓	✓	✓
		Nutrient enrichment	Supporting habitat (water column)	✓	✓	✓	✓	
		Habitat structure changes- removal of substratum (Construction and decommissioning phases only)	Supporting habitat (water column)	✓	✓	✓		
		Physical loss (to land or freshwater) (operational phase and cable	Supporting habitat (water column)			✓	✓	



Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O		
		lay/burial/protection period of construction phase only)							
		Water flow (tidal current) changes, including sediment transport considerations	Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓		
		Emergence regime changes, including tidal level change considerations (HDD period of construction phase only)	Red-breasted merganser Supporting habitat (water column)	✓ ✓					
		Transition elements and organometal contamination	Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓		
		Wave exposure changes (HDD period of construction phase only)	Red-breasted merganser Supporting habitat (water column)	✓ ✓					
		Organic enrichment (HDD period of construction phase only)	Supporting habitat (water column)	✓					
		Physical change to another seabed type (HDD period of construction phase only)	Supporting habitat (water column)	✓					
		Physical change to another sediment type (HDD period of construction phase only)	Supporting habitat (water column)	✓					
		Electromagnetic changes (operational phase only)	Supporting habitat (water column)				✓		
		Temperature decreases (operational phase only)	Supporting habitat (water column)				✓		
		Temperature increases (operation phase only)	Supporting habitat (water column)				✓		
		Accidental spills	Hydrocarbon and PAH contaminants	Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓	
				Synthetic compound contamination (incl. pesticides, antifoulants and pharmaceuticals)	Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓
				Introduction of other substances (solid, liquid, gas)	Red-breasted merganser Supporting habitat (water column)	✓			
		Litter	Litter	Red-breasted merganser Supporting habitat (water column)	✓ ✓	✓ ✓	✓ ✓	✓ ✓	
INIS	Introduction or spread of INIS	Supporting habitat (water column)	✓	✓	✓	✓			
Solent and Southampton Water SPA	Disturbance and displacement	Above water noise	Sandwich tern	✓	✓	✓	✓		
			Common tern	✓	✓	✓	✓		
			Roseate tern	✓	✓	✓	✓		
			Little tern	✓	✓	✓	✓		
			Mediterranean gull	✓	✓	✓	✓		
		Underwater noise	Sandwich tern	✓	✓	✓	✓		
			Common tern	✓	✓	✓	✓		
			Roseate tern	✓	✓	✓	✓		
			Little tern	✓	✓	✓	✓		
Visual disturbance	Sandwich tern	✓	✓	✓	✓				
	Common tern	✓	✓	✓	✓				
		Roseate tern	✓	✓	✓	✓			

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O
			Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
		Introduction of light	Sandwich tern Common tern Roseate tern Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
		Vibration	Supporting habitat (water column)	✓	✓	✓	✓
		Barrier to species movement (operational phase and HDD period of construction phase only)	Little tern Supporting habitat (water column)	✓ ✓			✓ ✓
	Collision	Collision ABOVE water with static or moving objects	Sandwich tern Common tern Roseate tern Little tern Mediterranean gull	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
		Collision BELOW water with static or moving objects	Sandwich tern Common tern Roseate tern Little tern Mediterranean gull	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
	Indirect effects	Changes in suspended solids (water clarity)	Sandwich tern Common tern Roseate tern Little tern Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
		Deoxygenation	Supporting habitat (water column)	✓	✓	✓	✓
		Nutrient enrichment	Supporting habitat (water column)	✓	✓	✓	✓
		Habitat structure changes- removal of substratum (Construction and decommissioning phases only)	Supporting habitat (water column)	✓	✓	✓	
		Physical loss (to land or freshwater) (operational phase and cable lay/burial/protection period of construction phase only)	Supporting habitat (water column)			✓	✓
		Water flow (tidal current) changes, including sediment transport considerations	Sandwich tern Common tern Roseate tern Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
		Emergence regime changes, including tidal level change considerations (HDD period of construction phase only)	Sandwich tern Common tern Roseate tern	✓ ✓ ✓			

