EDF Energy Nuclear Generation Ltd

Decommissioning of Hinkley Point B Nuclear Power Station

Habitats Regulation Appraisal: Screening Report and Report to Inform Appropriate Assessment

February 2025

Public

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Report for

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Doc Ref. 852351-WSPE-XX-XX-RP-OE-00003_S2_P022

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Executive Summary

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EXECUTIVE SUMMARY

EDF Energy Nuclear Generation Limited (hereafter referred to as the Applicant) is applying for consent under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR) from the Office for Nuclear Regulation (ONR) to decommission Hinkley Point B Nuclear Power Station (HPB) in Somerset (the 'Proposed Works').

Under Regulation 63 of the Habitats Regulations, a person applying for any consent, permission or other authorisation for a plan or project must provide such information as the Competent Authority (in this case, the Office for Nuclear Regulation) may reasonably require for the purposes of the assessment or to enable them to determine whether an appropriate assessment is required. Thus, the Applicant is responsible for assembling and describing all the relevant information required to enable the Competent Authority (CA) to carry out their Habitats Regulations Assessment (HRA) responsibilities.

This HRA Screening Report details the scope, approach and conclusions of the HRA screening, in respect of the impact of the Proposed Works on the qualifying interest features of all sites from the National Site Network screened into the assessment, either alone or in combination with other plans or projects.

The Proposed Works primarily involve the demolition of buildings and infrastructure on operational land predominantly within the existing Nuclear Site Licence boundary (the 'Site'). In addition, works will be undertaken in the marine environment, to isolate and dismantle the Cooling Water Intake Structure, and in the intertidal environment, to install a new Active Effluent Discharge and Sewage Treatment Plant lines. Radioactive wastes and discharges are not in scope of the EIADR Application, due to the regulations and processes already in place to manage their environmental effects and thus ensuring no significant effects on the environment; therefore, radioactive wastes and discharges are not considered within this HRA Screening Report.

The Proposed Works comprise three phases:

- Preparations for Quiescence phase – This phase includes the dismantling and deconstruction of all plant and buildings not included within the Safestore structure on-site, and the management of wastes generated from these activities. This phase includes the modification of the existing reactor building to create the Safestore structure as well as works to the Cooling Water infrastructure.
- Quiescence phase – An approximate 70-year period of relative inactivity with minimal management to allow further radioactive decay of materials within the Safestore. This would involve continuous monitoring and surveillance, with periodic care and maintenance interventions as required.
- Final Site Clearance – This will involve the dismantling and decommissioning of the Reactors, High Activity Debris Vaults and other plant retained within the Safestore and its subsequent removal from the Site. The Safestore structure will also be removed. Following this, works will focus on works needed to facilitate the delicensing of the Site to allow the land to be released for future re-use.

This HRA Screening Report considers HPB baseline survey and monitoring reports (2019 – 2024) and comprehensive monitoring data from HPC, shared with the Applicant (which includes intertidal non-breeding bird counts dating back to 2016, and specific shelduck monitoring (a requirement of HPC discharge condition J2)).

This HRA Report has been updated from the August 2024 version to take account of comments received from the Office for Nuclear Regulation and Natural England, as part of a Further Information Request, following submission of the EIADR Environmental Statement.

This HRA Screening Report concludes that there is the potential for likely significant effects (LSE) on qualifying features of the following sites from the National Site Network and as such it is necessary to progress from Stage 1 ("screening") to the next stage ("appropriate assessment"):

This HRA Screening Report considers the potential for likely significant effects on the following sites:

- Severn Estuary / Môr Hafren SAC (UK0013030);
- Severn Estuary/ Môr Hafren Ramsar Site (UK11081);
- Severn Estuary SPA (UK9015022);
- Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC (UK0030396);
- West Wales Marine / Gorllewin Cymru Forol SAC;
- North Channel SAC;
- Rockabill to Dalkey Island SAC;
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- Nord Bretagne DH SCI;
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- Abers – Côte des légendes SCI;
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- Lundy SAC (UK0013114);
- Pembrokeshire Marine / Sir Benfro Forol SAC;
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- Isles of Scilly Complex SAC;
- The Maidens SAC; and
- Treshnish Isles SAC.

Stage 2: Appropriate assessment considered the potential Adverse Effects on the Integrity (AEoI) of the designated sites and interest features that have been screened into the appraisal in view of the site's conservation objectives. The appraisal has been undertaken with due consideration of the nature and scale of the Proposed Works, the geographic location of the Works relative to the interest features of designated sites and the ecology, behaviour and sensitivities of the interest features to these environmental pressures/changes. Where there are potential adverse effects, mitigation measures are identified with a view to avoiding or minimising the effects.

The appraisal also considered the potential for in-combination effects with relevant plans and projects, namely:

- Hinkley Point C New Nuclear Power Station Granted DCO and Non-Material Change; and
- Bridgwater Tidal Barrier

The appraisal concluded no LSE on integrity from the Proposed Works alone and in-combination with other projects. HRA Report has been updated from the August 2024 version to take account of comments received from the Office for Nuclear Regulation and Natural England, as part of a Further Information Request, following submission of the EIADR Environmental Statement.

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Stage 1

Screening Report

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1 INTRODUCTION

1.1 BACKGROUND

1.1.1. This report is one of a suite of documents that has been prepared to accompany an application to the Office for Nuclear Regulation (ONR) for consent under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR)[1] to decommission Hinkley Point B Nuclear Power Station (HPB) (hereafter referred to as 'the Proposed Works').

1.1.2. The Proposed Works will include the dismantling and deconstruction of buildings and structures in areas within and outside of the Nuclear Site Licence (NSL) boundary, that are part of HPB; these are shown within an Indicative Dismantling Works Area (hereafter referred to as 'the Works Area') where the Proposed Works will occur. The NSL boundary, which partially lies within the Works Area, is referred to as 'the Site'. The Site and Works Area boundaries are shown on **Figure 1.1: HPB Indicative Dismantling Works Area (Works Area)**. Further details are provided in **Section 3** of this report.

