

Volume 2, Chapter 14

# Nature Conservation



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## 14. Nature conservation

### 14.1 Introduction

14.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary results of the assessment of the likely significant effects of Rampion 2 with respect to marine nature conservation designations during the construction, operation and maintenance and decommissioning phases of the Proposed Development. It should be read in conjunction with **Appendix 14.1: Draft MCZ Assessment, Volume 4**, the project description provided in **Chapter 4: The Proposed Development** and the relevant parts of the following chapters:

- **Chapter 6: Coastal processes** (changes to coastal processes have the potential to directly or indirectly impact nature conservation receptors, therefore the information from this assessment will be used to inform the nature conservation assessment);
- **Chapter 8: Fish and shellfish ecology** (information on protected fish and shellfish receptors will be included within this section and therefore must be considered together);
- **Chapter 9: Benthic, subtidal and intertidal ecology** (information on protected benthic subtidal and intertidal receptors will be included within this section and therefore must be considered together);
- **Chapter 11: Marine mammals** (information on protected marine mammal receptors will be included within this section and therefore must be considered together); and
- **Chapter 12: Offshore ornithology** (information on protected offshore ornithology receptors will be included within this section and therefore must be considered together).
- **Draft Report to Inform Appropriate Assessment (RIAA)** (Habitats Regulations Assessment of National Site Network and their qualifying features) (RED, 2021).
- **Chapter 23: Terrestrial ecology and nature conservation** considers the impact pathways from onshore components on receptors that may have connectivity with offshore or coastal designated sites where appropriate.

14.1.2 This chapter describes:

- the legislation, planning policy and other documentation that has informed the assessment (**Section 14.2: Relevant legislation, planning policy, and other documentation**);
- the outcome of consultation engagement that has been undertaken to date, including how matters relating to nature conservation within the Scoping Opinion received in August 2020 have been addressed (**Section 14.3: Consultation and engagement**);

- the scope of the assessment for nature conservation (**Section 14.4: Scope of the assessment**);
- the methods used for the baseline data gathering (**Section 14.5: Methodology for baseline data gathering**);
- the overall baseline (**Section 14.6: Baseline conditions**)
- embedded environmental measures relevant to nature conservation and the relevant maximum design scenario (**Section 14.7: Basis for PEIR assessment**);
- the assessment methods used for the PEIR (**Section 14.8: Methodology for PEIR assessment**);
- the assessment of nature conservation effects (**Section 14.9-14.11: Preliminary assessment** and **Section 14.12: Preliminary assessment: Cumulative effects approach**);
- consideration of transboundary effects (**Section 14.13: Transboundary effects**);
- consideration of Inter-related effects (**Section 14.14: Inter-related effects**)
- a summary of residual effects for nature conservation (**Section 14.15: Summary of residual effects**);
- an outline of further work to be undertaken for the Environmental Statement (ES) (**Section 14.16: Further work to be undertaken for ES**);
- a glossary of terms and abbreviations is provided in **Section 14.17: Glossary of terms and abbreviations**; and
- a references list is provided in **Section 14.18: References**.

## 14.2 Relevant legislation, policy and other information and guidance

### Introduction

- 14.2.1 This section identifies the legislation, policy and other documentation that has informed the assessment of effects with respect to nature conservation. Further information on policies relevant to the EIA and their status is provided in **Chapter 2: Policy and legislative context** of this PEIR.
- 14.2.2 The Overarching National Policy Statement (NPS) for Energy (EN-1) (July 2011) sets out policy for the Secretary of State with regard to generic impacts on designated sites.

### Legislation and national planning policy

- 14.2.3 **Table 14-1** lists the legislation relevant to the assessment of the effects on nature conservation receptors.



Table 14-1 Legislation relevant to nature conservation

Legislation description	Relevance to assessment
<b>EC Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora, 1992 ('the Habitats Directive')</b>	
<p>The Habitats Directive requires Member States to take measures to maintain or restore natural habitats (listed on Annex I) and wild species (Annex II) at favourable conservation status by the designation of Special Areas of Conservation (SACs).</p> <p>The Conservation of Offshore Marine Habitats and Species Regulation 2017 implement the Habitats Directive in relation to marine areas where the UK has jurisdiction beyond territorial waters (broadly 12 nautical miles (nm) to 200 nautical miles). The Conservation of Habitats and Species Regulations 2010 implement the Habitats Directive in relation to England and Wales as far as the limit of territorial waters (usually 12 nm).</p>	<p>The Rampion 2 study area does not overlap with any Annex I habitats or static qualifying features of National Site Network sites. Embedded environmental measures to avoid impacts on the various SAC features are described in <b>(Table 14-12)</b>. Impacts to mobile species that are qualifying features of SACs have been assessed within <b>Sections 14.9 to 14.12</b>. Sites within the National Site Network are considered in the <b>Draft Report to Inform Appropriate Assessment (RIAA)</b> (RED, 2021).</p>
<b>EC Directive 79/409/EEC on the Conservation of Wild Birds, 1979 ('the Birds Directive')</b>	
<p>The Birds Directive requires Member States to take measures for the conservation of wild birds through the designation of 'Special Protection Areas' (SPAs). The Conservation of Offshore Marine Habitats and Species Regulation 2017 implement the Birds Directive in relation to marine areas where the UK has jurisdiction beyond territorial waters. The Conservation of Habitats and Species Regulations 2017 implement the Birds Directive in relation to England and Wales as far as the limit of territorial waters. Often sites classified as SPAs are also designated as Wetlands of International Importance under the Ramsar Convention.</p>	<p>The Rampion 2 study area does not overlap with any Annex I habitats or static qualifying features of National Site Network sites. Embedded environmental measures to avoid impacts on the various SAC features are described in <b>(Table 14-12)</b>. Impacts to mobile species that are qualifying features of SACs have been assessed within <b>Sections 14.9 to 14.12</b>. Sites within the national site network are considered in the <b>Draft RIAA</b> (RED, 2021).</p>
<b>Marine and Coastal Access Act 2009</b>	
<p>Marine Conservation Zone (MCZ) are designated under The Marine and Coastal Access Act 2009 to create marine</p>	<p>A number of MCZs fall within the Nature Conservation study area or are designated for mobile features which have the</p>

Legislation description	Relevance to assessment
<p>protected areas (MPA) to protect national features of conservation. MCZs are intended to protect areas that are important to conserve the diversity of rare, threatened and representative marine habitats, species, geology and geomorphology in UK waters and they, together with other types of MPAs, deliver the Government's objective for an ecologically coherent network of MPAs. As part of the MCZ process, so-called 'reference areas' will be designated, in which all extractive, depositional and/or disturbing and damaging activities are excluded.</p>	<p>potential to interact with the primary or secondary Zones of Influence (ZOI), however there is no direct overlap with any MCZ site boundaries. Embedded environmental measures to avoid impacts on the various MCZ features are described in (<b>Table 14-12</b>). Potential impacts to MCZs and the associated qualifying features have been assessed within <b>Sections 14.9 to 14.12</b>. MCZs are also considered within the <b>Appendix 14.1. Marine Conservation Zone (MCZ) Assessment, Volume 4</b>.</p>
<b>Wildlife and Countryside Act 1981 (as amended)</b>	
<p>The Wildlife and Countryside Act consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention') and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive).</p>	<p>Rampion 2 PEIR nature conservation study area interacts with a number of SSSIs and associated qualifying features. Embedded environmental measures to avoid impacts on the various SSSI features are described in (<b>Table 14-12</b>). Potential impacts to features have been assessed within <b>Sections 14.9 to 14.12</b>.</p>
<p>Amongst other matters it provides protection for wild birds, certain flora and fauna and sets the framework for the protection and management of SSSIs.</p>	<p>The Proposed Development could have potential effects on several fish species protected by The Wildlife and Countryside Act including both short-snouted (<i>Hippocampus hippocampus</i>) and spiny/long-snouted (<i>H. guttulatus</i>) seahorses and their habitat are fully protected out to the 12 nm limit. The Schedule 5 species short-snouted seahorse (<i>H. hippocampus</i>) is also a qualifying feature of a number of MCZs in the area. The assessment present and referenced above is therefore relevant to both seahorse species as a Schedule 5 species and as a qualifying feature of MCZs.</p>
<p>The Wildlife and Countryside Act (W&amp;CA) 1981 protects several fish species found in the marine environment. Under the Variation of Schedule 5 (England) Order 2008. Both short-snouted (<i>Hippocampus hippocampus</i>) and spiny/long snouted (<i>H. guttulatus</i>) seahorses and their habitat are fully protected out to the 12 nautical mile limit. Additionally, shad (<i>Alosa</i> sp.) are protected Basking shark (<i>Cetorhinus maximus</i>) and angel shark (<i>Squatina squatina</i>) are also protected. This protection means that it is an offence to intentionally or recklessly harm or disturb these species. Protection includes a prohibition of killing, injuring or taking, damage or destruction of their</p>	



Legislation description	Relevance to assessment
places of shelter, or disturbance while such animals are occupying places of shelter.	
<b>National Parks and Access to the Countryside Act 1949</b>	
Sites of Special Scientific Interest (SSSI) were introduced under the National Parks and Access to the Countryside Act 1949 and strengthened by subsequent legislation (for example, Wildlife and Countryside Act 1981 and the Countryside and Rights of Way Act 2000), SSSIs are the basic “building block” of conservation areas in the UK and underpin sites such as SPAs. SSSIs can be designated based on biological or geological interest.	Rampion 2 PEIR nature conservation study area interacts with a number of SSSIs and associated qualifying features. Embedded environmental measures to avoid impacts on the various SSSI features are described in ( <b>Table 14-12</b> ). Potential impacts to features have been assessed within <b>Sections 14.9 to 14.12</b> .
<b>The Ramsar Convention 1971 (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat)</b>	
The Ramsar Convention 1971 is an international treaty for the conservation and sustainable utilisation of wetlands, to which the UK is a signatory. In the UK, intertidal Ramsar sites often have the same boundaries as SPAs.	The Rampion 2 study area does not overlap with any Annex I habitats or static qualifying features of National Site Network sites. Embedded environmental measures to avoid impacts on the various SAC features are described in ( <b>Table 14-12</b> ). Impacts to mobile species that are qualifying features of SACs have been assessed within <b>Sections 14.9 to 14.12</b> . Sites within the national site network are considered in the <b>Draft RIAA</b> (RED, 2021).
<b>The Convention on Biological Diversity 1992</b>	
UK ‘biodiversity action plans’ (BAPs) are the UK’s response to the Convention on Biological Diversity 1992. The UKBAPs describe the UK’s biological resources, commits to a detailed plan for the protection of these resources and lists 1,149 species and 65 habitats as conservation priorities.	Further details of BAP habitats are provided in <b>Section 14.6</b> , but of particular relevance to the Proposed Development are the following: Chalk and clay exposures; Ross worm <i>Sabellaria spinulosa</i> beds; and subtidal sands and gravels.

14.2.4 **Table 14-2** lists the national planning policy relevant to the assessment of the effects on nature conservation receptors.

Table 14-2 National planning policy relevant to nature conservation

Policy description	Relevance to assessment
<b>The Overarching National Policy Statement (NPS) for Energy (EN-1) (July 2011)</b>	
Paragraph 5.3.3 states that ‘Where the development is subject to EIA the applicant should ensure that the Environmental Statement (ES) clearly sets out any effects on internationally, nationally and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity.	The construction, operation and maintenance and decommissioning of Rampion 2 have been assessed as part of the preliminary assessment process for designated sites as well as for protected species and habitats ( <b>Sections 14.9 to 14.12</b> ). This includes an assessment of impacts on the sites according to the EIA regulations.
Paragraph 5.3.4 states that: “The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.”	Opportunities to conserve and enhance biodiversity have been explored and noted where relevant (See <b>Table 14-12</b> ).
<b>EN-3 NPS for Renewable Energy</b>	
Paragraph 2.6.64 states that: “Applicants should assess the effects on the offshore ecology and biodiversity for all stages of the lifespan of the proposed offshore wind farm.”	Potential impacts associated with the construction, operation and maintenance and decommissioning phases of Rampion 2 have been assessed ( <b>Sections 14.9 to 14.12</b> ).
Paragraph 2.6.67 states that: “Applicants should assess the potential for the scheme to have both positive and negative effects on marine ecology and biodiversity.”	Both the positive and negative effects of Rampion 2 have been considered within the preliminary assessment ( <b>Sections 14.9 to 14.12</b> ).
<b>The Marine Policy Statement (MPS) (September 2011)</b>	
Paragraph 2.6.1.3 states that: “Development should aim to avoid harm to marine ecology, biodiversity and geological conservation interests (including geological and morphological features), including through location, mitigation and consideration of reasonable alternatives. Where significant harm cannot be avoided, then appropriate compensatory measures should be sought. Additional requirements apply in relation to developments affecting Natura 2000 sites.”	All relevant National Site Network Sites (formerly referred to as Natura 2000 sites) have been considered and assessed as part of the preliminary assessment ( <b>Sections 14.9 to 14.12</b> ). The reasons for each site’s designation are outlined in <b>Section 14.6</b> . These reasons include ecological and geological aspects. The individual ecology chapters consider habitats and species of principal importance.

Policy description	Relevance to assessment
Paragraph 2.6.1.4 states that: “It is also recognised that the benefits of development may include benefits for marine ecology, biodiversity and geological conservation interests and that these may outweigh potential adverse effects.”	Both positive and negative effects on the marine ecology and biodiversity have been assessed ( <b>Sections 8.10 to 8.12, Chapter 8</b> ).
<p>Box 1: The high level marine objectives: ‘Living within environmental limits’ covers the points relevant to benthic ecology, this requires, that:</p> <ol style="list-style-type: none"> <li>1) Biodiversity is protected, conserved and where appropriate recovered and loss has been halted.</li> <li>2) Healthy marine and coastal habitats occur across their natural range and are able to support strong, biodiverse biological communities and the functioning of healthy, resilient and adaptable marine ecosystems.</li> <li>3) Our oceans support viable populations of representative, rare, vulnerable, and valued species.”</li> </ol>	The Rampion 2 embedded environmental measures ( <b>Table 14-12</b> ) include measures designed to protect, and conserve benthic ecology features of ecological importance.

## Local planning policy

14.2.5 **Table 14-3** lists the local planning policy relevant to the assessment of the effects on nature conservation receptors.

**Table 14-3** Local planning policy relevant to nature conservation

Policy description	Relevance to assessment
<b>South Inshore and South Offshore Marine Plan (July 2018)</b>	
<p>Policy reference: S-MPA-1</p> <p><i>‘Any impacts on the objectives of marine protected areas and the ecological coherence of the marine protected area network must be taken account of in strategic level measures and assessments, with due regard given to statutory advice on an ecologically coherent network.’</i></p>	<p>Designated sites within the Rampion 2 nature conservation study area have been described in <b>Table 14-12</b>. Features of designated sites have been assessed within <b>Sections 14.9 to 14.12</b>. Designated sites have also been considered in the <b>Report to Inform an Appropriate Assessment (RED,2021)</b> and <b>Appendix</b></p>

Policy description	Relevance to assessment
	<b>14.1: Marine Conservation Zone Assessment, Volume 4.</b>
<p>Policy reference: S-NIS-1</p> <p><i>‘Proposals must put in place appropriate measures to avoid or minimise significant adverse impacts on the marine area that would arise through the introduction and transport of non-indigenous species, particularly when: 1) moving equipment, boats or livestock (for example fish and shellfish) from one water body to another 2) introducing structures suitable for settlement of non-indigenous species, or the spread of invasive non-indigenous species known to exist in the area.’</i></p>	<p>The Rampion 2 embedded environmental measures (<b>Table 14-12</b>) include measures to avoid the introduction or spread of Marine Invasive Non-Native Species (MINNS) through the implementation of the PEMMP (C-95) secured through the Development Consent Order (DCO).</p>
<p>Policy reference: S-BIO-1</p> <p><i>‘Proposals that may have significant adverse impacts on natural habitat and species adaptation, migration and connectivity must demonstrate that they will, in order of preference: a) avoid, b) minimise c) mitigate significant adverse impacts.’</i></p>	<p>The potential effects on designated sites associated with the construction, operation and decommissioning of Rampion 2 have been assessed (<b>Sections 14.9 to 14.12</b>). The mitigation hierarchy has been applied.</p>
<b>Sussex Biodiversity Action Plan (BAP)</b>	
<p>A BAP addresses threatened species and habitats, designed to protect and restore biological systems. The overall aim of the Sussex BAP is to conserve and enhance the biological diversity of Sussex and contribute to the conservation and enhancement of both national and international biodiversity.</p>	<p>Further details of BAP habitats are provided in <b>Section 14.6</b>, but of particular relevance to the Proposed Development are the following: Chalk and clay exposures; Ross worm <i>Sabellaria spinulosa</i> beds; and subtidal sands and gravels.</p>

## Other relevant information and guidance

- 14.2.6 A summary of other relevant information and guidance relevant to the assessment undertaken for nature conservation is provided here:
- EIA Directive (2011/92/EU) 2014 (as amended). Requires adequate characterisation of the receiving environment;

- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Requires a description of the relevant aspects of the current state of the environment (baseline scenario);
- The Marine Strategy Framework Directive (MSFD), adopted in July 2008 and implemented in UK Law by the Marine Strategy Regulations 2010, has also been considered in the Rampion 2 assessment for benthic ecology. The relevance of the MSFD to Rampion 2 is described in full in Chapter 2: Policy and legislative context. The overarching goal of the MSFD is to achieve 'Good Environmental Status' (GES) by 2020 across Europe's marine environment;
- Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018). Requires that the baseline conditions for each ecological feature should be described clearly, objectively and succinctly. Also requires that the ecological information is adequate for the purpose of the EIA; and
- review of post-consent offshore wind farm monitoring data associated with licence conditions (MMO, 2014). Summarises empirical data from monitoring programmes relevant to offshore wind farm projects in respect of a range of environmental receptors.

## 14.3 Consultation and engagement

### Overview

- 14.3.1 This section describes the outcome of, and response to, the Scoping Opinion in relation to nature conservation assessment and also provides details of the ongoing informal consultation that has been undertaken with stakeholders and individuals. An overview of engagement undertaken can be found in **Section 1.5** of **Chapter 1: Introduction**.
- 14.3.2 Given the restrictions which have been in place due to the COVID-19 pandemic during this period, all consultation has avoided in person meetings. Consultation has taken the form of conference calls using Microsoft Teams, and feedback collected via phone, emails and online questionnaire.

### Early engagement

- 14.3.3 Early engagement was undertaken with a number of prescribed and non-prescribed consultation bodies including Natural England, the Marine Management Organisation (MMO) and Centre for Environment, Fisheries and Aquaculture Science (Cefas). This engagement was undertaken to introduce the Rampion 2 and the proposed approach to scoping the EIA and commenced in May 2020. Early engagement with stakeholders did not yield any comments specifically relevant to the nature conservation chapter. Further engagement and discussions in relation to technical topics are detailed in the respective chapters, where relevant any discussions around nature conservation have been incorporated into this chapter.

## Scoping opinion

- 14.3.4 Rampion Extension Development Limited (RED) submitted a Scoping Report and (RED, 2020) request for a Scoping Opinion to the Secretary of State (administered by the Planning Inspectorate (PINS)) on 2 July 2020. A Scoping Opinion was received on 11 August 2020. The Scoping Report set out the proposed nature conservation assessment methodologies, outline of the baseline data collected to date and proposed, and the scope of the assessment. **Table 14-4** sets out the comments received in Section 4 of the PINS Scoping Opinion 'Aspect based scoping tables – Offshore' and how these have been addressed in this PEIR. A full list of the PINS Scoping Opinion comments and responses is provided in **Appendix 5.1: Response to the Scoping Opinion, Volume 4**. Regard has also been given to other stakeholder comments that were received in relation to the Scoping Report.
- 14.3.5 The information provided in the PEIR is preliminary and therefore not all the Scoping Opinion comments have been able to be addressed at this stage, however all comments will be addressed within the ES.