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O
			Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓			
		Transition elements and organometal contamination	Sandwich tern Common tern Roseate tern Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
		Wave exposure changes (HDD period of construction phase only)	Supporting habitat (water column)	✓			
		Organic enrichment (HDD period of construction phase only)	Supporting habitat (water column)	✓			
		Physical change to another seabed type (HDD period of construction phase only)	Supporting habitat (water column)	✓			
		Physical change to another sediment type (HDD period of construction phase only)	Supporting habitat (water column)	✓			
		Electromagnetic changes (operational phase only)	Supporting habitat (water column)				✓
		Temperature decreases (operational phase only)	Supporting habitat (water column)				✓
		Temperature increases (operation phase only)	Supporting habitat (water column)				✓
		Accidental spills	Hydrocarbon and PAH contaminants	Sandwich tern Common tern Roseate tern Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
	Synthetic compound contamination (incl. pesticides, antifoulants and pharmaceuticals)			Sandwich tern Common tern Roseate tern Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
	Introduction of other substances (solid, liquid, gas)		Sandwich tern Common tern Roseate tern Little tern Mediterranean gull Supporting habitat (water column)	✓ ✓ ✓ ✓ ✓ ✓			
	Litter	Litter	Sandwich tern Common tern Roseate tern Little tern Mediterranean gull	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O
	INIS	Introduction or spread of INIS	Supporting habitat (water column)	✓	✓	✓	✓
			Sandwich tern	✓	✓	✓	✓
			Common tern	✓	✓	✓	✓
			Roseate tern	✓	✓	✓	✓
			Little tern	✓	✓	✓	✓
			Mediterranean gull	✓	✓	✓	✓
			Supporting habitat (water column)	✓	✓	✓	✓
Pagham Harbour SPA	Disturbance and displacement	Above water noise	Common tern	✓	✓	✓	✓
		Underwater noise	Common tern	✓	✓	✓	✓
		Visual disturbance	Supporting habitat (water column)	✓	✓	✓	✓
			Common tern	✓	✓	✓	✓
		Introduction of light	Supporting habitat (water column)	✓	✓	✓	✓
			Common tern	✓	✓	✓	✓
	Vibration	Supporting habitat (water column)	✓	✓	✓	✓	
	Barrier to species movement (operational phase and HDD period of construction phase only)	Supporting habitat (water column)	✓			✓	
	Collision	Collision ABOVE water with static or moving objects	Common tern	✓	✓	✓	✓
		Collision BELOW water with static or moving objects	Common tern	✓	✓	✓	✓
	Indirect effects	Changes in suspended solids (water clarity)	Common tern	✓	✓	✓	✓
			Supporting habitat (water column)	✓	✓	✓	✓
		Deoxygenation	Supporting habitat (water column)	✓	✓	✓	✓
		Nutrient enrichment	Supporting habitat (water column)	✓	✓	✓	✓
		Habitat structure changes- removal of substratum (Construction and decommissioning phases only)	Supporting habitat (water column)	✓	✓	✓	
		Physical loss (to land or freshwater) (operational phase and cable lay/burial/protection period of construction phase only)	Supporting habitat (water column)			✓	✓
		Water flow (tidal current) changes, including sediment transport considerations	Common tern	✓	✓	✓	✓
			Supporting habitat (water column)	✓	✓	✓	✓
		Emergence regime changes, including tidal level change considerations (HDD period of construction phase only)	Common tern	✓			
			Supporting habitat (water column)	✓			
Transition elements and organometal contamination		Common tern	✓	✓	✓	✓	
		Supporting habitat (water column)	✓	✓	✓	✓	
Wave exposure changes (HDD period of construction phase only)	Supporting habitat (water column)	✓					
Organic enrichment (HDD period of construction phase only)	Supporting habitat (water column)	✓					
Physical change to another seabed type (HDD period of construction phase only)	Supporting habitat (water column)	✓					

Relevant SPA/Ramsar site	Effect	Pressure	Features	AoO-Cables HDD C	AoO-Cable Decomm D	AoO- Cable Lay, Bury, Protect C	AoO- Cable O&M O	
		Physical change to another sediment type (HDD period of construction phase only)	Supporting habitat (water column)	✓				
		Electromagnetic changes (operational phase only)	Supporting habitat (water column)				✓	
		Temperature decreases (operational phase only)	Supporting habitat (water column)				✓	
		Temperature increases (operation phase only)	Supporting habitat (water column)				✓	
	Accidental spills	Hydrocarbon and PAH contaminants	Common tern		✓	✓	✓	✓
			Supporting habitat (water column)		✓	✓	✓	✓
		Synthetic compound contamination (incl. pesticides, antifoulants and pharmaceuticals)	Common tern		✓	✓	✓	✓
		Introduction of other substances (solid, liquid, gas)	Supporting habitat (water column)		✓			
	Litter	Litter	Common tern		✓	✓	✓	✓
			Supporting habitat (water column)		✓	✓	✓	✓
INIS	Introduction or spread of INIS	Common tern		✓	✓	✓	✓	
		Supporting habitat (water column)		✓	✓	✓	✓	