1.2 PURPOSE OF THIS REPORT

1.2.1. Statutory designated sites of international importance, and Ramsar wetland sites, collectively known as the 'National Site Network', are present in the wider area surrounding the Works Area. The National Site Network is comprised of statutory designated sites of importance for biodiversity conservation that are protected by the Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations)[2]. Under this legislation 'Competent Authorities' must assess Plans and Projects for their potential to cause 'Likely Significant Effects' (LSE) on, or 'Adverse Effects on Integrity' (AEoI) on the National Site Network, both alone and in-combination with other plans and projects The assessment process is referred to as Habitats Regulations Assessment (HRA).

1.2.2. This report aims to provide the Competent Authority (the Office for Nuclear Regulation) with the information it needs to inform an assessment of the LSEs associated with the Proposed Works on the National Site Network. HRA proceeds in stages which are described in **Section 2**. This report also determines whether further HRA stages (Stage 3 and 4) need to be applied to achieve compliance with legislation. The initial phase of HRA, the Screening Assessment (Stage 1), has been undertaken to identify sites from the National Site Network which are scoped into the HRA process and is included in **Section 4** of this report, and the accompanying **Report to Inform Appropriate Assessment** included in this document proceeds to consider those relevant sites from

[1] The Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 19991999. UK Statutory Instruments 1999 No. 28922892. Available online at: https://www.legislation.gov.uk/uksi/1999/2892/contents/made.https://www.legislation.gov.uk/uksi/1999/2892/contents/made. (Accessed December 2024).

[2] The Conservation of Habitats and Species (Amendment) Regulations (2017).Available online at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made (Accessed December 2024).

the National Site Network which have been screened in for further assessment for their potential LSE associated with the Proposed Works.

1.2.3. This report has also been informed by the HPB Environmental Statement (ES) submitted (including appendices) as part of the application for decommissioning consent, and specifically addressing relevant parts of the following chapters:

- **Chapter 6: Air Quality** (due to the potential for emissions and dust associated with the Proposed Works to negatively affect habitats, flora and fauna);
- **Chapter 8: Terrestrial Biodiversity and ornithology** (due to the close interactions and crossover of ecological features);
- **Chapter 9: Marine Biodiversity** (due to the close interactions and crossover of European Sites and ecological features);
- **Chapter 12: Soils, Geology and Hydrogeology** (due to the close association between some habitats, flora and fauna, and local hydrology);
- **Chapter 14: Landscape and Visual Impact Assessment** (due to the close association between some landscape receptors and ecological features (habitats/flora) and the potential for overlapping embedded environmental measures, mitigation and enhancements);
- **Chapter 15: Noise and Vibration** (due to the potential for fauna to be disturbed or displaced by noise and vibration associated with the Proposed Works, but noting that potential effects on biodiversity has been primarily reported within **Chapter 8: Terrestrial Biodiversity and Ornithology** and **Chapter 9: Marine Biodiversity** of the ES); and
- **Chapter 16: Traffic and Transport** (due to the potential for disturbance associated with the Proposed Works to negatively affect habitats, flora and fauna, potential for traffic/plant emissions to negatively affect habitats, flora and fauna, and potential for road traffic collisions with fauna associated with the Proposed Works).

2 THE HRA PROCESS OVERVIEW

2.1 BACKGROUND

2.1.1. Council Directives 92/43/EEC[3] on the Conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") and 2009/147/EC[4] on the Conservation of wild birds ("the Birds Directive") provide for the designation of sites for the protection of certain species and habitats. Sites designated under these Directives are collectively termed European Sites, forming a network of protected sites known as the Natura 2000 network. The UK Government is also a signatory to the Convention on Wetlands of International Importance 1972[5] ("the Ramsar Convention"). The Ramsar Convention provides for the citation of wetlands of international importance. UK Government policy gives sites identified under this convention ("Ramsar Sites") the same protection as European Sites and the new national site network. The four-stage process of determining the absence of adverse effects on European Sites under the Habitats Directives / Regulations is known as a Habitats Regulations Assessment (HRA).

2.1.2. In the UK, the Habitats Regulations transpose these Directives into national law and apply up to the 12 nautical mile limit of territorial waters. Beyond this limit, they are transposed by the Conservation of Offshore Marine Habitats and Species Regulations 2017[6]

2.1.3. Following the UK's exit from the European Union, changes with regards to the legislation sites were designated under were made by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[7]. As a result of the UK's exit, SACs and SPAs in the UK no longer form part of the EU's Natura 2000 ecological network. However, the 2019 Regulations have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes existing SACs and SPAs, new SACs and SPAs designated under these Regulations. Any references to Natura 2000 in the Habitats Regulations and in relevant guidance now refers to the new national site network.

[3] European Commission (1992). Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043 (Accessed December 2024)
[4] UK Government (2009). Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. Available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009L0147 (Accessed December 2024)
[5] UNESCO (1994). Convention on Wetlands of International Importance especially as Waterfowl Habitat. Available online at: https://www.ramsar.org/sites/default/files/documents/library/current_convention_text_e.pdf (Accessed December 2024)
[6] Conservation of Offshore Marine Habitats and Species Regulations 2017. UK SI 2017, No. 1013. Available online at: https://www.legislation.gov.uk/uksi/2017/1013/contents/made.https://www.legislation.gov.uk/uksi/2017/1013/contents/made. (Accessed December 2024).
[7] The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019) Available online at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 (Accessed December 2024).

2.1.4. For the purposes of this HRA, in line with the Habitats Regulations and relevant Government policy, the term “European Sites” and new national site network includes SACs, candidate SACs (“cSAC”), possible SACs (“pSAC”), SPAs, potential SPAs (“pSPA”), Sites of Community Importance (“SCI”), listed and proposed Ramsar Sites and sites identified or required as compensatory measures for adverse effects on any of these sites. These sites are collectively referred to as the National Site Network.

2.1.5. Amongst other things, the Habitats Regulations define the process for the assessment of the implications of plans or projects on the National Site Network.

2.1.6. HRA can involve up to four stages, as detailed in **Box 1**.

Box 1 Stages of Habitats Regulations Assessment

Stage 1 – Screening:

This stage identifies whether a plan or project is likely to have a significant effect on the National Site Network (including offshore marine sites) (either alone or in combination with other plans or projects. Where Likely Significant Effects (LSE) cannot be ruled out at this stage on a site from the National Site Network, it will be “screened in” and assessed further.

Stage 2 – Appropriate Assessment:

Where there are LSE, this stage considers the impacts of the Plan or project on the integrity of the relevant site from the National Site Network, either alone or ‘in combination’ with other projects or plans, with respect to the sites’ structure and function and their conservation objectives. Where there are adverse effects, it also includes an assessment of the potential mitigation for those effects.

Stage 3 – Assessment of Alternative Solutions:

Where adverse effects (on the integrity of the site) are predicted, this stage examines (whether or not there are) alternative ways of achieving the objectives of the project or Plan that avoid adverse impacts on the integrity of the site.

Stage 4 – Assessment Where No Alternative Solutions Exist and Where Adverse Impacts Remain:

This stage assesses compensatory measures where it is deemed that the project or Plan should proceed for imperative reasons of overriding public interest (IROPI).

2.1.7. Stages 1 and 2 are covered by Regulation 63 and Stages 3 and 4 are covered by Regulation 64 and 68 of the Habitats Regulations.

2.1.8. With respect to Stage 2, the integrity of a site which forms part of the National Site Network relates to the site's conservation objectives and has been defined in guidance as "*the coherent sum of the*

site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated"[8]. An adverse effect on integrity, therefore, is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of designation. The HRA screening process uses the threshold of Likely Significant Effect (LSE) to determine whether effects on site should be the subject of further assessment.

2.1.9. The Habitats Regulations do not define the term LSE. However, in the Waddenzee case (Case C-127/02)[9] the European Court of Justice found that an LSE should be presumed, and an AA carried out, if it cannot be concluded on the basis of objective information that the plan or project will not have significant effects on the conservation objectives of the site concerned, whether alone or in-combination with any other project, AA will be required. The Advocate General's opinion of the Sweetman case (Case C-258/11)[10] further clarifies the position by noting that for a conclusion of an LSE to be made "*there is no need to **establish** such an effect... it is merely necessary to determine that there **may** be such an effect*" (original emphasis).

2.1.10. For the reasons highlighted above, the assessment process follows the precautionary principle throughout and the word 'likely' is regarded as a description of a risk (or possibility) rather than in a legal sense of an expression of probability.

2.1.11. Screening can be used to screen-out sites from the National Site Network and elements of works from further assessment, if it is possible to determine that significant effects are unlikely (e.g., if sites or interest features are clearly not vulnerable (exposed and / or sensitive) to the outcomes of the proposal due to the absence of any reasonable impact pathways.

2.1.12. The screening process has two potential conclusions, namely that the proposed development, alone or in combination with other developments, could result in:

- No LSE on any of the qualifying features of the site; or
- LSE identified, or cannot be ruled out, on one or more of the qualifying features of the site.

2.1.13. Only the latter of these outcomes will trigger an AA. If one or more LSE are identified, or cannot be ruled out, it is then necessary to proceed to Stage 2 and produce an AA.

2.1.14. On 12 April 2018, the Court of Justice of the European Union (CJEU) issued a judgment on Case C323/17 (People over Wind, Peter Sweetman v Coillte Teoranta) which stated (at paragraph 41)[11]:

"*Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is*

[8] Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, at section 4.6.3 (Updated Version, November 2018).
[9] Judgment of the Court (Grand Chamber) of 7 September 2004. Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landbouw, Natuurbeheer en Visserij. Reference for a preliminary ruling: Raad van State - Netherlands. Case C-127/02.
[10] Judgment of the Court (Third Chamber), 11 April 2013 Peter Sweetman and Others v An Bord Pleanála. Request for a preliminary ruling from the Supreme Court (Ireland) Case C-258/11.
[11] C-323/17 People over Wind and Sweetman (2018) Available online at: https://curia.europa.eu/juris/liste.jsf?language=en&num=C-323/17 (Accessed December 2024).

necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects (mitigation) of the plan or project on that site."

2.1.15. This means that any mitigation relating to protected sites under the Habitat Regulations will no longer be considered at the screening stage but taken forward and considered at the AA stage to inform a decision on whether no adverse effects on site integrity can be demonstrated.

2.1.16. The screening assessment provided within this HRA takes into account the CJEU ruling on 'People over Wind'. It has also adopted a precautionary principle; if a pathway of effect is established between the Proposed Works and a site from the National Site Network, then that site is taken through to appropriate assessment.

2.1.17. As a precautionary approach has been adopted throughout the screening process for the Project (in this case, the Proposed Works), only those designated features and sites from the National Site Network where it can be demonstrated that there is no likelihood of a significant effect occurring have been screened out.

2.2 STAGE 1: SCREENING

2.2.1. Screening aims to determine whether the Proposed Works will have any LSE on the National Site Network as a result of its implementation. It is intended to be an informed high-level filter for identifying effects (positive and negative) that may occur, to allow the assessment stage then to focus on the most important aspects.

2.2.2. This report follows the procedures for screening and appropriate assessment described by the European Commission in the guidance document *'Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*'[12]. The steps for Stage 1 - Screening are:

- Step 1: Determining whether the project or plan is directly connected with or necessary for the management of the site;
- Step 2: Describing the project (or plan);
- Step 3: Identifying the potential effects on the National Site Network; and
- Step 4: Assessing the presence of Likely Significant Effects on the National Site Network.

Step 1

2.2.3. Regulation 63 of the Habitats Regulations applies to plans or projects that are not directly related to the conservation management of a Natura 2000 site. This first step of the screening process is

[12] European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Available online at: https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf (Accessed December 2024).

therefore to identify whether the plan or project in question is related to the conservation management of any European Sites.

2.2.4. The European Commission guidance makes it clear that, for a project or plan to be 'directly' connected with or necessary to the management of a European Site, the management must refer to measures that are for conservation purposes. 'Directly' element thus refers to measures that are solely conceived for the conservation management of a site and not direct or indirect consequences of other activities.

2.2.5. The Proposed Works comprise a 'plan or project', for the purpose of the Habitat Regulations, but are not directly connected with or necessary for the management of any European Site. An AA may, therefore, still be required and so it is necessary to proceed to Step 2 of the Screening Process.

2.2.6. To complete Step 1, the designated sites or relevance to the HRA Screening must be identified. The criteria used to identify designated sites are as follows:

- Criterion 1: Designated site(s) boundary has direct overlap with the Works Area (as described in Chapter 3);
- Criterion 2: Designated site(s) for qualifying mobile species/features (in marine/freshwater/terrestrial environments) whose range (e.g. foraging, breeding, non-breeding, migratory or natural habitat range) may interact with the Proposed Works; and
- Criterion 3: Designated site(s) and/or qualifying interest features with supporting or functionally linked habitat located within a potential receptor Zone of Influence (ZOI) of the Proposed Works described in Section 4.5.

2.2.7. Where a designated site meets any of the criteria outlined above, the relevant sites will be taken forward through Steps 2-4 in the Screening process. For designated sites that do not meet the above criteria set out above, it is considered that there is no potential for LSE and they are therefore excluded from further consideration through Steps 2-4 in the Screening process.

2.2.8. **Section 3** presents a description of the Proposed Works. The identification of potential effects and conclusions from the screening process presented in **Section 4**.

2.3 STAGE 2: APPROPRIATE ASSESSMENT

2.3.1. Where it is determined that a conclusion of ‘no Likely Significant Effect’ cannot be drawn at Stage 2, the HRA assessment proceeds to the next stage of HRA known as Appropriate Assessment.

2.3.2. This stage provides a detailed consideration of any LSE and whether they would lead to adverse effects on the integrity of the relevant site from the National Site Network, either alone or in combination with other plans and projects. Where there are adverse effect(s), mitigation may be considered to see whether it is possible to avoid them.

2.3.3. Consent may only be granted at this stage if the Appropriate Assessment can conclude beyond reasonable scientific doubt that the plan or project will not have any adverse effect(s) (either alone or in-combination with other plans and projects. If the mitigation options cannot avoid adverse any effect(s), then development consent can only be given if Stages 3 and 4 are followed.

2.4 STAGES 3 AND 4

2.4.1. Following an Appropriate Assessment, if a risk to the integrity of the relevant site from the National Site Network is identified, it must then be considered (at Stage 3) whether any ‘alternative solutions’ exist that would be capable of delivering the same overall objective as the original proposal in a way that would not adversely affect the integrity of the site.

2.4.2. If such an alternative is identified, then it should be pursued. If such an alternative is not identified, then the competent authority must consider whether the plan or project, in spite of a negative assessment of the implications for the National Site Network, must nevertheless be undertaken for IROPI) (Stage 4).

2.4.3. Furthermore, if IROPI can be demonstrated, for the project to proceed ‘compensatory measures’ necessary to ensure that the overall coherence of Natura 2000 is protected will need to be implemented. Therefore, following the demonstration of IROPI in Stage 4, compensatory measures must be demonstrated to be available and deliverable.

3 DESCRIPTION OF THE PROPOSED WORKS

3.1 SITE LOCATION AND CONTEXT

THE HINKLEY POINT COMPLEX

3.1.1. The HPB site is located on the north coast of Somerset on the shore of the Severn Estuary (see **Figure 1.1: HPB Indicative Dismantling Works Area (Works Area)**).which ceased generation in August 2022 after 46 years of service. It is approximately 12 km north-west of the town of Bridgwater. The smaller settlements of Wick, Burton, Shurton, Stogursey and Stolford are within 3 km of the Site. The Site is currently within the jurisdiction of Somerset Council[13].

3.1.2. EDF Energy Nuclear Generation Limited (the Applicant) is the current Licensee holding the Nuclear Site Licence for HPB granted under the Nuclear Installations Act 1965 (as amended). The power station ended generation in August 2022 and is currently defueling the reactors. The Applicant is making this application as the current Licensee and in accordance with obligations under the Nuclear Site Licence (Licence Condition 35) to make and implement adequate arrangements for the future dismantling and decommissioning of HPB.

3.1.3. HPB is situated to the east of the Hinkley Point A Nuclear Power Station (HPA) which ceased generation in 1999 and is currently undergoing decommissioning. A double security fence surrounds HPB and HPA, and an additional fence separates the two power station sites. Immediately to the west of HPA is the Hinkley Point C New Nuclear Build site (HPC) currently under construction. HPC comprises two European Pressurised Water Reactors. Generation from the first unit is expected to commence around the end of the decade.

3.1.4. Collectively these sites are referred to as the Hinkley Point Complex to explain their geographic context. However, the Proposed Works are limited to the decommissioning of HPB.

3.1.5. Whilst none of the works being undertaken at HPC are linked to the Proposed Works, due to the close proximity of the sites which form the Hinkley Point Complex, survey data has been shared between the sites.

THE SURROUNDING AREA

3.1.6. The Hinkley Point Complex is largely surrounded by land in agricultural use with regular medium sized fields divided by fence-lines and hedges. HPB is bounded to the south and east by a belt of woodland which screens the lower buildings within the Works Area from view. Beyond this, its surroundings are predominantly open, gently rolling, lowland with the land rising from the coast.

3.1.7. The main features surrounding the Site are mudflats to the north and east. The intertidal mudflats of Bridgwater Bay are separated from the Site by a low cliff, of around 5-10 m in height. At low tide the

[13] Somerset Unitary Authority was created in April 2023 and replaces Somerset County Council. The new unitary council brings together the services previously provided by the four district councils in Somerset (Mendip, Sedgemoor, Somerset West and Taunton, and South Somerset) alongside the services formerly provided by Somerset County Council.

shore adjacent to the Site comprises a narrow rock platform, interspersed with and fringed by mudflats; while to the east, the mudflats extend up to 500 m from the shoreline at low water. Bridgwater Bay forms part of the Bristol Channel, based on the conventional definition of the International Hydrographic Organisation (IHO)[14].

3.1.8. To the south of the terrestrial Works Area is a 400 kV substation that is operated by the National Grid and connects HPB to the national transmission network. The 400 kV substation is on operational land but is on a long-term lease agreement to National Grid Energy Transmission and not within the scope of the Works Area. Beyond this but within the Works Area lies a sewage treatment plant servicing foul water from HPA and the Site.

SITE DESCRIPTION

3.1.9. The land within the Site lies at an elevation of approximately 10 m Above Ordnance Datum (AOD). It predominantly features built form development including the buildings housing the reactors and the adjoining turbine hall towards the centre of the Site, and smaller ancillary buildings, warehouses and tanks. These features are set within current operational land-uses (i.e. related to works on the HPB site) comprising access tracks, car parking and substation compounds all bounded by security fencing. At HPB, the Nuclear Site License (NSL) covers areas to the south, west and east of the power station outside of the security fencing. This area comprises a mosaic of broadleaved and mixed plantation woodland, semi-improved neutral grassland, scrub, tall ruderal vegetation and ephemeral/short perennial vegetation.

3.1.10. The area covered by the Site is approximately 40.1 hectares (ha). The Works Area denotes the indicative area required for the deconstruction of HPB. It includes buildings, structures and the cooling water system, which is located outside the NSL boundary but is a constituent part of the power station infrastructure that will be decommissioned. The Works Area covers approximately 22.71 ha.

3.1.11. The layout of the Works Area may be considered in three parts for the purposes of decommissioning:

- The Radiation Controlled Area (RCA) - The main RCA consists of the Reactor Building (containing the two reactors) and a number of adjoining structures containing plant and structures that have the potential to contain radioactive contamination. This area includes areas such as the fuel cooling ponds, the debris vaults and other radioactive waste treatment plant and buildings. There are also other RCAs within the Works Area, such as the gas circulation maintenance workshop and the Combined Radioactive Waste Disposal (CRAWD).
- The Conventional Area - consists of the area outside of the RCA. It includes ancillary plant and buildings such as the Turbine Hall and services building, cooling water systems and numerous other buildings, compounds, roadway, hard standings which make up the operational site. For the purposes of assessment, it also includes areas outside of the main security fence such as the car

[14] IHO defines the nearshore limit of the Bristol Channel as the line between Sand Point (north of Weston-super-Mare, Somerset) and Lavernock Point (south of Penarth, Vale of Glamorgan). East of this line is the Severn Estuary.

parks, and other structures that require removal as part of the Proposed Works such as the Sewage Treatment Plant; and

- The Marine Area – The Cooling Water Intake and Outfall and the associated offshore sections of the tunnels are not included within the Nuclear Site License boundary but are key parts of the power station that will be decommissioned.

3.2 DESCRIPTION OF THE DECOMMISSIONING PROCESS

OVERVIEW

3.2.1. The decommissioning of HPB will be undertaken in three key phases:

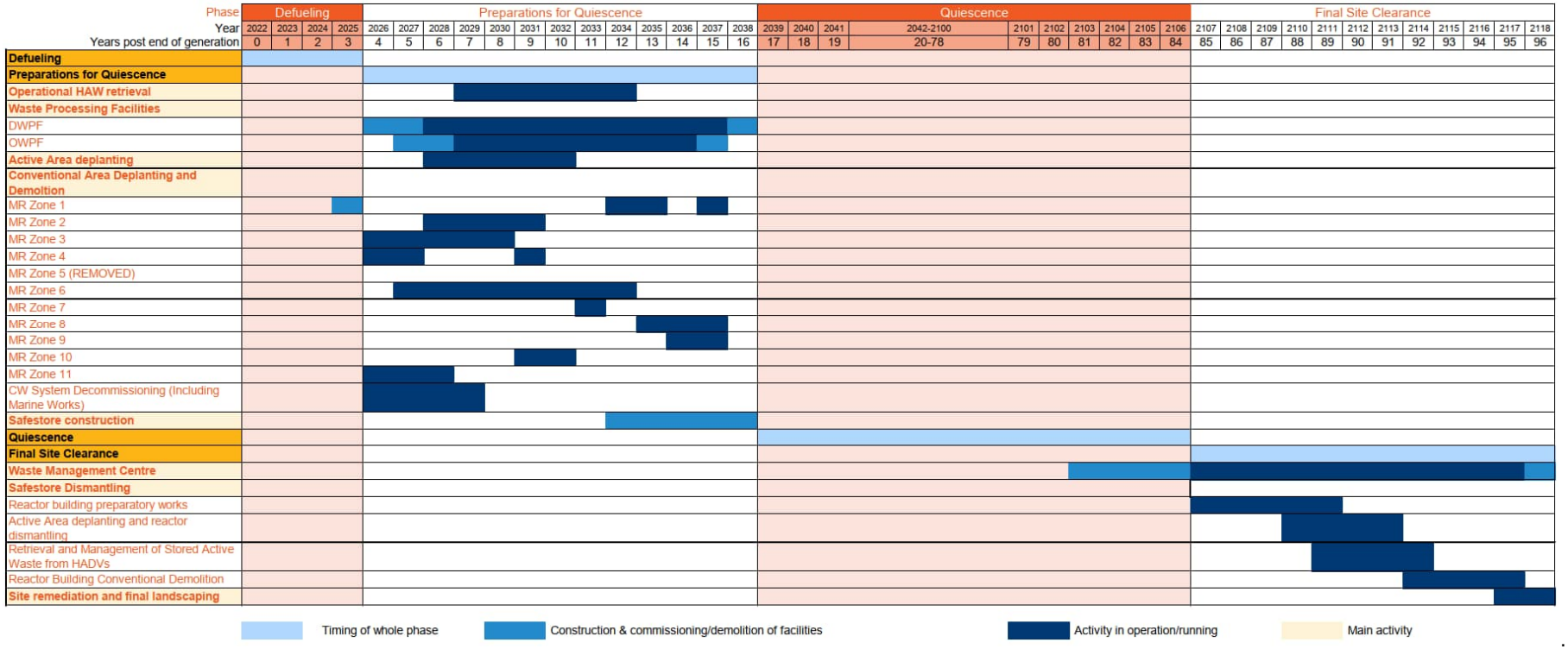
- Preparations for Quiescence Phase;
- Quiescence Phase; and
- Final Site Clearance.

3.2.2. The following sections describe the activities that will take place during each of these phases and the relevant timescales associated with each phase. The timing of these activities is shown on **Graphic 3-1.**

3.2.3. **Graphic 3-2** and **Graphic 3-3** provides further detail with respect to the indicative timeline required to complete the elements of the Proposed Works that are situated in the marine environment.

3.2.4. As HPB forms part of the Hinkley Point Complex alongside HPA and HPC, **Graphic 3-4** provides the indicative programme for each station and their respective lifecycle phases, to identify temporal overlaps for the duration of the Proposed Works.

Graphic 3-1 Indicative Decommissioning timeline



Graphic 3-2 – Indicative Marine Works Timeline (new Active Effluent Discharge Line (AEDL) and the Sewage Treatment Plant Line (STPL)

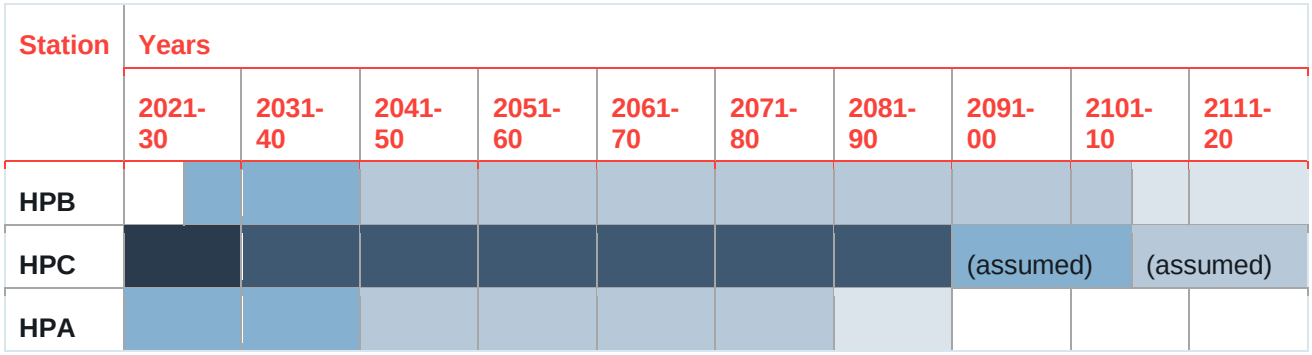
Activity	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov
Project Planning									
Engineering Survey									
Procurement									
Offsite Fabrication Works									
Enabling Works									
Landside Mobilisation									
Landside installation Works									
Offshore Preparation Works									
Offshore Installation Works									
Offshore De-mobilisation									

* Where works are included during July – September, offshore preparatory works will not take place within the marine environment,

Graphic 3-3 – Indicative Marine Works Timeline (CW Intake Structure Dismantling)

Activity	2028				2029									
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Project Planning														
Survey Work														
Procurement														
Landside preparation works														
Landside Demolition Works														
Offshore Mobilisation														
Offshore Demolition Works														
Offshore de-mobilisation														

Graphic 3-4 – Hinkley Point Complex Timeline



	Construction phase
	Operational phase
	Preparations for Quiescence phase / Pre-Care & Maintenance phase (HPA)
	Quiescence phase / Care & Maintenance phase (HPA)
	Final Site Clearance phase

PREPARATIONS FOR QUIESCENCE PHASE

3.2.5. The Preparations for Quiescence phase begins after defueling and forms the first phase of the Proposed Works, anticipated to take approximately 13 years.