Table 14-4 PINS Scoping Opinion responses – nature conservation

PINS ID number	Scoping Opinion comment	How this is addressed in this PEIR
4.10.1	Direct impacts to nature conservation features of designated sites are scoped out of further assessment on the basis that there is no physical overlap of between the Proposed Development and designated site (other than Climping Beach SSSI, direct effects to which are scoped in to the assessment). The Inspectorate agrees with the Applicant that direct effects can be excluded on this basis and considers that indirect effects will be assessed appropriately as set out in table 5.11.5 of the Scoping Report (subject to relevant comments in this Opinion).	<p>The approach to scoping nature conservation designations was developed through further consultation with stakeholders following issue of the Scoping Opinion. <b>Table 14-5</b> sets out consultation on the Nature Conservation Method Statement, and <b>Section 14.4</b> details the scope of the Nature Conservation preliminary assessment.</p> <p>Note, the export cable at the landfall will be installed using a Horizontal Directional Drilling Technique (HDD). This embedded measure (<b>Table 14-12</b>) results in avoidance of any direct disturbance to the Climping Beach SSSI. Therefore, direct disturbance on Climping Beach SSSI has not been considered within the Nature Conservation chapter.</p>
4.10.2	The Inspectorate recognises that there will be a high degree of overlap between the proposed	The Nature Conservation baseline describes the relevant designations to the preliminary assessment.



PINS ID number	Scoping Opinion comment	How this is addressed in this PEIR
	assessment of 'Nature conservation' as a standalone aspect chapter and several other aspects as listed in paragraph 5.11.2. This is also demonstrated by Table 5.11.5 of the Scoping Report (likely significant nature conservation effects) where it is explained that all baseline requirements will be covered by the individual aspect assessments (ie no additional data is required for the nature conservation aspect chapter).	Baseline information ( <b>Section 14.6</b> ) and assessment ( <b>Sections 14.9 - 14.12</b> ) on specific qualifying features is summarised from and cross-referenced to the relevant technical chapter where appropriate.
	The Inspectorate also notes the interface with the assessment of terrestrial ecology (section 6.6 of the Scoping Report, which is not listed in paragraph 5.11.2) as well as standalone HRA and WFD assessments that are proposed.	The scope of the Nature Conservation Assessment is detailed within <b>Section 14.4</b> . No impact pathways were identified between qualifying features of terrestrial designated sites and offshore activities within the offshore Nature Conservation Study Area. <b>Chapter 23: Terrestrial ecology and nature conservation</b> considers the impact pathways from onshore components on receptors that may have connectivity with offshore or coastal designated sites where appropriate.
	The Applicant should ensure the scope and content of the assessment is clearly framed with this in mind in order to avoid an overly complex assessment across a number of aspect chapters. Cross referencing should be used in order to avoid duplication and ease presentation of material for stakeholders.	Cross-referencing has been used throughout <b>Sections 14.9 - 14.12</b> where relevant to minimise duplication.
<b>4.10.3</b>	The Scoping Report identifies the spatial relationship of the Proposed Development to Marine Conservations Zones (MCZs) in Table 5.11.3 and Figure 5.11.3.	The scope of the Nature Conservation Assessment is detailed within <b>Section 14.4</b> . The assessment therefore considers the qualifying features of relevant MCZ

PINS ID number	Scoping Opinion comment	How this is addressed in this PEIR
	Although that the requirements for standalone MCZ assessment(s) under the Marine and Coastal Access Act (MCAA) are separate to the EIA process, the Inspectorate expects a coordinated approach to the assessment of effects on MCZs in the ES and any separate assessment under the MCAA.	within the context of the EIA. <b>Appendix 14.1, Volume 4</b> presents an assessment of MCZs in the context of the MCAA.
4.10.4	Potential effects Marine Local Wildlife Sites (LWS) should be considered and assessed as part of this aspect chapter where significant effects could occur. This should include the Waldrans Marine LWS, Shelley Rocks Marine LWS, and HMS Northcoates Marine LWS.	Local wildlife sites have been considered within this assessment. The full scope of the assessment is detailed in <b>Section 14.4</b> .
4.10.5	Reference is made to the WFD coastal water body and designated bathing waters, but no further reference is made to the assessment of effects to be reported within the scope of the Nature Conservation ES chapter. The potential for significant effects on this designation should be presented as part of the ES chapter, with appropriate cross reference to other aspect chapters (and standalone WFD reports) as required.	Changes to water quality were scoped out of the assessment in agreement with stakeholders during consultation on the Nature Conservation Method Statement ( <b>Table 14-5</b> ). <b>Appendix 27.3: WFD Assessment, Volume 4</b> presents an assessment on water quality.
4.10.6	The marine mammal “management unit scale” study area described in the section 5.7 of the Scoping Report identifies the Southern North Sea SAC as being relevant to the Proposed Development. On this basis, the Inspectorate would expect to see the SAC included in the assessment of potential significant effects in the nature conservation assessment chapter of the ES.	The marine mammal nature conservation study area is presented in <b>Section 14.4</b> . The Southern North Sea (SNS) SAC has been scoped into the assessment and is considered in <b>Sections 14.9 - 14.12</b> .

## Evidence Plan Process (EPP)

- 14.3.6 The EPP has been set up to provide a formal, non-legally binding, independently chaired forum to agree the scope of the EIA and HRA, and the evidence required to support the DCO Application. For nature conservation, further engagement has been undertaken via the Evidence Plan Process (EPP) Marine Processes and Ecology and Ornithology, Marine Mammal and HRA Expert Topic Groups (ETGs).
- 14.3.7 Engagement has been ongoing since 04 August 2020 in the form of conference calls and emails with the first Marine Processes and Ecology and Ornithology, Marine Mammal and HRA ETGs held on the 17 and 18 September 2020 respectively. Following publication of the Scoping Opinion additional ETGs were held on the 24 and 26 September 2021 in respect of Marine Processes and Ecology and Ornithology, Marine Mammal and HRA. Consultation that is relevant to specific technical receptors is detailed within the respective technical topic chapters as noted in **Section 14.1**.
- 14.3.8 A Nature Conservation Method Statement was circulated to the MMO and Natural England on the 23 December 2020. Natural England feedback on the nature conservation method statement is set out in **Table 14-5**.

**Table 14-5** Natural England consultation response to the Nature Conservation Method Statement

Natural England comment	How this is addressed in this PEIR
Natural England understand that the Applicants suggesting the HRA will consider Natura 2000 sites in a more detailed context and will include consideration of sites further afield which have the potential for connectivity related issues, particularly with regards to mobile species such as birds and marine mammals. This will include consideration of sites such as Southern North Sea SAC and Alderney West Coast and the Burhou Islands Ramsar. Natural England has concerns about undertaking such an approach. Taking this approach would mean that mobile species such as birds that are designated features of SSSI's will not be considered, as they lie outside of the proposed ZOI. In respect to SSSI's such as Seaford to Beachy Head SSSI and Brighton to Newhaven Cliffs SSSI, we strongly recommend that they are included within the assessment, and would continue to support such a position unless evidence is presented to suggest otherwise. These sites contain features such as	The approach to determining the scope of the assessment is detailed within <b>Section 14.4</b> . The nature conservation study area is driven by specific assessments within the various aspect chapters. For example, the benthic and fish and shellfish study area is identified based on one tidal excursion and thus the maximum distance of increased suspended sediment concentrations (SSC). Additional consideration is given to mobile species which may interact with Rampion 2 even where a site is beyond the study area for that receptor.

Natural England comment	How this is addressed in this PEIR
<p>aggregations of breeding Kittiwake, which a LSE cannot be ruled out for.</p>	<p>As noted above, where there is no overlap with a site and the relevant study area, in this case ornithology, consideration is given to sites where there is potential for connectivity between a qualifying species and the site. Refer to <b>Section 14.4</b> for the scope of the assessment.</p>
<p>In addition sites such as Dungeness, Romney Marsh and Rye Bay SPA/ Ramsar site, include among other species Sandwich Tern, for which the foraging ranges and / or the migratory routes and connectivity should be examined and screened in within the EIA and HRA. Similarly, the Alderney West Coast and Burhou Islands Ramsar, support large numbers of Gannet (7,885 pairs in 2011 representing 2.3% of the world population, and 3.4% of the British isles population, according to the Alderney West Coast and Burhou Islands Ramsar Site Management Strategy 2012 – 2016), and it is strongly recommended that sites such as this are included in any EIA and HRA assessment and the relevant authorities for the area consulted.</p>	
<p>The developer states that ‘for the assessment, marine and intertidal designated sites within the vicinity of the scoping boundary will be included within the baseline, these include offshore sites and those in the intertidal zone extending up to the Mean High-Water Spring (MHWS)’. Natural England advise that there is a potential for offshore activities to affect the features of sites found above MHWS, for example in relation to bird disturbance at coastal sites. This should be considered where relevant within either the offshore or onshore assessment.</p>	<p>Terrestrial designated sites are considered within <b>Chapter 23: Terrestrial ecology and nature conservation</b>. If onshore activities have the potential to impact on qualifying features of a coastal or marine designated site these are assessed as required. Similarly, marine or coastal activities that have the potential to impact on terrestrial designations are considered within the onshore chapter as required.</p>
<p>In relation to whether an effect requires a simple or detailed assessment, it should not be discounted that a simple assessment may need to become more detailed as the project develops.</p>	<p>The preliminary assessment is based on the maximum design scenario as set out in <b>Section 14.7</b>. The methodology for assessment is set out in <b>Section 14.8</b>. The assessments presented are commensurate with the level of risk associated with each potential impact. The assessment of impacts set out in <b>Sections 14.9 - 14.12</b> cross-references to detailed assessments</p>

Natural England comment	How this is addressed in this PEIR
<p>Natural England supports the use of GIS mapping to present baseline features and their value/sensitivity, project activities and their impact zones, descriptions of mitigation and where it will be applied and illustrate the significance of residual effects.</p>	<p>undertaken within the relevant aspect chapters as required.</p> <p><b>Section 14.4</b> presents the GIS data considered within the Nature Conservation chapter. For presentation of the specific data sets used to inform the technical assessment refer to the specific aspect chapters.</p>
<p>The ZOI for each subject area should be kept under review as further information such as the noise modelling becomes available or the understanding of coastal processes change at all. This may mean additional designated sites need to be considered at a later stage.</p>	<p>The Zone of Influence (ZOI) has been applied to identify overlapping sites with static receptors. Additional consideration has also been given to sites beyond the study area that have been designated for mobile species. <b>Section 14.8</b> details the approach to the preliminary assessment.</p>
<p>Direct habitat disturbance to Climping Beach SSSI - we remind the Applicant of our previous advice at the scoping stage (4/8/2020) that in the first instance they should look to avoid direct disturbance to the SSSI in relation to both the cable route and the construction methodology selected.</p>	<p>HDD has been incorporated into the Rampion 2 design as an embedded measure detailed within <b>Table 14-12</b>. In addition, the HDD bore will pass to the west of the Climping Beach SSSI and will not go underneath the site and the launch and retrieval points will also be located outside the site. There is therefore no direct disturbance pathway on the notified features of Climping Beach SSSI.</p>
<p>Direct habitat disturbance to other designated sites is currently scoped out. This should remain under review for Kingmere MCZ and Offshore Overfalls MCZ in relation to the construction methodology and the final location of the cable route.</p>	<p>The preliminary assessment has considered the maximum design scenario as set out in <b>Section 14.7</b>. Following PEIR this will be reviewed against any design changes and the assessment revised accordingly.</p>
<p>Temporary increase in suspended sediment and sediment deposition on designated features (construction and decommissioning phases). Natural England note that significant chalk plumes were visible and persistent from cable installation at Rampion 1 Offshore Wind Farm and that the potential for similar effects should therefore be a key consideration. The developer should also</p>	<p>Impacts resulting from temporary increase in suspended sediment and sediment deposition during construction and decommissioning on designated features has been scoped into the assessment (see <b>Section 14.4</b>). The scope of the assessment and the resultant impacts is informed by the coastal processes modelling undertaken as part of the</p>

Natural England comment	How this is addressed in this PEIR
consider the potential for suspended sediment during the operation phase should cable re-burial, or further cable protection be required.	assessment on coastal processes ( <b>Chapter 6: Coastal processes</b> ).
Natural England welcomes the provision text to demonstrate which sites have been considered and why sites certain sites have been scoped out of the assessment.	Noted.
It is stated that Pagham Harbour SPA falls outside of the offshore ornithology ZOI, but that Pagham Harbour Ramsar falls within the offshore ornithology ZOI. These two sites have the same boundary. Clear reasoning needed to be provided for the decision to scope these sites in or out of the assessment. Please refer to our earlier comments in relation to whether sites such as this should be scoped into the EIA as well as the HRA.	The Pagham Harbour SPA / Ramsar will be considered where there area impact pathways identified where connectivity can be identified through foraging range and site specific survey data or where there is a potential impact pathway to supporting habitats. In this instance Pagham Harbour SPA / Ramsar has been scoped into the NC assessment and consideration given to impacts on supporting habitats (see <b>Section 14.4</b> and <b>Sections 14.9 - 14.12</b> ).
The following marine local wildlife sites (LWS) will be included within the assessment if they fall within the ZOI for features for which they are designated: Waldrons Marine LWS, Shelley Rocks LWS and HMS Northcoates Marine LWS. In addition to LWS, Marine Sites of Nature Conservation Interest should be considered. Natural England is aware of sites such as Kingmere Rocks and Worthing Lumps in proximity to the development. It may also be necessary to consider additional Local Nature Reserves (LNR) such as Shoreham Beach LNR and Pagham Harbour LNR.	As detailed in <b>Section 14.4</b> LWSs have been screened into the assessment where there is an overlap with the relevant nature conservation ZOI.
Bembridge MCZ – It is suggested that this site is only designated for benthic ecology features of interest and falls outside of the benthic ecology ZOI, therefore no impact is expected from the proposed development of Rampion 2. This is not the case as this site also contains fish and shellfish features.	The distance of the site from the Proposed Development means that there is no potential for effects within the site boundaries on static features of the MCZ from the activities associated with Rampion 2. The site falls beyond the study limits for both benthic and fish and shellfish buffers (15km around the array area of the offshore part of the PEIR assessment Boundary and 10km along the offshore



Natural England comment	How this is addressed in this PEIR
	export cable corridor area of the PEIR Assessment Boundary). However, as seahorse (as a feature of the Bembridge MCZ) may spend periods of the year outside of the site and potentially in the vicinity of Rampion 2 Bembridge MCZ has been scoped into the MCZ assessment (see <b>Section 14.4</b> ).
Pagham Harbour SSSI – It is stated that this site falls outside the offshore ornithology and intertidal ecology ZOI. The intertidal ecology ZOI is not shown on the map or defined within this method statement. Pagham Harbour SSSI does fall within the benthic ecology and fish and shellfish ZOI. Therefore it is assumed, based on the information provided, that this site should be scoped into the assessment.	Pagham Harbour SSSI is included within the scope of the assessment (see <b>Section 14.4</b> and <b>Sections 14.9 - 14.12</b> ).
Pagham Harbour MCZ is scoped into the nature conservation assessment, but is missing from the list of MCZ's considered in the MCZ Assessment.	Pagham Harbour MCZ has been considered within <b>Appendix 14.1: Draft MCZ Assessment, Volume 4</b> .
The noise modelling has not yet been carried out. Therefore it should not be discounted at this stage that sites that fall outside of the study areas for ornithology, benthic, fish and shellfish ecology, but fall within the noise sensitivity study area will not need to be scoped in should they contain noise sensitive features at a later stage.	The assessment on nature conservation has considered the scope of the noise modelling where relevant in identifying the scope of the nature conservation chapter (see <b>Section 14.4</b> ). Consideration is provided to sensitive features that may be beyond the ZOI described where there is justification to do so.

## Informal consultation and engagement

### Overview

- 14.3.9 A summary of the informal consultation undertaken between the completion of the Scoping Report and up to and including March 2021 is outlined in this section.

### Informal consultation – January / February 2021

- 14.3.10 RED carried out an Informal Consultation exercise for a period of four weeks from 14 January 2021 to 12 February 2021. This Informal Consultation exercise aimed to engage with a range of stakeholders including the prescribed and non-prescribed consultation bodies, local authorities, Parish Councils and general

public with a view to introducing the Proposed Development and seeking early feedback on the emerging designs.

- 14.3.11 Further detail about the results of the Informal Consultation exercise can be found in the **Informal Consultation Analysis**

## 14.4 Scope of the assessment

### Overview

- 14.4.1 This section sets out the scope of the PEIR assessment for nature conservation. This scope has been developed as Rampion 2 design has evolved and responds to feedback received to date as set out in **Section 14.3**. As outlined in the Planning Inspectorate's (PINS) Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements (Version 7, the Planning Inspectorate, 2020), information presented in the PEIR is preliminary, therefore this scope will be reviewed and may be refined as Rampion 2 evolves and as a result of ongoing consultation.

### Spatial scope and study area

- 14.4.2 The spatial scope of the nature conservation assessment is defined as the PEIR Assessment Boundary together with the maximum ZOIs as defined by individual technical disciplines: fish and shellfish ecology; benthic subtidal and intertidal ecology; marine mammals; and offshore ornithology (See **Figure 14-1, Volume 3**):
- a 15km buffer around the PEIR Assessment Boundary and 10km surrounding the offshore cable corridor for the benthic/fish and shellfish ecology ZOI (**Chapter 9: Benthic, subtidal and intertidal ecology, para 9.4.2**);
  - a 4km buffer around the PEIR Assessment Boundary for the offshore ornithology based on an area which is considered to represent a realistic maximum spatial extent of potential impacts on ornithological receptors to take account of birds at risk of disturbance, displacement or collision **Chapter 12: Offshore ornithology, Para 12.4.4**; and
  - the marine mammal nature conservation study area has been defined as the North Sea and Offshore Channel Celtic Sea and Southwest England Management Units to reflect the highly mobile nature of marine mammals (**Chapter 11: Marine mammals, para 11.4.2**).
- 14.4.3 Marine and intertidal designated sites within the study area will be included within the baseline, these include offshore sites and those in the intertidal zone extending up to the Mean High-Water Spring (MHWS). Mobile species that may interact with the relevant ZOI outside the designated site for which they are a qualifying feature will also be scoped into the nature conservation assessment where there is a potential for an impact pathway to exist.
- 14.4.4 It should be noted that the **Draft RIAA** (RED, 2021) details the Habitats Regulations Assessment (HRA) considerations in respect of Natura 2000 sites designated under the Habitats Directive and Birds Directive in a more detailed context, and includes consideration of sites further afield which have the potential

for connectivity related issues, particularly with regards to mobile species such as birds and marine mammals.

## Temporal scope

- 14.4.5 The temporal scope of the assessment of nature conservation is the entire lifetime of Rampion 2, which therefore covers the construction, operation and decommissioning periods.

## Potential receptors

- 14.4.6 The spatial and temporal scope of the assessment enables the identification of receptors which may experience a change as a result of Rampion 2. The receptors identified that may experience likely significant effects for nature conservation are outlined in **Table 14-6** and **Figure 14.2** to **Figure 14.6, Volume 3**.

**Table 14-6** Designated sites requiring assessment for nature conservation.

Designated Site	Proximity to the Rampion 2 PEIR Assessment Boundary
<b>International Designations</b>	
<b>Solent and Dorset Coast Special Protection Area (SPA)</b>	Approximately 1km from the PEIR Assessment Boundary and within the marine ornithology study area.
<b>Pagham Harbour SPA</b>	Approximately 10km from the PEIR Assessment Boundary. Site lies outside of the marine ornithology study area but has been scoped in due to supporting habitats within the benthic and intertidal survey area.
<b>Pagham Valley Ramsar</b>	Approximately 10km from the PEIR Assessment Boundary. Site lies outside of the marine ornithology study area but has been scoped in due to supporting habitats within the benthic and intertidal survey area.
<b>Dungeness, Romney Marsh and Rye Bay potential SPA</b>	Approximately 39km from the PEIR Assessment Boundary. Scoped in as potential for connectivity due to foraging sandwich tern.
<b>Southern North Sea Special Conservation Area (SAC)</b>	Approximately 131km from the PEIR Assessment Boundary. Scoped in based on known range of harbour porpoise.
<b>Marine Conservation Zones (MCZs)</b>	

<b>Designated Site</b>	<b>Proximity to the Rampion 2 PEIR Assessment Boundary</b>
<b>Kingmere MCZ</b>	Lies adjacent to the proposed Rampion 2 offshore export cable corridor
<b>Offshore Overfalls MCZ</b>	Lies adjacent to the Rampion 2 PEIR Assessment Boundary and within the benthic ecology ZOI.
<b>Pagham Harbour MCZ</b>	Approximately 10km from the Rampion 2 PEIR Assessment Boundary and within the benthic ecology ZOI.
<b>Selsey Bill and the Hounds MCZ</b>	10km west of the Rampion 2 offshore export cable corridor and falls within the benthic/ intertidal ecology ZOI.
<b>Utopia MCZ</b>	Approximately 13km from the Rampion 2 PEIR Assessment Boundary and falls within the benthic ecology ZOI. The site is designated for benthic ecology features of interest.
<b>Beachy Head West MCZ</b>	13km north-east of the Rampion 2 PEIR Assessment Boundary and within the benthic ecology ZOI .
<b>Bembridge MCZ</b>	20km west of the Rampion 2 PEIR Assessment Boundary (the MCZ is outside of the fish and shellfish study area however, there is potential for disturbance effects resulting from pile driving on short-snouted seahorses within and outside Bembridge MCZ; short snouted seahorse is the only qualifying feature with potential sensitivity to noise effects).
<b>Beachy Head East MCZ</b>	21km north-east of the Rampion 2 PEIR Assessment Boundary (the MCZ is outside of the fish and shellfish study area however, there is potential for disturbance effects resulting from pile driving on short-snouted seahorses within and outside Beachy Head East MCZ; short snouted seahorse is the only qualifying feature with potential sensitivity to noise effects).
<b>Sites of Special Scientific Interest (SSSI)</b>	

<b>Designated Site</b>	<b>Proximity to the Rampion 2 PEIR Assessment Boundary</b>
<b>Climping Beach</b>	Overlaps with offshore cable route boundary at the landfall location.
<b>Bognor Reef SSSI</b>	Approximately 6km from the Rampion 2 PEIR Assessment Boundary and falls within the benthic/intertidal ecology ZOI. The site is designated for intertidal ecology features of interest.
<b>Pagham Harbour SSSI</b>	Approximately 10km from the PEIR Assessment Boundary and falls within the benthic/intertidal ecology ZOI.
<b>Brighton to Newhaven Cliffs SSSI</b>	Approximately 13km from the Rampion 2 PEIR Assessment Boundary and falls within the benthic/intertidal ecology ZOI. The site is designated for intertidal ecology features of interest. The site does not fall within the offshore ornithology ZOI so these features will not be included within the assessment.
<b>Adur Estuary SSSI</b>	Approximately 16km from the Rampion 2 PEIR Assessment Boundary and falls within the benthic/intertidal ecology ZOI. The site is designated for intertidal ecology features of interest. The site does not fall within the offshore ornithology ZOI so these features are not included within the assessment.
<b>Local Designations</b>	
<b>West Beach LNR</b>	Overlaps with offshore cable route boundary at the landfall location.
<b>Pagham Harbour LNR</b>	Approximately 10km from the PEIR Assessment Boundary and within the benthic/intertidal ecology ZOI.
<b>Shelley Rocks LWS</b>	Approximately 1.5km from the PEIR Assessment Boundary and within the benthic/intertidal ecology ZOI.
<b>Waldrons Marine LWS</b>	Approximately 3km from the PEIR Assessment Boundary and within the benthic/intertidal ecology ZOI.

Designated Site	Proximity to the Rampion 2 PEIR Assessment Boundary
<b>Kingmere Rocks LWS</b>	Approximately 6km from the PEIR Assessment Boundary and within the benthic/intertidal ecology ZOI.
<b>Worthing Lumps LWS</b>	Approximately 7km from the PEIR Assessment Boundary and within the benthic/intertidal ecology ZOI.

- 14.4.7 The list of receptors will be kept under review during the EIA as more detailed information is obtained during baseline surveys and other forms of data collection by other aspects and will be reflected in the final ES.

## Potential effects

- 14.4.8 Potential effects on nature conservation receptors that have been scoped in for assessment are summarised in **Table 14-7**.

**Table 14-7** Potential effects on nature conservation receptors scoped in for further assessment

Designates Sites	Activity or impact	Potential effect
<b>Construction</b>		
Pagham Harbour SPA Kingmere MCZ Offshore Overfalls MCZ Selsey Bill and the Hounds MCZ Utopia MCZ Beachy Head West MCZ Pagham Harbour SSSI Shelley Rocks LWS Waldrons Marine LWS Kingmere Rocks LWS Worthing Lumps LWS	Temporary increase in suspended sediment and subsequent sediment deposition on subtidal designated features and species.	Potential for effect to arise due to smothering of protected habitats and species.
Solent and Dorset Coast SPA; Pagham Harbour SPA; Pagham Harbour Ramsar. <b>Climping Beach SSSI</b> <b>Bognor Reef SSSI</b> Pagham Harbour SSSI <b>Adur Estuary SSSI</b>	Temporary increase in suspended sediment and sediment deposition on intertidal designated habitat features.	Potential for effect to arise due to smothering of protected habitats.



Designates Sites	Activity or impact	Potential effect
<b>West Beach LNR</b> <b>Shoreham Beach LNR</b> <b>Pagham Harbour LNR</b>		
Kingmere MCZ Beachy Head West MCZ Beachy Head East MCZ Bembridge MCZ Selsey Bill and the Hounds MCZ Southern North Sea SAC Solent and Dorset Coast SPA Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI Aldrney West Coast and Burhou Islands Ramsar Dungeness, Romney Marsh and Rye Bay SPA / Ramsar	Impacts to mobile features of designated sites resulting from construction noise, direct disturbance from cable installation and increased suspended sediment (construction, operation and decommissioning phases).	Potential for effect to affect protected fish, marine mammals and marine ornithology due to disturbance or displacement. Effects on fish and shellfish receptors and marine mammals considers the following effects on individuals: <ul style="list-style-type: none"> <li>• mortality or mortal injury;</li> <li>• recoverable injury;</li> <li>• temporary threshold shift (TTS);</li> <li>• behavioural change and auditory masking.</li> </ul>
<b>Operation and maintenance</b>		
Pagham Harbour SPA Kingmere MCZ Offshore Overfalls MCZ Selsey Bill and the Hounds MCZ Utopia MCZ Beachy Head West MCZ Pagham Harbour SSSI	Long term effects to physical processes including sediment transport pathways and resultant changes to seabed composition from infrastructure	Potential for long term effects on designated habitats due to changes in sediment composition or sediment transport pathways.
Kingmere MCZ Beachy Head West MCZ Beachy Head East MCZ Selsey Bill and the Hounds MCZ Southern North Sea SAC Solent and Dorset Coast SPA Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI	Impacts to mobile features of designated sites as a result of loss or change in habitat, EMF emissions, operation and maintenance activities, vessel disturbance or collision, changes to prey availability or collision risk (ornithological receptors only) (construction, operation and decommissioning phases)	Potential for effects to affect protected fish, marine mammals and marine ornithology due to disturbance or displacement.

Designates Sites	Activity or impact	Potential effect
<p>Alderney West Coast and Burhou Islands Ramsar Dungeness, Romney Marsh and Rye Bay SPA / Ramsar</p> <p><b>Decommissioning</b></p>		
<p>Pagham Harbour SPA Kingmere MCZ Offshore Overfalls MCZ Selsey Bill and the Hounds MCZ Utopia MCZ Beachy Head West MCZ Pagham Harbour MCZ Shelley Rocks LWS Waldrons Marine LWS Kingmere Rocks LWS Worthing Lumps LWS</p>	<p>Temporary increase in suspended sediment and subsequent sediment deposition on subtidal designated features and species</p>	<p>Potential for effects to arise due to smothering of protected habitats and species.</p>
<p>Solent and Dorset Coast SPA; Pagham Harbour SPA; Pagham Harbour Ramsar. Climping Beach SSSI Bognor Reef SSSI Pagham Harbour SSSI Adur Estuary SSSI West Beach LNR Shoreham Beach LNR Pagham Harbour LNR</p>	<p>Temporary increase in suspended sediment and sediment deposition on intertidal designated habitat features</p>	<p>Potential for effects to arise due to smothering of protected habitats.</p>
<p>Kingmere MCZ Beachy Head West MCZ Beachy Head East MCZ Selsey Bill and the Hounds MCZ Southern North Sea SAC Solent and Dorset Coast SPA Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI Alderney West Coast and Burhou Islands Ramsar</p>	<p>Impacts to mobile features of designated sites resulting from construction noise, direct disturbance from cable installation and increased suspended sediment (construction, operation and decommissioning phases)</p>	<p>Potential for effects to affect protected fish, marine mammals and marine ornithology due to disturbance or displacement. Effects on fish and shellfish receptors and marine mammals considers the following effects on individuals:</p> <ul style="list-style-type: none"> <li>• mortality or mortal injury;</li> <li>• recoverable injury;</li> <li>• temporary threshold shift (TTS);</li> </ul>

Designates Sites	Activity or impact	Potential effect
Dungeness, Romney Marsh and Rye Bay SPA / Ramsar		<ul style="list-style-type: none"> <li>behavioural change and auditory masking.</li> </ul>

## Activities or impacts scoped out of assessment

- 14.4.9 A number of potential effects have been scoped out from further assessment, resulting from a conclusion of no likely significant effect. These conclusions have been made based on the knowledge of the baseline environment, the nature of planned works and the wealth of evidence on the potential for impact from such projects more widely. The conclusions follow (in a site-based context) existing best practice. Each scoped out activity or impact is considered in turn below and an indication given of whether the scope has evolved since Scoping.

Table 14-8 Activities or impacts scoped out of assessment

Activity or impact	Rationale for scoping out	Designated sites considered
<b>Direct habitat disturbance to other designated sites (construction, maintenance and decommissioning phase)</b>	For direct impacts to occur there would need to be a physical overlap of the project and the designated site. As shown in <b>Figure 14.2, Volume 3</b> , the offshore PEIR Assessment Boundary only overlaps with the Climping Beach SSSI and West Beach Local Nature Reserve. However, the Proposed Development will not have a direct impact on the Climping Beach SSSI and West Beach LNR as HDD will be used, the entry and exit pits will be located outside of both designations and the HDD bore will not pass under either designations.	Solent and Dorset Coast SPA Pagham Harbour SPA Kingmere MCZ Offshore Overfalls MCZ Pagham Harbour MCZ Beachy Head West MCZ Beachy Head East MCZ Bembridge MCZ Selsey Bill and the Hounds MCZ Climping Beach SSSI West Beach LNR Shelley Rocks LWS Waldrons Marine LWS Worthing Lumps LWS Kingmere Rocks LWS

- 14.4.10 In addition to the specific activities or impacts detailed above the following designated sites were also considered and scoped out on the basis that they were outside the ZOI with respect to the qualifying feature of the site and no impact pathways were identified:

- South Wight Maritime SAC;
- Solent Maritime SAC;
- Solent and Isle of Wight lagoons SAC;
- Chichester and Langstone Harbours SPA;
- Solent and Southampton Water SPA; and
- Portsmouth Harbour SPA.

## 14.5 Methodology for baseline data gathering

### Overview

- 14.5.1 Baseline data collection has been undertaken to obtain information over the study areas described in **Section 14.4**. The current baseline conditions presented in **Section 14.5** sets out data currently available information from the study area/s.

### Desk study

- 14.5.2 The data sources that have been collected and used to inform this nature conservation assessment are summarised in **Table 14-9**. Data sources have relied on the relevant citation lists and data sheets for the associated designated site.

Table 14-9 Data sources used to inform the nature conservation PEIR assessment

Document Title	Link	Accessed on	Coverage of study area
<b>Natura 2000 Standard Data Form</b>	<a href="https://jncc.gov.uk/jnc-c-assets/SPA-N2K/UK9020330.pdf">https://jncc.gov.uk/jnc-c-assets/SPA-N2K/UK9020330.pdf</a>	23 March 2021	Solent and Dorset Coast SPA
<b>Natura 2000 Standard Data Form</b>	<a href="http://publications.naturalengland.org.uk/publication/3143422">http://publications.naturalengland.org.uk/publication/3143422</a>	23 March 2021	Pagham Harbour SPA
<b>MCZ Factsheet</b>	<a href="http://publications.naturalengland.org.uk/publication/5715535983542272?category=1721481">http://publications.naturalengland.org.uk/publication/5715535983542272?category=1721481</a>	23 March 2021	Kingmere MCZ
<b>JNCC Offshore Overfalls MPA Site summary</b>	<a href="https://jncc.gov.uk/our-work/offshore-overfalls-mpa/#evidence">https://jncc.gov.uk/our-work/offshore-overfalls-mpa/#evidence</a>	23 March 2021	Offshore Overfalls MPA

Document Title	Link	Accessed on	Coverage of study area
<b>MCZ Factsheet</b>	<a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492467/mcz-utopia-factsheet.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492467/mcz-utopia-factsheet.pdf</a>	23 March 2021	Utopia MCZ
<b>MCZ Factsheet</b>	<a href="http://publications.naturalengland.org.uk/publication/4680895541805056">http://publications.naturalengland.org.uk/publication/4680895541805056</a>	23 March 2021	Pagham Harbour MCZ
<b>MCZ Factsheet</b>	<a href="http://publications.naturalengland.org.uk/publication/5988214867230720">http://publications.naturalengland.org.uk/publication/5988214867230720</a>	23 March 2021	Beachy Head West MCZ
<b>MCZ Factsheet</b>	<a href="https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UKMCZ0002&amp;SiteName=hea&amp;countyCode=&amp;responsiblePerson=&amp;HasCA=1&amp;NumMarineSeasonality=0&amp;SiteNameDisplay=Beachy%20Head%20West%20MCZ">https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UKMCZ0002&amp;SiteName=hea&amp;countyCode=&amp;responsiblePerson=&amp;HasCA=1&amp;NumMarineSeasonality=0&amp;SiteNameDisplay=Beachy%20Head%20West%20MCZ</a>	23 March 2021	Beachy Head East MCZ
<b>MCZ Factsheet</b>	<a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/915592/mcz-bembridge-2019.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/915592/mcz-bembridge-2019.pdf</a>	23 March 2021	Bembridge MCZ
<b>MCZ Factsheet</b>	<a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/915676/mcz-selsey-bill-2019.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/915676/mcz-selsey-bill-2019.pdf</a>	23 March 2021	Selsey Bill and the Hounds MCZ

Document Title	Link	Accessed on	Coverage of study area
<a href="https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003033.pdf">https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003033.pdf</a>	<a href="https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003033.pdf">https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003033.pdf</a>	23 March 2021	Brighton to Newhaven Cliffs SSSI
<b>Marine Conservation Society (1984) Sussex Sublittoral Survey</b>	<a href="http://www.seasearch.org.uk/downloads/Sussex%20Sublittoral%201984.pdf">http://www.seasearch.org.uk/downloads/Sussex%20Sublittoral%201984.pdf</a>	21 May 2021	Shelley Rocks LWS
<b>Waldrons Sandstone Reef information site</b>	<a href="https://www.chelifer.com/?page_id=2592">https://www.chelifer.com/?page_id=2592</a>	26 April 21	Waldrons Reef LWS
<b>Sussex Marine Sites of Nature Conservation Data Sheets</b>	<a href="http://www.chelifer.com/wp-content/uploads/2013/06/Kingmere-Rocks.pdf">http://www.chelifer.com/wp-content/uploads/2013/06/Kingmere-Rocks.pdf</a>	21 May 2021	Kingmere Rocks LWS
<b>Sussex Marine Sites of Nature Conservation Importance data sheet</b>	<a href="https://www.sxbrcmapping.org.uk/ifca/mSNCICitation.php?SiteRef=9">https://www.sxbrcmapping.org.uk/ifca/mSNCICitation.php?SiteRef=9</a>	26 April 2021	Worthing Lumps LWS

## Data limitations

- 14.5.3 The consideration of nature conservation draws on the baseline and assessment information presented within **Chapter 6: Coastal processes, Chapter 8: Fish and shellfish ecology, Chapter 9: Benthic, subtidal and intertidal ecology, Chapter 11: Marine mammals and Chapter 12: Offshore ornithology** and is therefore subject to the data limitations and any associated uncertainties described therein. However, the information derived and presented in this chapter is considered to be appropriate and sufficiently robust for the assessment of potential impacts to nature conservation receptors for the Proposed Development.



## 14.6 Baseline conditions

### Current baseline

#### Overview

- 14.6.1 There are several international, national and local designations (statutory and non-statutory) of relevance to Rampion 2 offshore, along the coastline and onshore. This section provides an overview of the designated sites relevant to the intertidal and offshore works.

#### European sites

##### Overview

- 14.6.2 The paragraphs that follow provide an overview of Natura 2000 sites designated under the Habitats Directive and Birds Directive. An HRA has been undertaken and is detailed within the **Draft RIAA** (RED, 2020).

##### *Special Areas of Conservation (SACs)*

- 14.6.3 SACs are sites designated under the Habitats Directive, because they make a significant contribution to conserving the habitat types and species identified in Annexes I and II of the Directive. The closest SACs of relevance to the Proposed Development are presented in **Figure 14.2, Volume 3**. As the figure shows, the SACs lie outside the ZOI for benthic subtidal and intertidal ecology, for which the sites are designated. Therefore, no impact to the sites is anticipated and no SACs will be included within the assessment.

##### *Special Protection Areas (SPAs)*

- 14.6.4 SPAs are designated under the European Union Directive on the Conservation of Wild Birds. Under the Directive, Member States of the European Union (EU) have a duty to safeguard the habitats of migratory birds and certain particularly threatened bird species. SPAs of relevance to the Proposed Development are detailed in **Figure 14.2, Volume 3**.

#### Ramsar sites

- 14.6.5 Ramsar sites are wetlands of international importance that have been designated by the UK Government under the International Ramsar Convention (the Convention on Wetlands of International Importance), for containing representative, rare or unique wetland types or for their importance in conserving biological diversity. Ramsar sites that fall within the offshore ornithology ZOI include Pagham Harbour.

Table 14-10: International designations qualifying features and site details

Designated Site	Qualifying features	Distance to PEIR Assessment Boundary (km)
<b>Solent and Dorset Coast SPA</b>	The site has been designated to protect internationally important breeding populations of common tern, Sandwich tern and little tern.	1
<b>Pagham Harbour SPA</b>	<p>This site is designated as the estuarine basin is made up of an extensive central area of saltmarsh and intertidal mudflats, surrounded by lagoons, shingle, open water, reed swamp and wet permanent grassland. The mudflats are rich in invertebrates and algae and provide important feeding areas for the many bird species that use the site.</p> <p>The site is also designated for the following Annex I bird species:</p> <ul style="list-style-type: none"> <li>• Dark-bellied brent goose (Non-breeding)</li> <li>• Ruff (Non-breeding)</li> <li>• Common tern (Breeding)</li> <li>• Little tern (Breeding)</li> </ul>	10
<b>Pagham Valley Ramsar</b>	An estuarine harbour with shingle beaches, intertidal mudflats and saltmarsh, giving way to brackish marsh supporting reedbeds and damp pasture. The site includes a nationally important vegetation community and small amounts of ancient woodland.	10
<b>Dungeness, Romney Marsh and Rye Bay potential SPA</b>	<p>The SPA comprises a barrier of extensive coastal shingle beaches and sand dunes across an area of intertidal mud and sand flats. The site includes the largest and most diverse area of shingle beach in Britain, with low-lying hollows in the shingle providing nationally important saline lagoons, natural freshwater pits and basin fens.</p> <p>The site is also designated for the following Annex I bird species:</p> <ul style="list-style-type: none"> <li>• Aquatic warbler, Non-breeding</li> <li>• Avocet, Breeding</li> <li>• Bewick's swan, Non-breeding</li> <li>• Bittern, Non-breeding</li> <li>• Common tern, Breeding</li> <li>• Golden plover, Non-breeding</li> <li>• Hen harrier, Non-breeding</li> <li>• Little tern, Breeding</li> </ul>	39

Designated Site	Qualifying features	Distance to PEIR Assessment Boundary (km)
	<ul style="list-style-type: none"> <li>• Marsh harrier, Breeding</li> <li>• Mediterranean gull, Breeding</li> <li>• Ruff, Non-breeding</li> <li>• Sandwich tern, Breeding</li> <li>• Shoveler, Non-breeding</li> <li>• Waterbird assemblage, Non-breeding</li> </ul>	
<b>Southern North Sea SAC</b>	The Southern North Sea SAC is designated as an area of particular importance for harbour porpoise. This site includes key winter and summer habitat for this species and covers an area of 36,950.54km <sup>2</sup> .	131

## Statutory National Designations

- 14.6.6 At a national level and within the vicinity of the Proposed Development, there are three types of designated site for nature conservation; these being Marine Conservation Zones (MCZ), Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR).
- 14.6.7 The Marine and Coastal Access Act 2009 provided for the identification and designation of a type of Marine Protected Area (MPA) called an MCZ, which are of sites of national importance. MCZs are intended to protect areas that are important to conserve the diversity of rare and threatened marine habitats, species, geology and geomorphology in UK waters, as well as a proportion of representative examples of these. Together with other types of MPAs, these support the delivery of the Government's objective for an ecologically coherent network of MPAs. Features proposed to be designated for protection by MCZs comprise 'broad-scale habitats', and 'Features of Conservation Importance (FOCI).
- 14.6.8 A SSSI is the land notified as an SSSI under the Wildlife and Countryside Act (1981), as amended. SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.
- 14.6.9 Local Nature Reserves (LNRs) are sites designated by the local district or county councils. LNRs are sites that have of local importance for wildlife, geology, education or public enjoyment. LNRs are controlled by the local authority through ownership, lease or agreement with the owner.
- 14.6.10 **Table 14-11** presents details of the relevant national designations and the relevant qualifying or notifying features considered within the preliminary assessment. **Figure 14.3, Volume 3** and **Figure 14.4, Volume 3** presents the location of relevant designated sites in the vicinity of the PEIR Assessment Boundary.

## Non-statutory designations

- 14.6.11 Local Wildlife Sites are non-statutory local designations which support 'substantive nature conservation value'. They are defined areas, identified and selected for their nature conservation value, based on important, distinctive and threatened habitats and species with a national, region. Local wildlife sites are often designated through local authority lead partnerships.

Table 14-11 National and local designations and associated qualifying features considered within the preliminary assessment

Designated Site	Receptors included within group	Distance to PEIR Assessment Boundary (km)
<b>Kingmere MCZ</b>	<p>The site is designated for several marine habitats including:</p> <ul style="list-style-type: none"> <li>• subtidal coarse sediment,</li> <li>• subtidal mixed sediments,</li> <li>• subtidal sand and English Channel outburst flood features.</li> </ul> <p>Black bream (<i>Acanthopagrus butcheri</i>) are a protected feature of this MCZ.</p>	Adjacent to PEIR Assessment Boundary
<b>Offshore Overfalls MCZ</b>	<p>The site is designated for several marine habitats including:</p> <ul style="list-style-type: none"> <li>• subtidal coarse sediment,</li> <li>• subtidal mixed sediments,</li> <li>• subtidal sand; and</li> <li>• the English Channel outburst flood features (Quaternary fluvio-glacial erosion features).</li> </ul>	Adjacent to PEIR Assessment Boundary
<b>Pagham Harbour MCZ</b>	<p>The site is a naturally occurring harbour is a tidal inlet which is fronted by two dynamic shingle spits. This site is designated for several marine features including:</p> <ul style="list-style-type: none"> <li>• Seagrass beds,</li> <li>• defolin's lagoon snail (<i>Caecum armoricum</i>), and</li> <li>• the Lagoon sand shrimp (<i>Gammarus insensibilis</i>).</li> </ul>	10
<b>Selsey Bill and the Hounds MCZ</b>	<p>The site is designated for the following FOCl:</p> <ul style="list-style-type: none"> <li>• Bracklesham Bay geological feature</li> <li>• Short-snouted seahorse (<i>Hippocampus hippocampus</i>)</li> <li>• Subtidal mixed sediments</li> <li>• Subtidal sand</li> <li>• High energy infralittoral rock Recover to a favourable condition</li> </ul>	10

Designated Site	Receptors included within group	Distance to PEIR Assessment Boundary (km)
	<ul style="list-style-type: none"> <li>• Low energy infralittoral rock</li> <li>• Moderate energy infralittoral rock</li> <li>• Moderate energy circalittoral rock</li> <li>• Peat and clay exposures</li> </ul>	
<b>Utopia MCZ</b>	<p>The protected features of this site include:</p> <ul style="list-style-type: none"> <li>• circalittoral rock,</li> <li>• subtidal coarse and mixed sediment,</li> <li>• subtidal sands and</li> <li>• fragile sponge and anthozoan communities on subtidal rocky habitats.</li> </ul>	13
<b>Beachy Head West MCZ</b>	<p>The site is designated for the following FOCI:</p> <ul style="list-style-type: none"> <li>• Subtidal mixed sediments;</li> <li>• Subtidal mud;</li> <li>• Subtidal sand;</li> <li>• Infralittoral muddy sand;</li> <li>• Infralittoral sandy mud;</li> <li>• Low energy infralittoral rock and thin sandy sediment;</li> <li>• Blue mussel (<i>Mytilus edulis</i>) beds;</li> <li>• Subtidal chalk;</li> <li>• Littoral chalk communities;</li> <li>• Native oyster (<i>Ostrea edulis</i>);</li> <li>• Short-snouted seahorse (<i>Hippocampus hippocampus</i>);</li> <li>• Moderate energy circalittoral rock;</li> <li>• High energy circalittoral rock;</li> <li>• European native oyster and blue mussel beds.</li> </ul>	13
<b>Bembridge MCZ</b>	<p>The protected features of this site include:</p> <ul style="list-style-type: none"> <li>• Short-snouted seahorse,</li> <li>• European native oyster and</li> <li>• Stalked jellyfish (<i>Calvadosia campanulate</i>, <i>Haliclystus</i> species).</li> </ul>	20
<b>Beachy Head East MCZ</b>	<p>The site is designated for the following FOCI:</p> <ul style="list-style-type: none"> <li>• Short-snouted seahorse;</li> <li>• Littoral chalk communities Maintain in favourable condition;</li> <li>• Subtidal coarse sediment;</li> <li>• Subtidal sand;</li> </ul>	2;1

Designated Site	Receptors included within group	Distance to PEIR Assessment Boundary (km)
	<ul style="list-style-type: none"> <li>• High energy circalittoral rock Recover to favourable condition;</li> <li>• Moderate energy circalittoral rock;</li> <li>• Peat and clay exposures;</li> <li>• Ross worm reefs (<i>Saballaria spinulosa</i>);</li> <li>• Subtidal chalk</li> </ul>	
<b>Climping Beach SSSI</b>	<p>This site is designated for the following relevant features:</p> <ul style="list-style-type: none"> <li>• Aggregations of non-breeding birds including sanderling; and,</li> <li>• <i>Calidris alba</i> as well as coastal vegetated shingle,</li> <li>• Fixed dune grassland and sand dune communities.</li> </ul>	Overlaps with offshore cable route boundary at the landfall location.
<b>Bognor Reef SSSI</b>	<p>This site comprises a long stretch of foreshore of great geological interest and an extensive area of vegetated shingle, a habitat type which is rare in Britain. At the western end is a small area of old sand dune with an interesting flora including a specially protected species listed on Schedule 8 of the Wildlife and Countryside Act 1981.</p> <p>Relevant offshore designated features include:</p> <ul style="list-style-type: none"> <li>• <i>Rumex crispus</i> - <i>Glaucium flavum</i> shingle community.</li> </ul>	6
<b>Pagham Harbour SSSI</b>	<p>This site comprises the following qualifying features:</p> <ul style="list-style-type: none"> <li>• extensive central area of salt-marsh and tidal mudflats with surrounding habitats including shingle, open water, reed swamp and wet permanent grassland;</li> <li>• Nationally important wintering wildfowl and waders;</li> <li>• Breeding birds both within the Harbour and the surrounding grazing pasture;</li> <li>• Nationally important communities of plants and invertebrates.</li> </ul> <p>The site is within the Pagham Harbour SPA and Ramsar site.</p>	10



Designated Site	Receptors included within group	Distance to PEIR Assessment Boundary (km)
<b>Brighton to Newhaven Cliffs SSSI</b>	<p>This coastal site comprises the length of chalk cliff stretching from Black Rock, Brighton in the west to Castle Hill, Newhaven in the east and includes the wave cut platform at the cliff base. The main interest of the site is geological although the site supports some rare and uncommon plants, a diverse community of beetles.</p> <p>Of relevance to Rampion 2 the site also supports the following feature:</p> <ul style="list-style-type: none"> <li>a breeding colony of kittiwake (<i>Rissa tridactyla</i>).</li> </ul>	13
<b>Adur Estuary SSSI</b>	<p>This site is designated for offshore features including:</p> <ul style="list-style-type: none"> <li>Aggregations of non-breeding birds –</li> <li>Ringed Plover (<i>Charadrius hiaticula</i>),</li> <li>Sheltered muddy shores (including estuarine muds),</li> <li><i>Puccinellia maritima</i> saltmarsh, <i>Limonium vulgare</i> - <i>Armeria maritima</i> sub-community and <i>Atriplex portulacoides</i> saltmarsh.</li> </ul>	16
<b>West Beach LNR</b>	<p>Qualifying features of the LNR include:</p> <ul style="list-style-type: none"> <li>sand dunes;</li> <li>vegetated shingle;</li> <li>sand flats;</li> <li>a small patch of saltmarsh.</li> <li>Sand lizards (<i>Lacerta agilis</i>), protected under the Wildlife and Countryside Act 1984, and four nationally scarce burrowing bees and wasps occur in the dunes.</li> </ul> <p>The West Beach LNR is part of the Climping Beach SSSI.</p>	Overlaps with offshore cable route boundary at the landfall location.
<b>Shoreham Beach LNR</b>	<p>The qualifying feature of this site is:</p> <ul style="list-style-type: none"> <li>Vegetated shingle beach and associated specialised shingle flora.</li> </ul>	14
<b>Pagham Harbour LNR</b>	<p>The qualifying feature of this site is:</p> <ul style="list-style-type: none"> <li>Wetland habitats within a sheltered inlet that support important bird aggregations.</li> </ul>	10
<b>Shelley Rocks LWS</b>	<p>This site is designated for the following features:</p> <ul style="list-style-type: none"> <li>Cobble and pebble habitat interspersed with gravel, sand and shell deposits.</li> </ul>	1.5

Designated Site	Receptors included within group	Distance to PEIR Assessment Boundary (km)
	<ul style="list-style-type: none"> <li>Moderate cover of algae including <i>Chila filum</i> and foliaceous red, green and brown algae.</li> <li>Some areas of kelp (<i>Laminarium digitatum</i>) has been observed on areas of outcropping bedrock. .</li> </ul>	
<b>Waldrons Reef LWS</b>	<p>This site is designated for the following features:</p> <ul style="list-style-type: none"> <li>Outcrops of sandstone bedrock form low reefs with a surrounding seabed of sandstone boulders, cobbles, pebbles, gravel and sand.</li> <li>Communities comprising red foliose algae and kelp with a faunal community dominated by sponge, bryozoans, hydroids and tube worms.</li> </ul>	3
<b>Worthing Lumps LWS</b>	<p>This site is designated for the following features:</p> <ul style="list-style-type: none"> <li>Sublittoral chalk exposure with piddocks supporting a community of red foliaceous algae, hydroids and bryozoa.</li> </ul>	7
<b>Kingmere Rocks LWS</b>	<p>This site is designated for the following features:</p> <ul style="list-style-type: none"> <li>Areas of outcropping rock interspersed with mixed sediment.</li> </ul> <p>The LWS is designated for a similar habitat features as the wider Kingmere MCZ above.</p>	7

## UK Biodiversity Action Plan (BAP)

- 14.6.12 The Convention of Biological Diversity was signed in Rio de Janeiro in 1992 (and hence is also referred to as the Rio Convention) and entered into force in 1993. It was the first treaty to provide a legal framework for biodiversity conservation and included calls for national strategies and action plans to 'conserve, protect and enhance biological diversity'. The UK response was the Biodiversity Action Plan (BAP), launched in 1994. The UK plan includes the identification of several habitats and species, together with a series of local action plans.
- 14.6.13 UK BAP priority habitats that occur within the benthic subtidal ecology nature conservation study area include:
- Coastal saltmarsh;
  - Coastal vegetated shingle;
  - Fragile sponge and anthozoan communities on subtidal rocky habitats;

- Intertidal chalk and subtidal chalk;
- Intertidal mudflats;
- Peat and clay exposures with piddocks;
- *Sabellaria spinulosa* reefs;
- Seagrass beds; and
- Subtidal sands and gravels.

- 14.6.14 These features are qualifying or notified features of the various designations listed above.
- 14.6.15 Features that have been positively identified in the existing Rampion 1 characterisation study (EMU, 2011) and have been identified through the predictive habitat mapping include the biotopes 'Sabellaria spinulosa with kelp and red seaweeds on sand-influenced infralittoral rock (A3.215)' and 'Piddocks with a sparse associated fauna in sublittoral very soft chalk or clay (A4.231)' (See **Chapter 9: Benthic and subtidal ecology** for more detail). Both bedrock and chalk reef habitat were identified as being the most threatened and requiring conservation action under the UK BAP, as required under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

## Future baseline

- 14.6.16 The consideration of the future baseline draws on the future baseline and assessment information presented within **Chapter 6: Coastal processes**, **Chapter 8: Fish and shellfish ecology**, **Chapter 9: Benthic, subtidal and intertidal ecology**, **Chapter 11: Marine mammals** and **Chapter 12: Offshore ornithology** and is therefore subject to the evolving baseline descriptions presented therein. Reference should be made to the relevant technical chapter to understand the likely future baseline condition.

## 14.7 Basis for PEIR assessment

### Maximum design scenario

- 14.7.1 Assessing using a parameter-based design envelope approach means that the assessment considers a maximum design scenario whilst allowing the flexibility to make improvements in the future in ways that cannot be predicted at the time of submission of the DCO Application. The assessment of the maximum adverse scenario for each receptor establishes the maximum potential adverse impact and as a result impacts of greater adverse significance will not arise should any other development scenario (as described in **Chapter 4: The Proposed Development**) to that assessed within this Chapter be taken forward in the final scheme design.
- 14.7.2 The maximum adverse scenarios assessed during construction, operation and maintenance and decommissioning for the relevant receptors considered as part of the nature conservation preliminary assessment are described within the respective technical chapters described in **Section 14.1**.

## Embedded environmental measures

- 14.7.3 As part of the Rampion 2 design process, a number of embedded environmental measures have been adopted to reduce the potential for impacts on nature conservation. These embedded environmental measures will evolve over the development process as the EIA progresses and in response to consultation. They will be fed iteratively into the assessment process.
- 14.7.4 These measures typically include those that have been identified as good or standard practice and include actions that will be undertaken to meet existing legislation requirements. As there is a commitment to implementing these embedded environmental measures, and also to various standard sectoral practices and procedures, they are considered inherently part of the design of Rampion 2 and are set out in this PEIR.
- 14.7.5 **Table 14-12** sets out the relevant embedded environmental measures within the design and how these affect the nature conservation assessment.

Table 14-12 Relevant nature conservation embedded environmental measures

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to assessment
<b>C-41</b>	The subsea interarray cables will typically be buried at a target burial depth of 1m below the seabed surface. The final depth of the cables will be dependent on the seabed geological conditions and the risks to the cable (e.g. from anchor drag damage).	Scoping	DCO requirements or dML conditions.	This measure will reduce the risk of EMF impacts on sensitive receptors.
<b>C-43</b>	The subsea export cable ducts will be drilled underneath the beach using horizontal directional drilling (HDD) techniques.	Scoping	DCO requirements or dML conditions.	This measure will avoid direct impacts to intertidal designated sites associated with the offshore export cable corridor.
<b>C-44</b>	An Outline Scour Protection Management Plan will be developed. It will include details of the need, type, quantity and	Scoping	DCO requirements or dML conditions.	This measure will minimise where possible long-term habitat loss.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to assessment
	installation methods for scour protection.			
<b>C-45</b>	Where possible, subsea cable burial will be the preferred option for cable protection. Cable burial will be informed by the cable burial risk assessment and detailed within the Cable Specification Plan.	Scoping	DCO requirements or dML conditions.	This measure will reduce the risk of EMF impacts on sensitive receptors.
<b>C-48</b>	Monitoring of vessel traffic will be undertaken for the duration of the construction period.	Scoping	DCO requirements or dML conditions.	This measure will minimise the risk of vessel collisions
<b>C-51</b>	A Vessel Management Plan (VMP) will be developed pre-construction.	Scoping	DCO requirements or DML conditions.	This measure will minimise the risk of vessel collisions with marine mammals.
<b>C-52</b>	A piling Marine Mammal Mitigation Protocol (MMMP) will be implemented during construction and will be developed in accordance with JNCC (2010) guidance and with the latest relevant guidance and information and in consultation with stakeholders. The piling MMMP will include details of soft starts to be used during piling operations with lower hammer energies used at the beginning of the piling sequence before increasing energies to the higher levels.	Scoping - updated at PEIR	DCO requirements or dML conditions.	This measure will be of benefit to sensitive receptors in relation to soft start piling.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to assessment
<b>C-53</b>	An Outline Marine Pollution Contingency Plan (MPCP) will be developed. This MPCP will outline procedures to protect personnel working and to safeguard the marine environment and mitigation measures in the event of an accidental pollution event arising from offshore operations relating to Rampion 2. The MPCP will also include relevant key emergency contact details.	Scoping	DCO requirements or dML conditions.	This measure will minimise the risk of accidental pollution associated with the Proposed Development on sensitive receptors.
<b>C-54</b>	A Decommissioning Marine Mammal Mitigation Protocol (MMMP) will be implemented during decommissioning. The Decommissioning MMMP will be in line with the latest relevant available guidance.	Scoping	DCO requirements or dML conditions.	This measure will use best-practice environmental measures as understood at the time of decommissioning to mitigate the potential for Permanent Threshold Shift (PTS).
<b>C-65</b>	The proposed offshore cable corridor and cable landfall (below mean high water springs [MHWS]) will avoid all statutory marine designated areas.	Scoping	DCO requirements or dML conditions.	This measure will reduce the risk of disturbance on sensitive receptors within statutory marine designated areas.
<b>C-95</b>	The assessment will take into consideration the mitigation and control of invasive species measures that will be incorporated into an	Scoping	DCO requirements or dML conditions.	This measure will reduce where possible the risk of introducing invasive species into the region.



ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to assessment
	Outline Project Environmental Monitoring and Management Plan (PEMMP).			
<b>C-96</b>	Subsea array and export cables will be installed via either ploughing, jetting, trenching, or post-lay burial techniques, to a target burial depth of 1m.	Scoping	DCO requirements or dML conditions.	This measure will reduce the introduction of hard substrate and the risk of EMF impacts on sensitive receptors.
<b>C-102</b>	A UXO Marine Mammal Mitigation Protocol (MMMP) will be developed in consultation with Natural England to appropriately manage the risk to marine mammals during UXO clearance.	Scoping	DCO requirements or dML conditions.	This measure will mitigate impacts from UXO, including consideration of alternative clearance techniques and displacement methods.
<b>C-111</b>	A decommissioning plan will be prepared for the project in line with the latest relevant available guidance.	PEIR	Outline COCP and DCO requirement	This measure will be developed to cover the decommissioning phase and will minimise impact on receptors, where appropriate.

## 14.8 Methodology for PEIR assessment

### Introduction

- 14.8.1 The project-wide generic approach to assessment is set out in **Chapter 5: Approach to the EIA**. The assessment methodology for nature conservation for the PEIR is consistent with that provided in the Scoping Report (RED, 2020) and no changes have been made since the scoping phase.

## Impact Assessment Criteria

- 14.8.2 The criteria for determining the significance of effects is a two-stage process that involves defining the sensitivity of the receptors and the magnitude of the impacts. This section describes the criteria applied in this chapter to assign values to the sensitivity of receptors and the magnitude of potential impacts. The methodology for assessing the potential significance of effect (including definitions of sensitivity and magnitude) is specific to each technical topic and is defined within each relevant technical chapter, as follows:
- **Chapter 6: Coastal processes;**
  - **Chapter 8: Fish and shellfish ecology;**
  - **Chapter 9: Benthic subtidal and intertidal ecology;**
  - **Chapter 11: Marine mammals;** and,
  - **Chapter 12: Offshore ornithology.**
- 14.8.3 The preliminary assessment has been prepared based on the embedded environmental measures identified within each of the above chapters being implemented, where relevant and as set out in **Table 14-12**. The assessment also includes the consideration of potential significant cumulative effects as identified within the relevant technical assessments.
- 14.8.4 The significance of effect upon nature conservation is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is presented in **Table 14-13**, with the final assessment for each effect based upon expert judgement. For the purposes of this assessment, any effects with a significance level of minor or less have been concluded to be not significant in terms of the EIA Regulations.

**Table 14-13 Matrix used for the assessment of the significance of residual effect.**

		Magnitude of Change			
		Major	Moderate	Minor	Negligible
Sensitivity/importance/value	Very High	Major (Significant)	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)
	High	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)	Minor (Not significant)
	Medium	Moderate (Potentially significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)

## 14.9 Preliminary assessment: Construction phase

### Temporary increase in suspended sediment and sediment deposition on subtidal designated features

#### Overview

- 14.9.1 The sites and habitats most sensitive to increased SSC and sediment deposition are the static features of the following designated sites:
- Kingmere MCZ (moderate energy infralittoral rock and thin mixed sediments, subtidal chalk; black bream);
  - Offshore Overfalls MCZ (subtidal coarse sediment, subtidal mixed sediments, subtidal sand and English Channel outburst flood features);
  - Pagham Harbour MCZ (Seagrass beds, Defolin's lagoon snail (*C. armoricum*) and the lagoon sand shrimp (*G. insensibilis*);
  - Selsey Bill and the Hounds MCZ (Subtidal mixed sediments; Subtidal sand; High energy infralittoral rock; Low energy infralittoral rock; Moderate energy infralittoral rock; Moderate energy circalittoral rock; Peat and clay exposures);
  - Utopia MCZ (circalittoral rock, subtidal coarse and mixed sediment, subtidal sands and fragile sponge and anthozoan communities on subtidal rocky habitats);
  - Beachy Head West MCZ (intertidal coarse sediments, subtidal mixed, mud and sand, infralittoral muds and sands, infralittoral and circalittoral rock, chalk and their associated communities, native oyster (*O. edulis*);
  - Shelley Rocks LWS (predominately cobble and pebble substrate interspersed with mixed sediment and areas of protruding bedrock covered with foliaceous red, green and brown algae and areas of *L. digitatum*);
  - Waldrons Reef LWS (bedrock with boulders, gravel and sands with red algae and kelp communities);
  - Worthing Lumps LWS (Sublittoral chalk exposure with piddocks); and
  - Kingmere Rocks LWS (same as Kingmere MCZ).
- 14.9.2 **Chapter 6: Coastal processes** identifies that sediment plumes associated with construction activities will have a maximum plume dispersion of 16km and 8km on spring and neap tides respectively. Sediment plumes are expected to quickly dissipate after cessation of the activities, due to settling and wider dispersion with the concentrations reducing quickly over time to background levels. Sediment deposition will consist primarily of coarser sediments deposited close to the source, with a small proportion of silt deposition (reducing exponentially from source).

- 14.9.3 **Chapter 9: Benthic subtidal and intertidal ecology** presents a detailed discussion of the sensitivity of species and receptors associated with the various designated sites listed above. The assessment applies the MarESA sensitivity scores to inform the sensitivity of the various benthic biotopes associated with the designating features. The high sensitivity has been assigned to the qualifying habitats of the Kingmere MCZ and the high sensitivity of the qualifying feature of the Worthing Lumps LWS (likely to be similar to the biotope 'piddocks with a sparse associated fauna in sublittoral very soft chalk or clay (A4.231)' based on available designation information.

### Magnitude of impact

- 14.9.4 The release of sediment during construction, from sandwave clearance, seabed preparation at foundation locations, offshore trenching for cables and drilling of foundations, will result in a temporary increase in the suspended sediment concentrations (SSCs) in the water column, along with associated sediment deposition. The increase in SSC and sediment deposition will be temporary (only during construction), intermittent and of localised extent (within one tidal excursion).
- 14.9.5 The designated habitats of MCZs vary in distance from the PEIR Assessment Boundary, nonetheless, based on the likely settlement rate described in **Chapter 6** the impact will be limited in duration and spatial extent. The magnitude of the impact on all static designated habitats is assessed as being **minor**.

### Sensitivity or value of receptor

- 14.9.6 Subtidal chalk is a protected feature of the Kingmere MCZ which is located adjacent to the proposed Rampion 2 offshore export cable corridor. The representative biotope 'piddocks with a sparse associated fauna in sublittoral very soft chalk or clay (A4.231)', have been identified as having a 'medium' sensitivity to both light and heavy smothering, as per the MarESA assessment. However, on account of the national importance attributed to this feature it has been given a **high** sensitivity to temporary increases in SSC and sediment deposition. The same precautionary sensitivity value has been allocated to the moderate energy infralittoral rock and thin mixed sediments feature of the Kingmere MCZ, although this habitat feature is likely to be less sensitive to a disturbance of this nature. The qualifying features of the Kingmere Rocks LWS has been assigned a sensitivity of high due to its association with the wider Kingmere MCZ.
- 14.9.7 Biotopes associated with the Offshore Overfalls MCZ broadscale habitats, subtidal coarse sediment, subtidal mixed sediments, subtidal sand, typically exhibit a high tolerance to SSC and sediment deposition. The MarESA assessment notes that component biotopes have a sensitivity scores of 'not sensitive' or low sensitivity to increased SSC. Taking a precautionary approach a **low** sensitivity has been assigned to the designated habitats within the Offshore Overfalls MCZ.
- 14.9.8 Protected features of the Pagham Harbour MCZ, which is located at the furthest extent of the secondary ZOI, includes seagrass beds, Defolin's lagoon snail (*C. armoricum*) and the lagoon sand shrimp (*G. insensibilis*). Based on the evidence presented in the MarESA assessment, the sensitivity of these features vary from 'medium' to 'high' sensitivity to temporary increases in SSC and sediment

deposition. A precautionary sensitivity of **high** has been attributed to these features.

- 14.9.9 Protected habitats of the Selsey Bill and the Hounds MCZ include subtidal mixed sediments, subtidal sand, high energy infralittoral rock, low energy infralittoral rock, moderate energy infralittoral rock, moderate energy circalittoral rock and peat and clay exposures. Component biotopes of these habitats vary in their sensitivity to light smothering from low to medium based on the MarESA Assessment. A precautionary sensitivity of **medium** has been attributed to these features.
- 14.9.10 Protected habitats of the Utopia MCZ include circalittoral rock, subtidal coarse and mixed sediment, subtidal sands and fragile sponge and anthozoan communities on subtidal rocky habitats. The component biotopes of these habitat features have a low to medium sensitivity to light smothering based on the MarESA Assessment. A precautionary sensitivity of **medium** has been attributed to these features.
- 14.9.11 Protected habitats of the Beachy Head West MCZ includes, subtidal mixed, mud and sand, infralittoral muds and sands, infralittoral and circalittoral rock, chalk and their associated communities, native oyster (*O. edulis*). The component biotopes of the habitat features have a low to medium sensitivity to light smothering and native oysters has a high sensitivity to light smothering based on the MarESA Assessment. A precautionary sensitivity of **high** has been attributed to these features.
- 14.9.12 Based on the data available for local wildlife sites described and taking into account the known species present and likely biotopes within the benthic study area it is considered that habitats and species associated with Waldrons reef LWS and Shelley Rocks LWS will have a sensitivity of **low** and **medium** respectively.
- 14.9.13 The qualifying features of the biotope 'piddocks with a sparse associated fauna in sublittoral very soft chalk or clay (A4.231)' which is a qualifying feature of the Worthing Lumps LWS has been assigned a **high** sensitivity based on MarESA data.

### Significance of residual effect

- 14.9.14 The indirect impact of increases in SSC and associated sediment deposition will represent a temporary and short-term intermittent impact, affecting a relatively small portion of the nature conservation features in the Rampion 2 nature conservation study area. It is predicted that the sensitivity of the static benthic habitat receptors/features is worst-case **high**. As the magnitude of impact is **minor** this results in a residual effect of **minor adverse significance** (which is **not significant** in EIA terms).

## Temporary increase in suspended sediment and sediment deposition on intertidal designated sites

### Overview

- 14.9.15 The sites and habitats that may be exposed to increased SSC and sediment deposition within the intertidal area are the static features of the supporting habitats of the following designated sites:

- Solent and Dorset Coast SPA (Approximately 1km from the PEIR Assessment Boundary);
- Pagham Harbour SPA (Approximately 10km from the PEIR Assessment Boundary);
- Pagham Harbour Ramsar (Approximately 10km from the PEIR Assessment Boundary);
- Climping Beach SSSI (Overlaps with the PEIR Assessment Boundary);
- Bognor Reef SSSI (Approximately 6km from the PEIR Assessment Boundary);
- Pagham Harbour SSSI (Approximately 10km from the PEIR Assessment Boundary);
- Adur Estuary SSSI (Approximately 16km from the PEIR Assessment Boundary);
- West Beach LNR (Overlaps with the PEIR Assessment Boundary);
- Pagham Harbour LNR (Approximately 10km from the PEIR Assessment Boundary); and,
- Shoreham Beach LNR (Approximately 10km from the PEIR Assessment Boundary);

### Magnitude of impact

- 14.9.16 Temporary increases in SSC and associated sediment deposition in the intertidal area are expected from the cable installation works. **Chapter 6** provides an assessment of the impacts on marine processes including the development and fate of suspended sediments and seabed deposition.
- 14.9.17 The maximum design scenario for the temporary floatation pits (which is to be below MLWS, outwith the intertidal zone) will involve a total of up to 275,000m<sup>3</sup> of excavated sediment for the 16 floatation pits (up to four floatation pits per export cable). Excavated material from the floatation pits is likely to be taken to a temporary offshore storage location. Any fine material being dispersed from the floatation pits during excavation is likely to be widely dispersed and quickly form part of the background concentration of SSC along the nearshore. The magnitude of impact resulting from temporarily elevated levels of siltation in the intertidal is expected to be discernible.
- 14.9.18 Therefore, the magnitude of temporary increase in suspended sediment and sediment deposition relating to construction activities at Rampion 2 will have on benthic intertidal receptors is considered to be **negligible**, indicating that the potential is for barely discernible change for any length that does not threaten the long-term viability of the resource.

### Sensitivity or value of receptor

- 14.9.19 Protected intertidal habitats of the Solent and Dorset Coast SPA and Pagham Harbour SPA and Ramsar include mudflats and saltmarsh are not expected to be impacted due to the negligible magnitude recorded for this temporary impact.



However, have been classified as having a **medium** sensitivity due to their protected status.

- 14.9.20 The sensitivity of the intertidal designated features found within the Rampion 2 nature conservation study area is therefore considered to be at worst-case **medium**, reflecting the conservation status of the nearby Solent and Dorset Coast and Pagham Harbour SPA intertidal features. However, the receptors that have been afforded this higher protection have a high resilience and resistance to light changes in SSC and smothering. The sensitivity for the intertidal features of the Pagham Harbour SPA are also representative of the sensitivity of the features of the Pagham Harbour SSSI and LNR.
- 14.9.21 The Adur Estuary SSSI is designated for sheltered muddy shores (including estuarine muds), *Puccinellia maritima* saltmarsh, *Limonium vulgare* - *Armeria maritima* sub-community and *Atriplex portulacoides* saltmarsh. These intertidal features have a **low** sensitivity to light smothering based on the MarESA assessment.
- 14.9.22 The Bognor Reef SSSI intertidal designated feature for including *Rumex crispus* - *Glaucium flavum* shingle community. This community has not been assessed as part of the MarESA assessment, however, based on similar vegetated coastal shingle communities a sensitivity of **medium** has been assigned to the *Rumex crispus* - *Glaucium flavum* shingle community associated with the Bognor Reef SSSI. Intertidal vegetated shingle habitats of the Climping Beach SSSI, the West Beach LNR and Shoreham Beach LNR are also considered to have **medium** sensitivity to temporary increases in SSC.

### Significance of residual effect

The indirect impact of increases in SSC and associated sediment deposition will represent a discernible impact on supporting habitat features associated with the Pagham Harbour SPA and Ramsar site and the Solent and Dorset Coast SPA recorded within the PEIR nature conservation study area. Intertidal receptors recorded within the PEIR Assessment Boundary are recorded as being 'not sensitive' to having a 'medium' sensitivity to changes in SSC and light smothering (< 5cm), based on MarESA assessments. The sensitivity of the supporting habitat features found within the Rampion 2 nature conservation study area is considered to be at worst-case **medium**. The magnitude is **negligible**. The residual effect is therefore **negligible**, which is **not significant** in EIA terms.

## Impacts to mobile features of designated sites

### Overview

- 14.9.23 Mobile features that are a qualifying feature of a designated site within the nature conservation study area could be affected by activities that affect the species during specific periods in their life history where they congregate or rely on habitats or resources within the respective designated site. Alternatively, species may also be affected by activities that affect individuals when they disperse outside of the designated site for which it is a qualifying feature. This section

summarises the various impact pathways for mobile qualifying feature within and beyond the boundary of the relevant designated site.

- 14.9.24 The mobile species that may be present within the nature conservation study area considered within this preliminary assessment are as follows:
- Black bream (Kingmere MCZ);
  - Short-snouted seahorse (Selsey Bay and the Hounds MCZ; Bembridge MCZ, Beachy Head West MCZ and Beachy Head East MCZ);
  - Short- and long-snouted seahorse (W&CA 1981, Schedule 5 species).
  - Harbour porpoise (Southern North Sea SAC);
  - Kittiwake (Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI);
  - Gannet (Alderney West Coast and Burhou Islands Ramsar); and,
  - Sandwich tern (Solent and Dorset Coast SPA; Dungeness, Romney Marsh and Rye Bay SPA / Ramsar).
- 14.9.25 Full details of evidence and technical assessment used to inform the magnitude, sensitivity and significance of residual effect determinations refer to the various aspect chapters described in **Section 14.1**.

### Black Bream

- 14.9.26 Black bream are a qualifying feature of the Kingmere MCZ which lies directly adjacent to the offshore export cable corridor and supports important nesting habitats. **Table 14-14** summarises the assessment of construction impacts on black bream taking into account the magnitude of the impact and the sensitivity of the receptor. The assessment takes into account connectivity within the MCZ during spawning season and outside of the spawning season when black bream disperse.

**Table 14-14 Preliminary assessment of construction activities on black bream**

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
Mortality and potential mortal injury and Recoverable Injury arising from noise and vibration	Very Low	Medium	Minor adverse (not significant in EIA terms)
Temporal threshold shift arising from	Moderate	Medium	Minor adverse (not significant in EIA terms)

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
noise and vibration			
Behavioural changes and auditory masking arising from noise and vibration	Moderate	Medium	Minor adverse (not significant in EIA terms)
Direct disturbance resulting from the installation of the export cable	Moderate	Very High	Major adverse (significant in EIA terms, considered to be not significant following the implementation of mitigation)
Temporary localised increases in SSC and smothering	Moderate	Medium	Moderate adverse (significant in EIA terms, considered to be not significant following the implementation of mitigation)

- 14.9.27 Based on the detailed assessment presented in **Chapter 8: Fish and shellfish ecology** the preliminary assessment has predicted a **major adverse residual effect** on black bream associated with the Kingmere MCZ, which is considered **significant** in EIA terms.
- 14.9.28 Whilst a specific mitigation measure has not been embedded within the design of the Proposed Development at this stage, there are a number of measures available currently being considered. Such measures can provide a deliverable and could demonstrable reduction in magnitude and therefore significance. For this impact, the potential measures available include constraining the installation method to minimise the area of physical impact, and development of a reinstatement plan to ensure any disturbed bedrock feature is appropriately stored during installation and reinstated following installation. The latter method of reinstatement was previously employed on the existing Rampion 1 offshore wind farm and is considered proven and therefore with a high likelihood of successfully reducing the magnitude and effect significance to non-(EIA) significant levels.

## Seahorse species

- 14.9.29 Short snouted seahorse is a qualifying feature of four MCZs in the eastern English Channel. All MCZs are remote from the Rampion 2 PEIR Assessment Boundary at the periphery or beyond the boundary of the nature conservation boundary. In addition, the short and long snouted seahorse are both Schedule 5 species under the W&CA 1981. **Table 14-15** summarises the assessment of construction impacts on seahorse species taking into account the magnitude of the impact and the sensitivity of the receptor. The assessment considers individuals within the relevant designated sites and following dispersal outside of the spawning season.

**Table 14-15 Preliminary assessment of construction activities on seahorse species**

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Mortality and potential mortal injury and Recoverable Injury arising from noise and vibration</b>	Low	Medium	<b>Minor adverse (not significant in EIA terms)</b>
<b>Temporal threshold shift arising from noise and vibration</b>	Low	Medium	<b>Minor adverse (not significant in EIA terms)</b>
<b>Behavioural changes and auditory masking arising from noise and vibration</b>	Low	Medium	<b>Minor adverse (not significant in EIA terms)</b>
<b>Direct disturbance resulting from the installation of the export cable</b>	Low	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Temporary localised increases in SSC and smothering</b>	Low	Low	<b>Minor adverse (not significant in EIA terms)</b>

- 14.9.30 Based on the detailed assessment presented in **Chapter 8** the preliminary assessment has predicted a **minor** adverse residual effect on short-snouted seahorse associated with the Selsey Bay and the Hounds MCZ; Bembridge MCZ, Beachy Head West MCZ and Beachy Head East MCZ and short- and long-seahorse species as a Schedule 5 species under the W&CA 1981, which is considered **not significant** in EIA terms.

## Harbour Porpoise

- 14.9.31 Harbour porpoise are a qualifying feature of the Southern North Sea SAC. However, harbour porpoise are known to travel significant distances and may therefore overlap with Rampion 2. **Table 14-16** summarises the assessment of construction impacts on harbour porpoise taking into account the magnitude of the impact and the sensitivity of the receptor.

**Table 14-16 Preliminary assessment of construction activities on harbour porpoise**

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Construction noise impacts (PTS) (piling and UXO clearance)</b>	Very low (piling) Low (UXO clearance)	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Construction noise impacts (Disturbance)</b>	Low (piling) Low (UXO clearance)	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Non-piling noise – Underwater noise from seabed preparation, rock dumping and cable installation</b>	Very Low	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Vessel collision risk</b>	Low	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Vessel disturbance</b>	Low	Very low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Change to prey availability</b>	Very Low	Medium	<b>Minor adverse (not significant in EIA terms)</b>

- 14.9.32 Based on the detailed assessment presented in **Chapter 11: Marine mammals** the preliminary assessment has predicted a **minor** adverse residual effect on harbour porpoise associated with the Southern North Sea SAC, which is considered **not significant** in EIA terms.

## Kittiwake

- 14.9.33 Kittiwake are a qualifying feature of the Brighton to Newhaven Cliffs SSSI and Seaford to Beachy Head SSSI. Both sites lie beyond the ornithology nature conservation study area, however, connectivity between the colonies and the PEIR Assessment Boundary were inferred within **Chapter 12: Offshore ornithology** based on relevant foraging behaviour and review of the offshore aerial survey data. Within **Chapter 12** kittiwake are considered to be not sensitive to disturbance and displacement within the offshore export cable corridor and the array area of the Offshore PEIR Assessment Boundary. Therefore, no impacts to kittiwake associated with the Brighton to Newhaven Cliffs SSSI and Seaford to Beachy Head SSSI are predicted during the construction phase.

## Gannet

- 14.9.34 Gannet are a qualifying feature of the Alderney West Coast and Burhou Islands Ramsar. The site is located beyond the ornithology nature conservation study area, however, gannet are known to forage significant distances from colonies and may interact with Rampion 2. **Table 14-17** summarises the impacts on gannet as a result of construction activities associated with Rampion 2.

**Table 14-17 Preliminary assessment of construction activities on gannet from the Alderney West Coast and Burhou Islands Ramsar**

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Disturbance and displacement: Offshore cable corridor</b>	n/a	Not sensitive	<b>No effect predicted</b> and therefore <b>not significant</b> in EIA terms
<b>Disturbance and displacement: Array area</b>	Very Low	Low to medium	<b>Minor adverse (not significant)</b> in EIA terms)

- 14.9.35 Based on the detailed assessment presented in **Chapter 12** the preliminary assessment has predicted a **minor** adverse residual effect on gannet associated with the Alderney West Coast and Burhou Islands Ramsar, which is considered **not significant** in EIA terms.

## Sandwich Tern

- 14.9.36 Sandwich tern are a qualifying feature of the Dungeness, Romney Marsh and Rye Bay SPA and Solent and Dorset Coast SPA. The site lies beyond the ornithology nature conservation study area, however, connectivity between the colonies and the PEIR Assessment Boundary are inferred within **Chapter 12** based on relevant foraging behaviour and review of the offshore aerial survey data. **Table 14-18**



summarises the impacts on sandwich tern as a result of construction activities associated with Rampion 2.

Table 14-18 Preliminary assessment of construction activities on sandwich tern from the Dungeness, Romney Marsh and Rye Bay SPA and Solent and Dorset Coast SPA

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Disturbance and displacement: Offshore cable corridor</b>	n/a	Not sensitive	<b>No effect predicted</b> and therefore <b>not significant</b> in EIA terms
<b>Disturbance and displacement: Array area</b>	Very Low	Medium	<b>Minor adverse (not significant)</b> in EIA terms

14.9.37 Based on the detailed assessment presented in **Chapter 12** the preliminary assessment has predicted a **minor** adverse residual effect on sandwich tern associated with the Dungeness, Romney Marsh and Rye Bay SPA, which is **considered not significant** in EIA terms.

## 14.10 Preliminary assessment: Operation and maintenance phase

### Temporary increase in suspended sediment and sediment deposition on designated features

#### Overview

- 14.10.1 The sites and habitats most sensitive to increased SSC and sediment deposition resulting from operation and maintenance activities are the static features of the following designated sites:
- Kingmere MCZ (moderate energy infralittoral rock and thin mixed sediments, subtidal chalk; black bream);
  - Offshore Overfalls MCZ (subtidal coarse sediment, subtidal mixed sediments, subtidal sand and English Channel outburst flood features);
  - Pagham Harbour MCZ (Seagrass beds, Defolin's lagoon snail (*C. armoricum*) and the lagoon sand shrimp (*G. insensibilis*);
  - Selsey Bill and the Hounds MCZ (Subtidal mixed sediments; Subtidal sand; High energy infralittoral rock; Low energy infralittoral rock; Moderate energy infralittoral rock; Moderate energy circalittoral rock; Peat and clay exposures);

- Utopia MCZ (circalittoral rock, subtidal coarse and mixed sediment, subtidal sands and fragile sponge and anthozoan communities on subtidal rocky habitats);
- Beachy Head West MCZ (intertidal coarse sediments, subtidal mixed, mud and sand, infralittoral muds and sands, infralittoral and circalittoral rock, chalk and their associated communities, native oyster (*O. edulis*);
- Shelley Rocks LWS (predominately cobble and pebble substrate interspersed with mixed sediment and areas of protruding bedrock covered with foliaceous red, green and brown algae and areas of *L. digitatum*);
- Waldrons Reef LWS (bedrock with boulders, gravel and sands with red algae and kelp communities);
- Worthing Lumps LWS (Sublittoral chalk exposure with piddocks); and
- Kingmere Rocks LWS (same as Kingmere MCZ).

### Magnitude of impact

- 14.10.2 Temporary increases in SSC and deposition will arise from the use of jack-up vessels for operational and maintenance activities as well as from cable maintenance and cable repair. There will also be temporary small scale increases in SSC from regular cleaning activities (clearing guano and marine growth). Only a small proportion of seabed is anticipated to be disturbed by operation and maintenance activities during the 30 year design life of Rampion 2 equating to approximately 2.27 percent of the PEIR Assessment Boundary.
- 14.10.3 Cable repair works will require de-burial and re-burial of a cable or cable sections and along with cable preventative maintenance, including re-burial, will consequently result in increases in SSC and sediment deposition. However, the impacts from these works will be spread over the approximate 30-year period of operation and maintenance activities with only a limited number of activities occurring within any one year.
- 14.10.4 The qualifying habitat features designated within the Nature Conservation Study Area vary in proximity to the PEIR Assessment Boundary. The magnitude of the impact that temporary increases in SSC from jack-up operation and cable maintenance activities relating to Rampion 2 will have on designated benthic subtidal and intertidal receptors is considered to be **minor**, indicating that the disturbance of habitat does not threaten the long-term viability of the designated sites identified within the PEIR Nature Conservation study area.

### Sensitivity or value of receptor

- 14.10.5 The sensitivity of relevant receptors is as described under the construction phase preliminary assessment detailed within **paragraphs 14.9.1 - 14.9.11**,. The designated habitat features affected by temporary increases in SSC have a sensitivity between **low** and **high**. Most benthic receptors are known to have a medium to high degree of tolerance to this impact, based on MarESA assessments. A high sensitivity has been assigned to the qualifying habitats of the Kingmere MCZ based on its national importance and to the biotope 'piddocks with a sparse associated fauna in sublittoral very soft chalk or clay (A4.231)' which is a

qualifying feature of the Worthing Lumps LWS based on available designation information.

### Significance of residual effect

- 14.10.6 The impact of temporary increase in SSC will represent a local spatial extent and/or short-term intermittent impact that will at worst case will likely affect a relatively small area of designated benthic subtidal and intertidal habitats in the Rampion 2 PEIR Nature Conservation Study Area. It is predicted that the sensitivity of the receptors is worst-case **high**, and the magnitude is **minor**. The residual effect is of **minor adverse significance** (which is **not significant** in EIA terms).

## Impacts to mobile features of designated sites

### Overview

- 14.10.7 The mobile species that may be present within the nature conservation study area considered within this preliminary assessment are as follows:
- Black bream (Kingmere MCZ);
  - Short-snouted seahorse (Selsey Bay and the Hounds MCZ; Bembridge MCZ, Beachy Head West MCZ and Beachy Head East MCZ);
  - Harbour porpoise (Southern North Sea SAC);
  - Kittiwake (Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI);
  - Gannet (Alderney West Coast and Burhou Islands Ramsar); and
  - Sandwich tern (Dungeness, Romney Marsh and Rye Bay SPA / Ramsar and Solent and Dorset Coast SPA).
  - Long-snouted seahorse (W&CA 1981, Schedule 5 species)
- 14.10.8 Full details of evidence and technical assessment used to inform the magnitude, sensitivity and significance of residual effect determinations refer to the various aspect chapters described in **Section 14.1**.

### Black Bream

- 14.10.9 **Table 14-19** summarises the assessment of impacts arising from operation and maintenance activities on black bream taking into account the magnitude of the impact and the sensitivity of the receptor. The assessment considers connectivity within the MCZ during and outside of the spawning season when black bream disperse and may therefore overlap with the PEIR Assessment Boundary.

Table 14-19 Preliminary assessment of operation and maintenance activities on black bream

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
Long-term loss of habitat and increased hard substrate and structural complexity due to the presence of turbine foundations, scour protection and cable protection	Long-term habitat loss Medium Increased hard substrate Low	Long-term habitat loss Medium Increased hard substrate Low	Long-term habitat loss <b>Moderate adverse (significant in EIA terms, considered to be not significant following the implementation of mitigation, see paragraph 14.10.10)</b> <b>Increased hard substrate</b> <b>Minor adverse (not significant in EIA terms)</b>
EMF impacts arising from cables	Low	Low	<b>Minor adverse (not significant in EIA terms)</b>
Direct disturbance resulting from maintenance within the array area and export cable	Low	Medium	<b>Minor adverse (not significant in EIA terms)</b>

- 14.10.10 Based on the detailed assessment presented in **Chapter 8** the preliminary assessment has predicted a **moderate adverse residual effect** on black bream associated with the Kingmere MCZ, which is considered **significant** in EIA terms. However, the feasibility of mitigating construction phase impacts is anticipated to reduce the impact magnitude and therefore significance of effect, and these measures are anticipated to equally reduce the potential for long term habitat loss being realised in the operational phase of the Proposed Development. The measures, which have regional and site-specific precedent, will provide a deliverable and demonstrable reduction in magnitude and therefore significance. For this impact the measures available include constraining the installation method to minimise the area of physical impact, and development of a reinstatement plan

to ensure any disturbed bedrock feature is appropriately stored during installation and reinstated following installation. The latter method of reinstatement was previously employed on the existing Rampion 1 project and is considered proven and therefore with a high likelihood of successfully reducing the magnitude and effect significance to **not significant** in EIA terms.

## Seahorse species

14.10.11 **Table 14-16** summarises the assessment of impacts on both seahorse species associated with operation and maintenance activities taking into account the magnitude of the impact and the sensitivity of the receptor. The assessment considers individuals within the relevant designated sites and following dispersal outside of the spawning season.

**Table 14-20 Preliminary assessment of operation and maintenance activities on short-snouted seahorse**

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
Long-term loss of habitat and increased hard substrate and structural complexity due to the presence of turbine foundations, scour protection and cable protection	Long-term habitat loss	Long-term habitat loss	Long-term habitat loss
	Low	Low	Minor adverse (not significant in EIA terms)
	Increased hard substrate	Increased hard substrate	Increased hard substrate
	Low	Low	Minor adverse (not significant in EIA terms)
EMF impacts arising from cables	Low	Low	Minor adverse (not significant in EIA terms)
Direct disturbance resulting from maintenance within the array area and export cable	Low	Medium	Minor adverse (not significant in EIA terms)

14.10.12 Based on the detailed assessment presented in **Chapter 8** the preliminary assessment predicts a **minor adverse residual effect** on short-snouted seahorse

associated with the Selsey Bay and the Hounds MCZ; Bembridge MCZ, Beachy Head West MCZ and Beachy Head East MCZ, and short- and long-seahorse species as a Schedule 5 species under the W&CA 1981, which is considered **not significant** in EIA terms.

## Harbour Porpoise

14.10.13 **Table 14-16** summarises the assessment of operation and maintenance activities on harbour porpoise taking into account the magnitude of the impact and the sensitivity of the receptor.

Table 14-21 Preliminary assessment of operation and maintenance activities on harbour porpoise

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
Operational noise	Low	Low	Minor adverse (not significant in EIA terms)
Vessel collision risk	Low	Low	Minor adverse (not significant in EIA terms)
Vessel disturbance	Low	Low	Minor adverse (not significant in EIA terms)
Changes to prey availability	Very low	Low	Minor adverse (not significant in EIA terms)

14.10.14 Based on the detailed assessment presented in **Chapter 11** the preliminary assessment predicts a **minor adverse residual effect** on harbour porpoise associated with the Southern North Sea SAC, which is considered **not significant** in EIA terms.

## Kittiwake

14.10.15 **Table 14-22** summarises the assessment of operation and maintenance activities on kittiwake taking into account the magnitude of the impact and the sensitivity of the receptor.



Table 14-22 Preliminary assessment of operational impacts on kittiwake from the Brighton to Newhaven Cliffs SSSI and Seaford to Beachy Head SSSI

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Disturbance and displacement: Array area</b>	n/a	Very low	<b>Screened out of PEIR</b>
<b>Collision risk: array area</b>	Very Low	Medium	<b>Minor adverse (not significant in EIA terms)</b>
<b>Barrier effects</b>	Very low	Not relevant	<b>Not significant in EIA terms</b>
<b>Indirect effects</b>	No significant effects predicted on prey fish or shellfish resource.		

14.10.16 Based on the detailed assessment presented in **Chapter 12** the preliminary assessment predicts a **minor adverse residual effect** on kittiwake associated with the Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI Ramsar, which is considered not significant in EIA terms.

### Gannet

14.10.17 **Table 14-23** summarises the assessment of operation and maintenance activities on gannet taking into account the magnitude of the impact and the sensitivity of the receptor.

Table 14-23 Preliminary assessment of operational impacts on gannet from the Alderney West Coast and Burhou Islands Ramsar

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Disturbance and displacement: Array area</b>	Very Low	Low to medium	<b>Not significant in EIA terms</b>
<b>Collision risk: array area</b>	Very Low	Medium	<b>Not significant in EIA terms</b>
<b>Barrier effects</b>	Very low	Not relevant	<b>Not significant in EIA terms</b>
<b>Indirect effects</b>	<b>No significant effects</b> predicted on prey fish or shellfish resource.		

- 14.10.18 Based on the detailed assessment presented in **Chapter 12** the preliminary assessment predicts a **minor adverse residual effect** on gannet associated with the Alderney West Coast and Burhou Islands Ramsar, which is considered **not significant** in EIA terms.

### Sandwich Tern

- 14.10.19 **Table 14-24** summarises the assessment of operation and maintenance activities on sandwich tern taking into account the magnitude of the impact and the sensitivity of the receptor.

Table 14-24 Preliminary assessment of operational impacts on Sandwich Tern from the Solent and Dorset Coast SPA and Dungeness, Romney Marsh and Rye Bay SPA

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Disturbance and displacement: Array area</b>	n/a	Medium	<b>Screened out due to very low densities</b>
<b>Collision risk: array area</b>	Very low	Low	<b>Not significant in EIA terms</b>
<b>Barrier effects</b>	Very low	Not relevant	<b>Not significant in EIA terms</b>
<b>Indirect effects</b>	<b>No significant effects</b> predicted on prey fish or shellfish resource.		

- 14.10.20 Based on the detailed assessment presented in **Chapter 12** the preliminary assessment has predicted a **minor adverse residual effect** on sandwich tern associated with the Dungeness, Romney Marsh and Rye Bay SPA, which is considered **not significant** in EIA terms.

## Changes to designated seabed habitats arising from effects on physical processes, including scour effects and changes in the sediment transport and wave regimes resulting in potential effects on benthic communities

### Overview

- 14.10.21 The sites and habitats most sensitive to changes in coastal processes resulting from presence of WTGs and export infrastructure are the static features of the following designated sites:
- Kingmere MCZ (moderate energy infralittoral rock and thin mixed sediments, subtidal chalk; black bream);

- Offshore Overfalls MCZ (subtidal coarse sediment, subtidal mixed sediments, subtidal sand and English Channel outburst flood features);
- Pagham Harbour MCZ (Seagrass beds, Defolin's lagoon snail (*C. armoricum*) and the lagoon sand shrimp (*G. insensibilis*);
- Selsey Bill and the Hounds MCZ (Subtidal mixed sediments; Subtidal sand; High energy infralittoral rock; Low energy infralittoral rock; Moderate energy infralittoral rock; Moderate energy circalittoral rock; Peat and clay exposures);
- Utopia MCZ (circalittoral rock, subtidal coarse and mixed sediment, subtidal sands and fragile sponge and anthozoan communities on subtidal rocky habitats);
- Beachy Head West MCZ (intertidal coarse sediments, subtidal mixed, mud and sand, infralittoral muds and sands, infralittoral and circalittoral rock, chalk and their associated communities, native oyster (*O. edulis*);
- Shelley Rocks LWS (predominately cobble and pebble substrate interspersed with mixed sediment and areas of protruding bedrock covered with foliaceous red, green and brown algae and areas of *L. digitatum*);
- Waldrons Reef LWS (bedrock with boulders, gravel and sands with red algae and kelp communities);
- Worthing Lumps LWS (Sublittoral chalk exposure with piddocks); and
- Kingmere Rocks LWS (same as Kingmere MCZ)

### Magnitude of impact

- 14.10.22 The presence of foundations, scour protection and cable protection material may introduce changes to the local hydrodynamic and wave regime, resulting in changes to the sediment transport pathways and associated effects on benthic ecology. Scour and increases in flow rates can change the characteristics of the sediment potentially making the habitat less suitable for some species.
- 14.10.23 Embedded mitigation in the form of correctly designed scour protection at foundations and sufficiently buried cables (C-44), detailed within **Table 14-12**, will prevent scour occurring (see **Chapter 6**). A detailed scour assessment is provided in **Appendix 6.3, Volume 4**. The assessment outlines that scour is most likely to occur around turbine foundations as a result of tidal currents. An Outline Scour Protection Management Plan will be developed to deploy scour around areas of high risk of scour. Scour will therefore only occur in such areas if and where scour protection has not been applied in the vicinity of project infrastructure.
- 14.10.24 Coastal processes modelling predicts some level of scour around areas of cable protection throughout the operational phase at these features. The extent of this scouring is predicted to be local, occurring around the perimeter of rock berms.
- 14.10.25 The coastal processes preliminary assessment determines that the impacts on hydrodynamic and wave regimes will be not significant and will therefore not result in any significant changes to sediment transport (**Chapter 6**) and consequently will not have any significant impacts on benthic ecology. The magnitude of this impact is therefore considered to be **negligible**.

### Sensitivity or value of receptor

- 14.10.26 As detailed within **paragraphs 14.9.1 to 14.9.11** habitats indirectly affected by increased SSC and deposition have a sensitivity of **low** to **high** to the expected levels of SSC and deposition.

### Significance of residual effect

- 14.10.27 The Rampion 2 commitments (as shown in **Table 14-12**) include the development of a SPMP, to prevent scour occurring at foundations and at buried cables (C-44), which will be approved by the relevant stakeholders and secured through DCO and COCP, to minimise the disturbance to designated features. Overall, it is predicted that the sensitivity of the benthic subtidal and intertidal receptors found within the Rampion 2 Nature Conservation Study Area is **high** and the magnitude is **negligible**. The residual effect is therefore **minor adverse significance**, which is **not significant** in EIA terms.

## 14.11 Preliminary assessment: Decommissioning phase

### Overview

- 14.11.1 Impacts from decommissioning are expected to be similar to those listed for construction, if project infrastructure is removed from the seabed at the end of the development's operational life phase. The nature and scale of impacts arising from decommissioning are expected to be of similar, or reduced magnitude to those generated during the construction; certain activities such as piling, as assessed in relation to designated fish species and harbour porpoise, will not be required. The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and numbers of vessels and equipment.
- 14.11.2 The sensitivity of receptors during the decommissioning is assumed to be the same as given for the construction phase (**Section 14.9**). The magnitude of effect is considered to be no greater or potentially less than those considered for the receptors within the construction phase. Therefore, it is anticipated that any decommissioning impacts will be no greater, and probably less than those assessed for the construction phase.
- 14.11.3 If it is deemed closer to the time of decommissioning that removal of certain parts of the development (for example export and inter-array cables) will have a greater environmental impact than leaving in situ, it may be preferable to leave those parts in situ. In this case, the impacts will be similar to those described for the operation and maintenance phase. If certain parts of the development are left *in situ*, effects dependent on the operation of the wind farm such as EMF effects will not occur.
- 14.11.4 To date, no large offshore wind farm has been decommissioned in UK waters. It is anticipated that any future programme of decommissioning will be developed in close consultation with the relevant statutory marine and nature conservation bodies. This will enable the guidance and best practice at the time to be applied to minimise any potential impacts.