Relevant SPA/Ramsar site	Effect	Pressure	Features	C	O	D
			Teal Wigeon Turnstone Dark-bellied brent goose Sanderling Dunlin Grey plover Ringed Plover Bar-tailed godwit Curlew Shelduck Redshank Waterfowl assemblage	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
		Vibration	Supporting habitat (freshwater and coastal grazing marsh)	✓		✓
	Indirect effects	Habitat structure changes – removal of substratum	Supporting habitat (freshwater and coastal grazing marsh)	✓	✓	✓
		Physical loss (to land or freshwater)	Supporting habitat (freshwater and coastal grazing marsh)	✓		✓
		Transition elements and organometal contamination	Supporting habitat (freshwater and coastal grazing marsh)	✓	✓	✓
	Accidental spills	Hydrocarbon and PAH contaminants	Sandwich tern	✓	✓	✓
			Little tern	✓	✓	✓
			Common tern	✓	✓	✓
			Pintail	✓	✓	✓
			Shoveler	✓	✓	✓
			Teal	✓	✓	✓
			Wigeon	✓	✓	✓
			Turnstone	✓	✓	✓
			Dark-bellied brent goose	✓	✓	✓
			Sanderling	✓	✓	✓
			Dunlin	✓	✓	✓
			Grey plover	✓	✓	✓
			Ringed Plover	✓	✓	✓
			Bar-tailed godwit	✓	✓	✓
			Curlew	✓	✓	✓
			Shelduck	✓	✓	✓
			Redshank	✓	✓	✓
	Waterfowl assemblage	✓	✓	✓		
		Synthetic compound contamination (incl. pesticides, antifoulants and pharmaceuticals)	Sandwich tern	✓	✓	✓
			Little tern	✓	✓	✓
			Common tern	✓	✓	✓
			Pintail	✓	✓	✓
			Shoveler	✓	✓	✓
			Teal	✓	✓	✓
			Wigeon	✓	✓	✓







Relevant SPA/Ramsar site	Effect	Pressure	Features	C	O	D
			Ringed Plover Bar-tailed godwit Curlew Shelduck Redshank Waterfowl assemblage Supporting habitat (freshwater and coastal grazing marsh)	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
Portsmouth Harbour SPA/Ramsar site	Disturbance and displacement	Visual disturbance	Dark-bellied brent goose Dunlin Black-tailed godwit	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
		Noise disturbance	Dark-bellied brent goose Dunlin Black-tailed godwit	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
		Introduction of light	Dark-bellied brent goose Dunlin Black-tailed godwit	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
	Indirect effects	Habitat structure changes – removal of substratum	Supporting habitat (freshwater and coastal grazing marsh)	✓	✓	✓
		Physical loss (to land or freshwater	Supporting habitat (freshwater and coastal grazing marsh)	✓	✓	✓
		Transition elements and organometal contamination	Supporting habitat (freshwater and coastal grazing marsh)	✓	✓	✓
	Accidental spills	Hydrocarbon and PAH contaminants	Dark-bellied brent goose Dunlin Black-tailed godwit Supporting habitat (freshwater and coastal grazing marsh)			
		Synthetic compound contamination (incl. pesticides, antifoulants and pharmaceuticals)	Dark-bellied brent goose Dunlin Black-tailed godwit Supporting habitat (freshwater and coastal grazing marsh)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓
	Litter	Litter	Dark-bellied brent goose Dunlin Black-tailed godwit Supporting habitat (freshwater and coastal grazing marsh)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓
	INIS	Introduction or spread of INIS	Dark-bellied brent goose Dunlin Black-tailed godwit Supporting habitat (freshwater and coastal grazing marsh)	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓