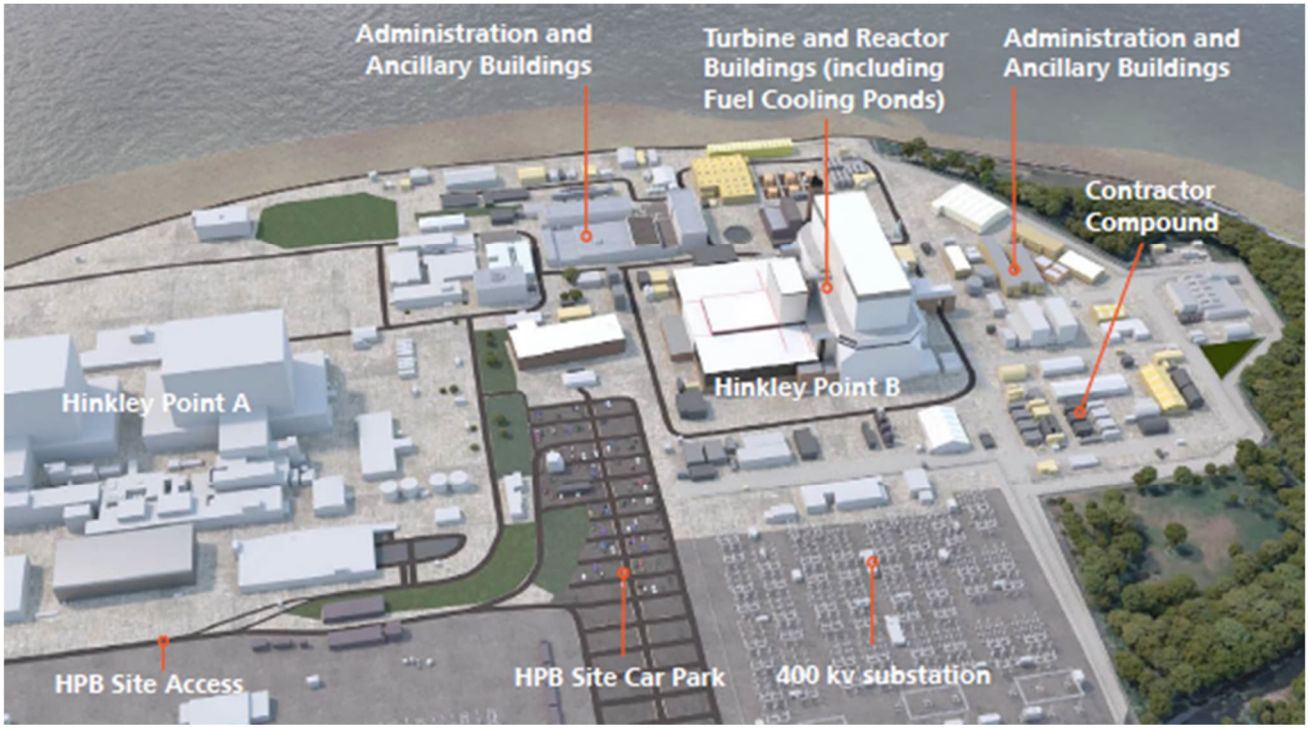
3.2.6. The purpose of the Preparations for Quiescence phase is to reduce the hazard presented by the radioactive and non-radioactive materials and wastes on site and to place the Site into a passively safe and secure state for the Quiescence phase where the need for human intervention to maintain acceptable conditions is minimised.

3.2.7. The Preparations for Quiescence phase will be a period when the Site undergoes a relatively large amount of civil engineering work, including demolition of all existing buildings, except for the Reactor Building complex which will be repurposed and modified to create a ‘Safestore’ to allow further radioactive decay to occur during the Quiescence phase. The Preparations for Quiescence phase will involve the processing, packaging and removal of some operational Higher Activity Waste (HAW) that has accumulated on-site and the processing, packaging of Lower Activity Waste (LAW) generated as a result of deplanting and demolition activities.

3.2.8.

3.2.9. **Graphic 3-5** provides an illustration of the current appearance of the Site (1 month after End of Generation (EoG)). **Graphic 3-6** illustrates how the Site will change in appearance by the end of the Preparations for Quiescence Phase.

Graphic 3-5 Graphic showing HPB just after the End of Generation



Graphic 3-6 Graphic showing HPB at end of the Preparations for Quiescence Phase

Waste management

3.2.10. During the Preparations for Quiescence Phase, the deplanting and deconstruction works will generate radioactive and conventional (i.e. non-radioactive) wastes. Waste management during decommissioning will continue to follow the principles of the waste hierarchy and be undertaken in-line with other industry guidance and relevant waste legislation.

3.2.11. The Proposed Works during the Preparations for Quiescence Phase will generate Low Activity Waste (LAW) and limited quantities of Higher Activity Waste (HAW) classified as Intermediate Level Waste (ILW).

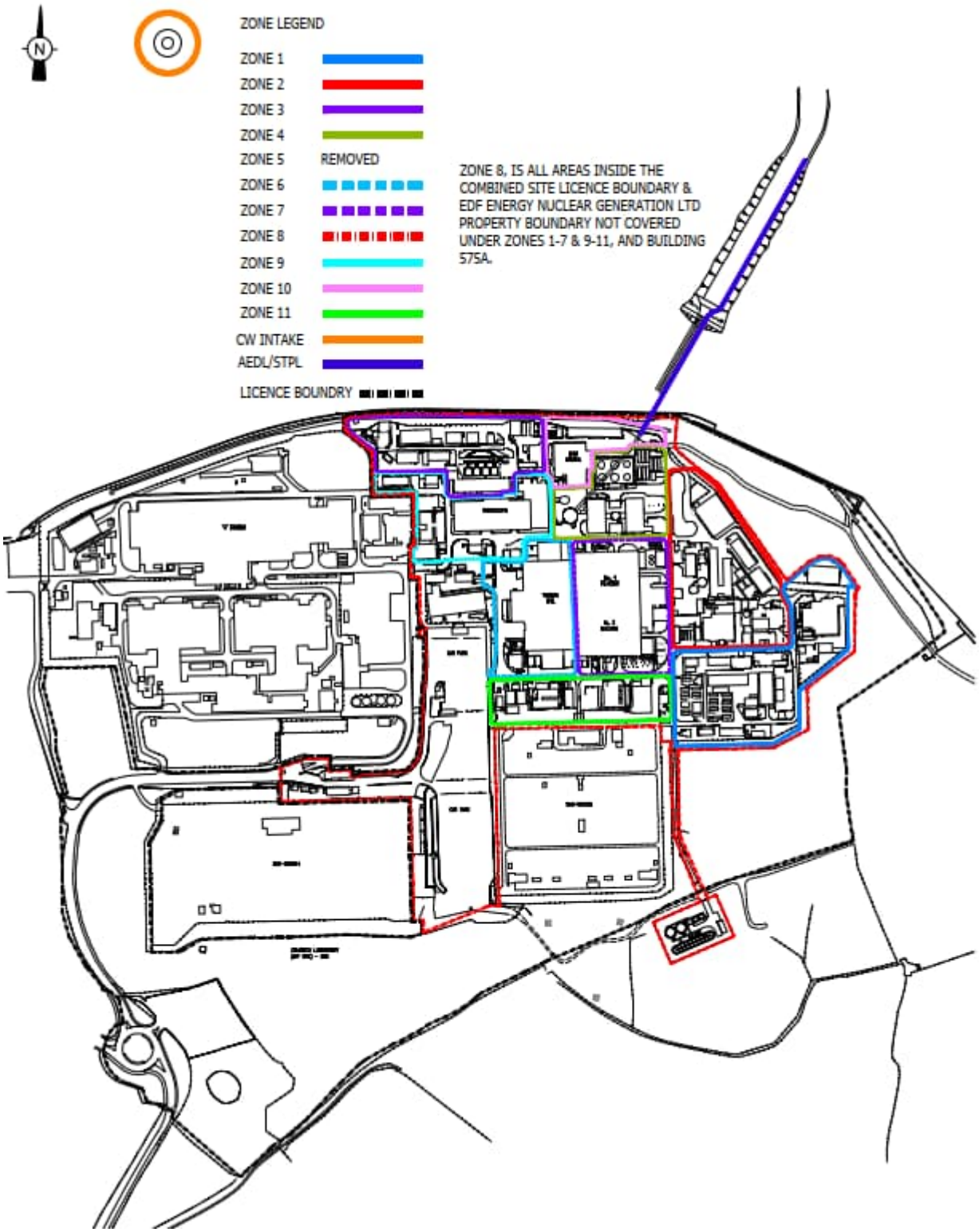
3.2.12. To assist in processing waste associated with the Preparations for Quiescence phase, an Operational Waste Processing Facility (OWPF) and Decommissioning Waste Processing Facility (DWPF) may be required on-site.