## Temporary increase in suspended sediment and sediment deposition from removal of foundations, cables and rock protection

- 14.11.5 The nature and extent of temporary increase in suspended sediment and sediment deposition during decommissioning is assumed (for the purposes of this assessment) to be similar to that described for the equivalent activities during the construction phase in **paragraphs 14.9.1 et seq.** unless otherwise stated (for instance activities involved in the decommissioning process that give rise to impacts that are similar to those arising from the construction process such as sandwave clearance, cable installation and drilling at foundations).
- 14.11.6 The maximum design scenario has assumed the same quantitative requirements for sandwave clearance, prior to decommissioning, as that required during the construction phase, although this is also likely to be over-precautionary.
- 14.11.7 Decommissioning has the potential to cause temporary increase in suspended sediment and sediment deposition within the PEIR Assessment Boundary, similar to those described during the construction phase. However, as seabed preparation works will not be required, the magnitude of this impact will be lower than during the construction phase.
- 14.11.8 The details of the proposed decommissioning process will be included within the Decommissioning Programme which will be developed and updated throughout the lifetime of Rampion 2 to account for changing best practice.
- 14.11.9 The magnitude of the impact and the sensitivities of the benthic habitats to temporary increase in suspended sediment and sediment deposition are as described for the construction phase (described in detail in **paragraphs 14.9.14 et seq.**).

### Significance of residual effect

- 14.11.10 Based on the assessment undertaken for construction (which represents the maximum design scenario), the sensitivity of benthic designated receptors is considered to be **low to high** and the magnitude is **minor**. The residual effect is of **minor adverse significance** (which is **not significant** in EIA terms).

## Impacts to mobile designated features

### Overview

- 14.11.11 The mobile species that may be present within the nature conservation study area considered within this preliminary assessment are as follows:
- Black bream (Kingmere MCZ);
  - Short-snouted seahorse (Selsey Bay and the Hounds MCZ; Bembridge MCZ, Beachy Head West MCZ and Beachy Head East MCZ);
  - Harbour porpoise (Southern North Sea SAC);
  - Kittiwake (Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI);
  - Gannet (Alderney West Coast and Burhou Islands Ramsar);

- Sandwich tern (Dungeness, Romney Marsh and Rye Bay SPA / Ramsar and Solent and Dorset Coast SPA); and
- Short- and long-snouted seahorse (W&CA 1981, Schedule 5 species).

### Black Bream

- 14.11.12 Impacts to black bream associated with the Kingmere MCZ resulting from decommissioning activities are considered to be similar to or less than construction related impacts. **Table 14-25** summarises the assessment of decommissioning activities on black bream as described within **Chapter 8**.

**Table 14-25 Preliminary assessment of decommissioning activities on black bream**

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
Mortality, injury, behavioural changes and auditory masking arising from noise and vibration	Very Low	Low	Minor adverse (not significant in EIA terms)
Direct disturbance resulting from the installation of the export cable	Low	High	Minor adverse (not significant in EIA terms)
Temporary localised increases in SSC and smothering	Low	Medium	Minor adverse (not significant in EIA terms)

- 14.11.13 Based on the detailed assessment presented in **Chapter 8** the preliminary assessment predicts a **moderate adverse residual effect** as a result of decommissioning activities on black bream associated with the Kingmere MCZ, which is considered **significant** in EIA terms.

### Seahorse species

- 14.11.14 Impacts to short-snouted seahorse associated with Selsey Bay and the Hounds MCZ; Bembridge MCZ, Beachy Head West MCZ and Beachy Head East MCZ, and to short- and long snouted seahorses as a Schedule 5 species, resulting from decommissioning activities are considered to be similar to or less than construction related impacts. **Table 14-26** summarises the assessment of impacts



on short-snouted seahorse associated with operation and maintenance activities taking into account the magnitude of the impact and the sensitivity of the receptor.

Table 14-26 Preliminary assessment of decommissioning activities on short-snouted seahorse

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
Mortality, injury, behavioural changes and auditory masking arising from noise and vibration	Low	Low	Minor adverse (not significant in EIA terms)
Direct disturbance resulting from the installation of the export cable	Low	Low	Minor adverse (not significant in EIA terms)
Temporary localised increases in SSC and smothering	Low	Medium	Minor adverse (not significant in EIA terms)

- 14.11.15 Based on the detailed assessment presented in **Chapter 8** the preliminary assessment has predicts a **minor adverse residual effect** on short-snouted seahorse associated with the Selsey Bay and the Hounds MCZ; Bembridge MCZ, Beachy Head West MCZ and Beachy Head East MCZ, and on short and long-snouted seahorse as a Schedule 5 species under the W&CA 1981, which is considered **not significant** in EIA terms.

### Harbour Porpoise

- 14.11.16 As detailed above decommissioning activities for harbour porpoise are considered to be of the same or lower magnitude than the construction impacts. **Table 14-16** summarises the assessment of construction impacts on harbour porpoise taking into account the magnitude of the impact and the sensitivity of the receptor.

Table 14-27 Preliminary assessment of decommissioning activities on harbour porpoise

Activity and Impact	Magnitude of impact	Receptor and sensitivity or value	Preliminary assessment of residual effect (significance)
<b>Decommissioning noise impacts</b>	Very Low	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Non-piling noise – Underwater noise from seabed preparation, rock dumping and cable installation</b>	Very Low	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Vessel collision risk</b>	Low	Low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Vessel disturbance</b>	Low	Very low	<b>Minor adverse (not significant in EIA terms)</b>
<b>Change to prey availability</b>	Very Low	Medium	<b>Minor adverse (not significant in EIA terms)</b>

- 14.11.17 Based on the detailed assessment presented in **Chapter 11** the preliminary assessment predicts a **minor adverse residual effect** on harbour porpoise associated with the Southern North Sea SAC as a result of decommissioning impacts, which is considered **not significant** in EIA terms.

### Seabird species

- 14.11.18 Impacts associated with decommissioning impacts on the following designated seabird species are considered to be similar to those assessed during the Rampion 2 construction phase: kittiwake, gannet and sandwich tern.
- 14.11.19 The following impacts from decommissioning activities are described in full in **Chapter 12**:
- **Disturbance and displacement: Array area of the PEIR Assessment Boundary.** Decommissioning activities within the array area associated with foundations and WTGs may lead to disturbance and displacement of species within the array and different degrees of buffers surrounding it. However, as all potential effects within the construction phase were deemed to be not significant (see

**Section 14.9), no significant residual effects** are expected within the decommissioning phase.

- **Disturbance and displacement: Offshore Cable Corridor area of the PEIR Assessment Boundary.** Decommissioning activities within the offshore cable corridor associated with decommissioning the export cable may lead to disturbance and displacement of species within the offshore cable corridor and different degrees of buffers surrounding it. However, as all potential effects within the construction phase were deemed to be not significant (see **Section 14.9), no significant residual effects** are expected within the decommissioning phase.
- **Indirect effects: Offshore cable corridor area of the PEIR Assessment Boundary.** During the decommissioning phase of Rampion 2 there is the potential for indirect effects arising from the displacement of prey species due to increased disturbance, or as a result of disturbance to supporting habitats from increased suspended sediment and physical disturbance to the seabed. This may affect food availability for foraging seabirds. However, as no significant effects were identified to potential prey species (fish or benthic) or on the habitats that support them in the assessments on fish and benthic ecology (**Chapter 8** and **Chapter 9**, respectively) then there is no potential for any indirect effects of an adverse significance to occur on offshore and intertidal ornithology receptors.

14.11.20 Based on the detailed assessment presented in **Chapter 12** the preliminary assessment concludes that there will be **no significant effect** on the following species and designations:

- Kittiwake (Brighton to Newhaven Cliffs SSSI; Seaford to Beachy Head SSSI);
- Gannet (Alderney West Coast and Burhou Islands Ramsar); and
- Sandwich tern (Dungeness, Romney Marsh and Rye Bay SPA / Ramsar).

## 14.12 Preliminary assessment: Cumulative effects

### Approach

- 14.12.1 A preliminary cumulative effects assessment (CEA) has been undertaken for Rampion 2 which examines the result from the combined impacts of Rampion 2 with other developments on the same single receptor or resource. The overall method followed to identify and assess potential cumulative effects in relation to the offshore environment is set out in **Chapter 5, Section 5.10**.
- 14.12.2 The offshore screening approach follows RenewableUK (RenewableUK, 2013) accepted guidance which is specific to the marine elements of an offshore wind farm and addresses the requirement to consider mobile wide-ranging species (foraging species, migratory routes etc).

### Scope of the cumulative effects assessment

- 14.12.3 For nature conservation, an initial Zone of Influence (ZOI) (as described in **Section 14.4** and **Figure 14.1, Volume 3**) has been applied for the CEA to ensure

direct and indirect cumulative effects can be appropriately identified and assessed. The ZOI varies for each technical topic based on the extent of impact pathways and draws on the detail contained within the various aspect chapters listed in **Section 14.1**, along with the corresponding technical annexes.

- 14.12.4 A short list of other developments that may interact with the Rampion 2 ZOIs during their construction, operation and maintenance, or decommissioning is presented in **Appendix 5.4: Cumulative effects assessment shortlisted developments, Volume 4** and on **Figure 5.4.1, Volume 4**. This short list has been generated applying criteria set out in **Chapter 5** and has been collated up to the finalisation of the PEIR through desk study, consultation and engagement.
- 14.12.5 Only those developments in the short list that fall within the nature conservation ZOI have the potential to result in cumulative effects with the Project. ZOI for receptors considered within the nature conservation preliminary are receptor and sometimes impact specific, for example, impacts to marine mammals and fish species are identified through noise propagation modelling and application of specific noise thresholds. Developments falling outside the nature conservation ZOI are excluded from this assessment unless specific impact pathways have been identified to specific notified or designated features. Furthermore, the following types of other development have the potential to result in cumulative effects on nature conservation.
- 14.12.6 A tiering structure has been used for screening and assessment of other developments as in accordance with PINS Advice Note Seventeen (Planning Inspectorate, 2019) (**Chapter 5**). Definitions of Tiers are set out in **Table 5-3 of Chapter 5: Approach to EIA, Volume 4**. Where other projects are expected to be completed before construction of the Proposed Development and the effects of those projects are fully determined, effects arising from them are considered as part of the baseline and may be considered as part of both the construction and operational assessment.
- 14.12.7 On the basis of the above, the following specific other developments contained within the short list in **Appendix 5.4, Volume 4** are scoped into this CEA. For full details of the 'other developments' scoped into the CEA and the maximum design scenario reference should be made to the relevant technical chapter. A summary is provided below of the assessment of cumulative effects relevant to the nature conservation assessment.

## Cumulative effects on designated or notified benthic subtidal and intertidal habitats

- 14.12.8 Potential cumulative impacts to the benthic subtidal and intertidal ecology assessed in **Chapter 9** with relevance to nature conservation are as follows:
- cumulative impact from increased SSC and deposition (construction, operation and decommissioning); and
  - cumulative changes to seabed habitats arising from effects on physical processes, including scour effects and changes in the sediment transport and wave regimes resulting in potential effects on benthic communities during operation and maintenance (operation).

- 14.12.9 The CEA identified a number of cable interconnector and aggregate extraction areas in addition to the existing Rampion 1 project in relation to impacts from increased SSC. In relation to changes arising from effects on physical processes the CEA considered the interconnector projects and Rampion 1 only.
- 14.12.10 The cumulative impacts of increased SSC and sediment deposition is considered to be **minor** due to the limited spatial and temporal overlap of the projects scoped into the CEA.
- 14.12.11 The sensitivity of relevant receptors is as described under the construction phase preliminary assessment for Rampion 2 alone detailed within **paragraphs 14.9.1 - 14.9.11**,. The designated habitat features affected by temporary increases in SSC have a sensitivity between **low** and **high**. Most benthic receptors are known to have a medium to high degree of tolerance to this impact, based on MarESA assessments and therefore have been assigned a low to moderate sensitivity. A high sensitivity has been assigned to the qualifying habitats of the Kingmere MCZ based on its national importance and to the biotope 'piddocks with a sparse associated fauna in sublittoral very soft chalk or clay (A4.231)' which is a qualifying feature of the Worthing Lumps LWS based on available designation information.
- 14.12.12 The indirect impact of increases in SSC and associated sediment deposition will represent a temporary and short-term intermittent impact, affecting a relatively small portion of the designated and notified subtidal and intertidal habitats in the Rampion 2 nature conservation study area. It is predicted that the sensitivity of the receptors is worst-case **high**, and the magnitude is **minor**. The residual cumulative effect is of **minor adverse significance** (which is **not significant** in EIA terms).
- 14.12.13 The coastal processes assessment (**Chapter 6**) has determined that the impacts on hydrodynamic and wave regimes from cumulative impacts will be not significant and will therefore not result in any significant changes to sediment transport and consequently will not have any significant adverse impacts on benthic ecology.

## Cumulative effects to mobile designated features

### Black Bream and short snouted seahorse

- 14.12.14 Potential cumulative impacts to black bream and short snouted seahorse are assessed in **Chapter 8** with relevance to nature conservation are as follows:
- cumulative mortality, injury, behavioural changes and auditory masking arising from noise and vibration (construction);
  - cumulative temporary increases in SSC and smothering (construction); and
  - cumulative long-term loss of habitat and increased hard substrate and structural complexity due to the presence of WTG foundations, scour protection and cable protection (operation).
- 14.12.15 There is potential for mortality, injury, behavioural changes and auditory masking arising from noise and vibration as a result of construction activities associated with Rampion 2 and other projects. For the purposes of this PEIR, this additive impact has been assessed within 100km of Rampion 2, which is considered the

maximum extent of impacts from noise as highlighted in noise modelling undertaken as part of their PEIR assessment. The greatest risk of cumulative impacts of underwater noise on fish and shellfish species has been identified as being that produced by impact piling during the construction phase at other offshore wind farm sites in the wider study area from pile driving at other wind farm projects.

- 14.12.16 **Chapter 8** concludes that there will be no cumulative impacts associated with injury or mortality due to the absence of spatial overlap. The cumulative impact of underwater noise on fish and shellfish receptors therefore considers behavioural effects only and is predicted to be of regional spatial extent, short-term duration, intermittent and reversible. Therefore, the magnitude of impact is deemed to be **low**.
- 14.12.17 Overall, it is considered that the sensitivity to the cumulative effects of noise is **medium** and **low** for black bream and short-snouted seahorse respectively. The residual cumulative effect will therefore be of **minor adverse significance**, which is **not significant** in EIA terms.
- 14.12.18 Projects scoped into the CEA in relation to increases in suspended sediment comprise two cable interconnector and aggregate extraction areas in addition to the operational Rampion 1 offshore wind farm. Due to the limited temporal and spatial overlap the magnitude of cumulative impact is considered to be **minor**. The sensitivity to increases in SSC are considered to be **medium** and **low** for black bream and short snouted seahorse, respectively. The residual cumulative effect will therefore be of **minor adverse significance**, which is **not significant** in EIA terms.
- 14.12.19 Impacts from habitat loss or introduction of hard substrata considered the effects of Rampion 1 and two interconnector projects cumulatively with the Rampion 2 project. Whilst cumulative long-term habitat loss will represent a long-term and continuous impact throughout the lifetime of the projects only a relatively small proportion of the fish and shellfish habitats in the wider area are likely to be affected. The magnitude of the impact is deemed to be **very low**. The sensitivity of black bream is considered to be **high** due to its specific habitat requirements. The residual cumulative effect will therefore be of **minor adverse significance**, which is **not significant** in EIA terms.

## Harbour Porpoise

- 14.12.20 Potential cumulative impacts on harbour porpoise assessed in **Chapter 11** with relevance to nature conservation are as follows:
- cumulative increase in underwater noise during construction and operation (construction); and
  - cumulative increases in vessel collision risk and disturbance (construction and operation)
- 14.12.21 The CEA for marine mammals notes that there is a potential risk of other projects within the marine mammal ZOI to increase the underwater noise within the environment, greater than that caused by activities from Rampion 2 alone. A number of interconnector and communication cables and the aggregate extraction



activities are scoped into the CEA for marine mammal in respect of noise effects. Noise associated with these projects will be low level continuous noise sources which will be spatially and temporally intermittent, to the point that when considered cumulatively with Rampion 2, it is not likely to result in significant population disturbance.

- 14.12.22 Regarding cumulative underwater noise from pile driving a number of more distant offshore wind farm projects were scoped in within the central and southern North Sea. Due to the distance between projects it is considered highly unlikely that an individual disturbed by piling at Rampion 2 is unlikely to be affected by disturbance at projects within the Southern North Sea. As such, it is considered that the risk of cumulative disturbance from the identified projects with Rampion 2 is inherently low for harbour porpoise. In addition, the cumulative impact from underwater noise is considered to be of regional spatial extent, medium-term duration, intermittent and reversible; therefore, the magnitude of the impact is assessed as **low**. The sensitivity of harbour porpoise to underwater noise is **low**. The residual cumulative effect will therefore be of **minor adverse significance** which is **not significant** in EIA terms.
- 14.12.23 The CEA considers Rampion 1 operation and maintenance activities, a number of interconnector projects and nearby aggregate extraction activities in the assessment of increases in vessel collision risk. The cumulative impact of increased collision risk is predicted to be of regional spatial extent, medium-term duration, intermittent. Therefore, the overall increased risk is considered to be low. The low level of predicted additional mortality due to collision with vessels is not predicted to have a significant effect on the trajectory or size of any marine mammal population. It is therefore predicted that the impact will be of **very low** magnitude.
- 14.12.24 Harbour porpoise are considered to have a **medium** sensitivity to increased collision risk from vessels. The residual cumulative effect from increased vessel activity will therefore be of **minor adverse significance**, which is **not significant** in EIA terms.

## Seabirds

- 14.12.25 Potential cumulative impacts on assessed in **Chapter 12** and with relevance to nature conservation are as follows:
- potential impact from cumulative displacement on gannet (operation); and
  - potential impact from collision risk on gannet and kittiwake (operation).
- 14.12.26 Cumulative impacts on sandwich tern were scoped out of the CEA.
- 14.12.27 Impacts scoped into the CEA for both species and impacts consider a comprehensive list of offshore wind farm projects around the coast of the UK which reflects the population range of kittiwake and gannet.
- 14.12.28 For gannet the impact from cumulative displacement as a result of the projects scoped into the CEA impacts are assessed on two scales. At the biologically defined minimum population scales (BDMPS) and the biogeographic scale, the level of potential change is considered to be of very low magnitude on an annual cumulative basis, as it represents well under a 1% increase in mortality relative to

the baseline mortality conditions for both species. Therefore, irrespective of the sensitivity of the receptor, the effect is not significant at the BDMPS or biogeographic scales and is therefore not considered further in this assessment.

- 14.12.29 Cumulative collision risk for gannets was assessed based on both population scales and considered the increased mortality resulting from collision risk against natural levels of mortality. The magnitude of cumulative collision risk from operational offshore wind farms within the UK North Sea and Channel is defined as being a **moderate** adverse change on an annual basis and the sensitivity of the species is considered to be **medium**. The overall UK population of gannets has been increasing since at least 1986. Therefore, the predicted level of impact is not considered to be of any significant consequence to the overall BDMPS population. Based on the matrix approach, the overall effect from cumulative collision risk to gannet from Rampion 2 and all other UK offshore wind farms in the UK North Sea and Channel would be assessed as moderate, which is potentially significant. However, the UK population is likely to continue to experience strong growth. Therefore, on this basis, it is assessed that a more reasonable conclusion of the residual effect on a cumulative scale is of **minor adverse significance**, which is **not significant** in EIA terms.
- 14.12.30 For kittiwake the level of potential change resulting from increased mortality is considered to be very low on an annual basis at both the BDMPS and biogeographic scales, as it represents only a slight increase to baseline mortality levels due to the small number of estimated collisions.
- 14.12.31 Therefore, the magnitude of change resulting from collision risk in each bio-season alone and on an annual basis is considered to be **very low**. Irrespective of the sensitivity of the receptor, the significance of the effect is **not significant**.

## 14.13 Transboundary effects

- 14.13.1 This chapter only considers designated sites within UK waters. Any potential transboundary impacts on European Economic Area (EA) states designated sites will be considered within the **Draft RIAA** (RED, 2021).

## 14.14 Inter-related effects

- 14.14.1 The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and decommissioning of Rampion 2 on the same receptor, or group of receptors. Inter-relationships have been assessed within the relevant aspect chapters. The potential inter-related effects that could arise in relation to nature conservation designations are presented within the relevant aspect chapters. Such inter-related effects include both the following.
- **Proposed Development lifetime effects:** for instance, those arising throughout more than one phase of the project (construction, operation, and decommissioning) to interact to potentially create a more significant effect on a receptor than if just one phase were assessed in isolation.

- **Receptor led effects:** Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor (or group). Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

14.14.2 Inter-related effects relevant to the following designations that support static habitat features are described within **Section 9.4** of **Chapter 9**:

- Solent and Dorset Coast SPA;
- Pagham Harbour SPA;
- Pagham Harbour Ramsar;
- Kingmere MCZ;
- Offshore Overfalls MCZ;
- Pagham Harbour;
- Selsey Bill and the Hounds;
- Utopia MCZ;
- Beachy Head West MCZ;
- Climping Beach SSSI;
- Pagham Harbour SSSI;
- Bognor Reef SSSI; and
- Adur Estuary SSSI;
- Shelley Rocks LWS;
- Waldrons Reef LWS;
- Worthing Lumps LWS;
- Kingmere Rocks LWS;

14.14.3 Inter-related effects on designated fish species associated with the following designated sites are considered within **Section 8.4** of **Chapter 8**:

- Kingmere MCZ (black bream);
- Selsey Bay and the Hounds MCZ (short-snouted seahorse);
- Bembridge MCZ (short-snouted seahorse);
- Beachy Head West MCZ (short-snouted seahorse); and,
- Beachy Head East MCZ (short-snouted seahorse).

14.14.4 Inter-related effects on harbour porpoise associated with the Southern North Sea SAC is considered within **Section 10.4** of **Chapter 10**.

14.14.5 Inter-related effects on designated bird species associated with the following designated sites are considered within **Section 11.4** of **Chapter 11**:

- Brighton to Newhaven Cliffs SSSI (kittiwake);

- Seaford to Beachy Head SSSI (kittiwake);
- Alderney West Coast and Burhou Islands Ramsar (Gannet); and
- Solent and Dorset Coast SPA (Sandwich tern); and
- Dungeness, Romney Marsh and Rye Bay SPA / Ramsar (Sandwich tern).

14.14.6 The inter-related assessment undertaken within each of the aspect chapters listed above did not identify any significant inter-related effects that are not already covered by the topic-specific assessments. Whilst some individual effects may interact with each other it was concluded that this will not lead to a greater significance of effect.

## 14.15 Summary of residual effects

14.15.1 **Table 14-28** presents a summary of the preliminary assessment of significant impacts, any relevant embedded environmental measures and residual effects on nature conservation receptors.

Table 14-28 Summary of preliminary assessment of residual effects

Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
<b>Construction</b>				
<b>Temporary increase in suspended sediment and sediment deposition on subtidal designated features</b>	Minor	Kingmere MCZ: high Offshore Overfalls MCZ: medium Pagham Harbour MCZ: medium Selsey Bill and the Hounds MCZ: medium Utopia MCZ: medium Beachy Head West MCZ: medium Shelley Rocks LWS: medium Waldrons Reef LWS: medium Worthing Lumps: high Kingmere Rocks LWS: high	n/a	<b>Minor adverse (not significant in EIA terms)</b>
<b>Temporary increase in suspended sediment and sediment deposition on</b>	Negligible	Solent and Dorset Coast SPA – medium	n/a	<b>Negligible or Minor adverse (not</b>

Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
<b>intertidal designated features</b>		Pagham Harbour SPA – medium Pagham Harbour Ramsar – medium Climping Beach SSSI – medium Bognor Reef SSSI – medium Pagham Harbour SSSI – medium Adur Estuary SSSI – low West Beach LNR – medium Pagham Harbour LNR – medium Shoreham Beach LNR – medium		<b>significant</b> in EIA terms)
<b>Impacts to mobile features of designated sites</b>	Black Bream: very low to moderate Short-snouted seahorse: Low Harbour porpoise: very low – low Kittiwake – n/a	Black Bream: medium to very high Short-snouted seahorse: Low – medium Harbour porpoise: low – medium	C-41, C-43, C-44 and C-45, C-52, C-102, C-51	Black Bream - <b>Major adverse (significant</b> in EIA terms, considered to be <b>not significant</b> following the implementation of mitigation)



Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
	Gannet: very low Sandwich Tern: very low	Kittiwake: not sensitive Gannet: low to medium Sandwich Tern: medium		Short-snouted seahorse – <b>Minor adverse (not significant)</b> in EIA terms) Harbour porpoise: minor adverse Kittiwake – <b>no significance in EIA terms</b> Gannet – <b>Minor adverse (not significant)</b> in EIA terms) Sandwich Tern: <b>Minor adverse (not significant)</b> in EIA terms)
<b>Operation and maintenance</b>				
<b>Temporary increase in suspended sediment and sediment deposition on designated features</b>	Minor	Kingmere MCZ: high Offshore Overfalls MCZ: medium Pagham Harbour MCZ: medium	n/a	<b>Minor adverse (not significant)</b> in EIA terms)

Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
		<p>Selsey Bill and the Hounds MCZ: medium</p> <p>Utopia MCZ: medium</p> <p>Beachy Head West MCZ: medium</p> <p>Shelley Rocks LWS: high</p> <p>Waldrons Reef LWS: medium</p> <p>Worthing Lumps: medium</p> <p>Kingmere Rocks LWS: high</p>		
<b>Impacts to mobile features of designated sites</b>	<p>Black Bream: low – moderate</p> <p>Short-snouted seahorse: Low</p> <p>Harbour porpoise: very low – low</p> <p>Kittiwake – very low</p> <p>Gannet: very low</p> <p>Sandwich Tern: very low</p>	<p>Black Bream: low – medium</p> <p>Short-snouted seahorse: Low - medium</p> <p>Harbour porpoise: low</p> <p>Kittiwake: medium</p> <p>Gannet: medium</p> <p>Sandwich Tern: medium</p>	C-44, C-45, C-95, C-51, C-52, C-96	<p>Black Bream - <b>Moderate adverse (significant)</b> in EIA terms, considered to be <b>not significant</b> following the implementation of mitigation)</p> <p>Short-snouted seahorse – <b>Minor adverse (not</b></p>

Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
				<b>significant</b> in EIA terms) Harbour porpoise: <b>Minor adverse (not significant)</b> in EIA terms) Kittiwake – <b>Minor adverse (not significant)</b> in EIA terms) Gannet – <b>Minor adverse (not significant)</b> in EIA terms) Sandwich Tern: <b>Minor adverse (not significant)</b> in EIA terms)
<b>Changes to designated seabed habitats arising from effects on physical processes, including scour effects and changes in the sediment transport and wave regimes</b>	Negligible	Kingmere MCZ: high Offshore Overfalls MCZ: medium Pagham Harbour MCZ: medium	n/a	<b>Minor adverse (not significant)</b> in EIA terms)

Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
resulting in potential effects on benthic communities		Selsey Bill and the Hounds MCZ: medium Utopia MCZ: medium Beachy Head West MCZ: medium Shelley Rocks LWS: low Waldrons Reef LWS: medium Worthing Lumps: medium Kingmere Rocks LWS: high		
<b>Decommissioning</b>				
Temporary increase in suspended sediment and sediment deposition on designated features	Minor	Kingmere MCZ: high Offshore Overfalls MCZ: medium Pagham Harbour MCZ: medium Selsey Bill and the Hounds MCZ: medium Utopia MCZ: medium	n/a	Minor adverse (not significant in EIA terms)

Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
		Beachy Head West MCZ: medium Shelley Rocks LWS: medium Waldrons Reef LWS: medium Worthing Lumps: medium Kingmere Rocks LWS: high		
<b>Impacts to mobile features of designated sites</b>	Black Bream: very low - low Short-snouted seahorse: Very Low - low Harbour porpoise: very low – low Kittiwake – n/a Gannet: very low Sandwich Tern: very low	Black Bream: high Short-snouted seahorse: Low – medium Harbour porpoise: low – medium Kittiwake: not sensitive Gannet: low to medium Sandwich Tern: medium	C-45, C-52	Black Bream - <b>Minor adverse (not significant)</b> in EIA terms) Short-snouted seahorse – <b>Minor adverse (not significant)</b> in EIA terms) Harbour porpoise: <b>Minor adverse (not significant)</b> in EIA terms)

Activity and impact	Magnitude of impact	Receptor and sensitivity or value	Embedded environmental measures	Preliminary assessment of residual effect (significance)
				Kittiwake – <b>no significance in EIA terms</b> Gannet – <b>Minor adverse (not significant in EIA terms)</b> Sandwich Tern: <b>Minor adverse (not significant in EIA terms)</b>



## 14.16 Further work to be undertaken for ES

- 14.16.1 No specific further work is anticipated specifically for the nature conservation assessment. However, assessments within the various aspect chapters used to inform the preliminary assessment on nature conservation detail additional work that will be undertaken and incorporated into the final ES. Any updates to these assessments will be reviewed against the nature conservation preliminary assessment and incorporated, as necessary.

## 14.17 Glossary of terms and abbreviations

Table 14-29 Glossary of terms and abbreviations

Term (acronym)	Definition
<b>Baseline</b>	Refers to existing conditions as represented by latest available survey and other data which is used as a benchmark for making comparisons to assess the impact of development.
<b>BAP</b>	Biodiversity Action Plan
<b>BDMPS</b>	Biologically defined minimum population scales
<b>Benthic ecology</b>	Benthic ecology encompasses the study of the organisms living in and on the sea floor, the interactions between them and impacts on the surrounding environment.
<b>Biotope</b>	A region of habitat associated with a particular ecological community.
<b>Centre for Environment Fisheries and Aquaculture Science (Cefas)</b>	The Government's marine and freshwater science experts, advising the UK government and overseas partners.
<b>CIEEM</b>	Chartered Institute of Ecology and Environmental Management
<b>Climate Change</b>	A change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes, to external forcing or to persistent anthropogenic changes in the composition of the atmosphere, ocean or in land use.

Term (acronym)	Definition
<b>Coastal processes</b>	The processes that interact to control the physical characteristics of a natural environment, for example: winds; waves; currents; water levels; sediment transport; turbidity; coastline, beach and seabed morphology.
<b>Code of Construction Practice (COCP)</b>	The code sets out the standards and procedures to which developers and contractors must adhere to when undertaking construction of major projects. This will assist with managing the environmental impacts and will identify the main responsibilities and requirements of developers and contractors in constructing their projects.
<b>Cumulative Effects assessment (CEA)</b>	Assessment of impacts as a result of the incremental changes caused by other past, present and reasonably foreseeable human activities and natural processes together with the Proposed Development.
<b>Cumulative impact</b>	Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the Proposed Development.
<b>Development Consent Order (DCO)</b>	This is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.
<b>DCO Application</b>	An application for consent to undertake a Nationally Significant Infrastructure Project made to the Planning Inspectorate who will consider the application and make a recommendation to the Secretary of State, who will decide on whether development consent should be granted for the Proposed Development.
<b>Decommissioning</b>	The period during which a development and its associated processes are removed from active operation.
<b>Ecological feature</b>	Ecological feature is the term used to refer to biodiversity receptors. This term is taken directly from Ecological Impact Assessment guidance from the Chartered Institute of Ecology and Environmental Management.
<b>EIA Regulations 2017</b>	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

Term (acronym)	Definition
	The EIA regulations require that the effects of a project, where these are likely to have a significant effect on the environment, are taken into account in the decision-making process for the project.
<b>Electromagnetic field (EMF)</b>	An electromagnetic field is an electric and magnetic force field that surrounds a moving electric charge.
<b>Environmental Impact Assessment (EIA)</b>	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
<b>Environmental Statement (ES)</b>	The written output presenting the full findings of the Environmental Impact Assessment.
<b>EUNIS habitat classification</b>	A pan-European system which facilitates the harmonised description and classification of all types of habitat, through the use of criteria for habitat identification.
<b>Evidence Plan Process (EPP)</b>	A voluntary consultation process with specialist stakeholders to agree the approach and the information required to support the EIA and HRA for certain aspects
<b>Formal consultation</b>	Formal consultation refers to statutory consultation that is required under Section 42 and Section 47 of the Planning Act 2008 with the relevant consultation bodies and the public on the preliminary environmental information.
<b>Future baseline</b>	Refers to the situation in future years without the Proposed Development.
<b>Geophysical</b>	Relating to the physics of the earth.
<b>Habitats Regulations</b>	EC Council Directive 92/43/EEC, known as the Habitats Directive, was transposed in the UK by the Habitats Regulations 1994 (as amended). The Habitats Regulations apply to UK land and territorial waters and act to ensure biodiversity of natural habitats and of wild flora and fauna through a range of measures including designation of SACs.
<b>Horizontal Directional Drill (HDD)</b>	An engineering technique avoiding open trenches.

Term (acronym)	Definition
<b>Hydrodynamic regime</b>	The characteristic patterns and statistics of variation in water levels and currents for a given location or area. Potentially includes tidal, surge and other residual flow processes; (does not include waves).
<b>IEEM</b>	Institute for Ecology and Environmental Management
<b>Impact</b>	The change resulting from an action.
<b>Indirect effects</b>	<p>Effects that result indirectly from the Proposed Development as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in time from the source of the effects.</p> <p>Often used to describe effects on landscape character that are not directly impacted by the Proposed Development such as effects on perceptual characteristics and qualities of the landscape.</p>
<b>Informal consultation</b>	Informal consultation refers to the voluntary consultation that RED undertake in addition to the formal consultation requirements.
<b>Inshore</b>	The sea up to two miles from the coast
<b>Intertidal</b>	The area of the shoreline which is covered at high tide and uncovered at low tide.
<b>Iterative design</b>	A process by which the design is repeated to make improvements, solve problems, respond to environmental measures and engage local communities and statutory stakeholders.
<b>Joint Nature Conservation Committee (JNCC)</b>	JNCC is the public body that advises the UK Government and devolved administrations on UK-wide and international nature conservation.
<b>LBAP</b>	Local Biodiversity Action Plan
<b>Likely Significant Effects (LSE)</b>	It is a requirement of Environmental Impact Assessment Regulations to determine the likely significant effects of the Proposed Development on the environment which

Term (acronym)	Definition
	should relate to the level of an effect and the type of effect.
<b>Magnitude (of change)</b>	A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short term or long term in duration'. Also known as the 'degree' or 'nature' of change.
<b>MarLIN</b>	Marine Life Information Network
<b>MarESA</b>	Marine Evidence based Sensitivity Assessment
<b>Marine aggregates</b>	Marine dredged sand and/or gravel.
<b>Marine Conservation Zone (MCZ)</b>	A Marine Conservation Zone (MCZ) is a type of marine nature reserve in UK waters. They were established under the Marine and Coastal Access Act (2009) and are areas designated with the aim to protect nationally important, rare or threatened habitats and species.
<b>MHWS</b>	Mean High-Water Spring
<b>MLWS</b>	Mean Low-Water Springs
<b>Marine Management Organisation (MMO)</b>	MMO is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs. MMO license, regulate and plan marine activities in the seas around England so that they're carried out in a sustainable way.
<b>MPA</b>	Marine Protected Area
<b>Nationally Significant Infrastructure Project (NSIP)</b>	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO. These include proposals for renewable energy projects with an installed capacity greater than 100MW.
<b>Natural England</b>	The government advisor for the natural environment in England.
<b>NERC</b>	Natural Environment and Rural Communities
<b>NPS</b>	National Policy Statement

Term (acronym)	Definition
<b>Nursery habitat</b>	Habitats where high numbers of juveniles of a species occur, having a greater level of productivity per unit area than other juvenile habitats.
<b>Offshore</b>	The sea further than two miles from the coast.
<b>Offshore Wind Farm (offshore wind farm)</b>	An offshore wind farm is a group of WTGs in the same location (offshore) in the sea which are used to produce electricity.
<b>PEIR</b>	Preliminary Environmental Information Report
<b>PINS</b>	Planning Inspectorate
<b>Planning Act 2008</b>	The legislative framework for the process of approving major new infrastructure projects.
<b>Planning Inspectorate (PINS)</b>	The Planning Inspectorate deals with planning appeals, national infrastructure planning applications, examinations of local plans and other planning-related and specialist casework in England and Wales.
<b>Preliminary Environmental Information Report (PEIR)</b>	The written output of the Environmental Impact Assessment undertaken to date for the Proposed Development. It is developed to support formal consultation and presents the preliminary findings of the assessment to allow an informed view to be developed of the Proposed Development, the assessment approach that has been undertaken, and the preliminary conclusions on the likely significant effects of the Proposed Development and environmental measures proposed.
<b>Proposed Development</b>	The development that is subject to the application for development consent, as described in Chapter 4.
<b>Rampion 1</b>	The existing Rampion Offshore Wind Farm located in the English Channel in off the south coast of England.
<b>Ramsar site</b>	Areas designated by the UK Government under the International Ramsar Convention (the Convention on Wetlands of International Importance) 1971.



Term (acronym)	Definition
<b>Receptor</b>	There are as defined in Regulation 5(2) of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and include population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage and landscape that may be at risk from exposure to pollutants which could potentially arise as a result of the Proposed Development.
<b>RED</b>	Rampion Extension Development Limited
<b>Scoping Report</b>	A report that presents the findings of an initial stage in the Environmental Impact Assessment process.
<b>Scour</b>	A localised sediment erosion feature caused by local enhancement of flow speed and turbulence due to interaction with an obstacle.
<b>Secretary of State</b>	The body who makes the decision to grant development consent.
<b>Sediment deposition</b>	Settlement of sediment in suspension back to the seabed, causing a localised accumulation.
<b>Sediment transport</b>	The movement of sediment by natural processes, as individual grains or as a collective volume
<b>Sensitivity</b>	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value associated to that receptor.
<b>Significance</b>	A measure of the importance of the environmental effect, defined by criteria specific to the environmental aspect.
<b>Significant effect</b>	<p>It is a requirement of the EIA Regulations to determine the likely significant effects of the development on the environment which should relate to the level of an effect and the type of effect. Where possible significant effects should be mitigated.</p> <p>The significance of an effect gives an indication as to the degree of importance (based on the magnitude of the</p>

Term (acronym)	Definition
	<p>effect and the sensitivity of the receptor) that should be attached to the impact described.</p> <p>Whether or not an effect should be considered significant is not absolute and requires the application of professional judgement.</p> <p>Significant – ‘noteworthy, of considerable amount or effect or importance, not insignificant or negligible’ (The Concise Oxford Dictionary).</p> <p>Those levels and types of landscape and visual effect likely to have a major or important / noteworthy or special effect of which a decision maker should take particular note.</p>
<b>Site of Special Scientific Interest (SSSI)</b>	Sites designated at the national level under the Wildlife & Countryside Act 1981 (as amended). They are a series of sites that are designated to protect the best examples of significant natural habitats and populations of species.
<b>Special Area of Conservation (SAC)</b>	International designation implemented under the Habitats Regulations for the protection of habitats and (non-bird) species. Sites designated to protect habitats and species on Annexes I and II of the Habitats Directive. Sufficient habitat to maintain favourable conservation status of the particular feature in each member state needs to be identified and designated.
<b>Special Protection Area (SPA)</b>	Sites designated under EU Directive (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive.
<b>Stakeholder</b>	Person or organisation with a specific interest (commercial, professional or personal) in a particular issue.
<b>Study area</b>	Area where potential impacts from the Proposed Development could occur, as defined for each aspect.
<b>Spatial Scope</b>	Spatial scope is the area over which changes to the environment are predicted to occur as a consequence of a Proposed Development.

Term (acronym)	Definition
<b>Subtidal</b>	The region of shallow waters which are below the level of low tide.
<b>Suspended sediment concentration (SSC)</b>	The mass concentration (mass / volume) of sediment in suspension
<b>Temporal Scope</b>	The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur and are typically defined as either being temporary or permanent.
<b>Transboundary effects</b>	Assessment of changes to the environment caused by the combined effect of past, present and future human activities and natural processes on other European Economic Area Member States.
<b>The Applicant</b>	Rampion Extension Development Limited (RED)
<b>The Proposed Development / Rampion 2</b>	The onshore and offshore infrastructure associated with the offshore wind farm comprising of installed capacity of up to 1,200MW, located in the English Channel in off the south coast of England.
<b>WTG</b>	Wind Turbine Generator
<b>Zone of Influence (Zoi)</b>	The area surrounding the Proposed Development which could result in likely significant effects

## 14.18 References

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