Deplanting and deconstruction

3.2.13. During the Preparations for Quiescence phase, most of the existing buildings will be demolished. Some partial dismantling and removal of plant will occur on and within the reactor buildings with the reactors, the concrete pressure vessels, the boilers and Higher Activity Debris Vaults (HADVs) remaining within a Safestore structure. There will be movement of plant and demolition wastes around the Site, and the use of cranes and other engineering equipment will be required to undertake the works. Existing ground contamination will be remediated on a risk-based approach during this phase. Where possible, demolitions will be to ground level only, although some voids can be expected to be left unfilled.

3.2.14. The deplanting and deconstruction of buildings and structures in the Conventional Area during the Preparations for Quiescence phase is broken into 11 zones. **Appendix 2B** of the **ES** outlines the buildings and structures included within each of these 11 zones (See **Graphic 3-7**). It is expected that buildings within the RCA which are scheduled for deconstruction in the Preparations for Quiescence phase will be deplanted and fully decontaminated under the Active Area Deplanting works, which will enable them to be demolished as conventional buildings using conventional methods as outlined in the programme in **Graphic 3-1.**

Graphic 3-7 Location of Buildings within each Managed Retreat Zone



3.2.15. Before deplanting and demolition of the CW system can commence, it will be necessary to isolate the CW system from the sea. The first stage of the CW System demolition process is to lower the existing dam boards for the forebay/drum screen apertures. The inlet system from the drum screen bay to the turbines will be dewatered by pumping out the water into the forebay.

3.2.16. Dam boards, for the CW Outlet Culverts at the Seal Pit, will be lowered into place utilising a mobile crane. The CW Outlet Culverts between the Turbine Hall and the Seal Pit will be dewatered by pumping out the water into the Seal Pit at the access chamber to the culverts.

3.2.17. The CW Outfall Tunnel is exposed at low tide and therefore, for several hours per day it will be dry – hence there is no need to dewater. The CW Outfall Tunnel will be sealed where it intersects with the Sea Wall. The CW Outfall Tunnel will be exposed at the Sea Wall at the junction of the HPB and HPA tunnels. Shuttering will be installed on the HPB section of the tunnel and will be positioned to produce a concrete plug of 2 m to prevent water ingress to the landward side of the CW Outfall tunnel Concrete will be delivered to site and the void created by the shutters will be filled via gravity (through hoses) to form the plug.. When this work is complete, the CW Outlet Tunnels will be left in-situ.

3.2.18. A concrete plug will be constructed using a similar technique in the CW Intake Tunnel under the Sea Wall by accessing the tunnel from the Forebay. This plug will prevent water ingress to the landward side of the CW Intake Tunnel.

3.2.19. The landward tunnel infrastructure between the CW Pumphouse, Seal Pit and Turbine Hall may be grout-filled. The seaward extent of the CW Intake Tunnels between the land shafts and the intake / outfall structures are then assumed to be left in-situ and require no further treatment.

Works in the marine environment

3.2.20. The activities in the marine / intertidal environment associated with the Proposed Works comprise:

- installation of the new Active Effluent Discharge Line (AEDL) and the Sewage Treatment Plant Line (STPL) including the provision of a back-up line for each respective system to provide dual redundancy; and
- dismantling of the Cooling Water (CW) Intake Structure to seabed level.

AEDL / STPL Installation

3.2.21. A new AEDL will be installed to enable the Cooling Water Pumps to be turned off and enable the decommissioning of the CW system. This will be implemented by installing a new pipe to carry the effluent from its current discharge point at the entry point to the CW Outfall Tunnel adjacent to the Sea Wall to the CW Outfall. This pipe will be threaded via the existing CW Outfall Tunnel and discharge at the CW Outfall Channel. As detailed optioneering studies are ongoing (see **Chapter 3: Alternatives**), for the purposes of assessment, the AEDL is assumed to extend approximately 220 m beyond the existing CW Outfall along the existing CW Outfall Channel (approximately 400 m from the Sea Wall). An additional back-up pipe will also be threaded, for use in the event of damage to the AEDL. In addition, effluent from the Sewage Treatment Plant will continue to be discharged at the CW Outfall, however a new pipeline will be installed (the STPL), which will be separate to but running parallel with the AEDL pipeline, to carry these effluents to the Severn Estuary via the

existing CW Outfall Channel. An additional back-up pipe will also be installed, for use in the event of damage to the STPL.

3.2.22. A Jack up Barge (JuB), situated at the CW Outfall Channel is required to facilitate the threading of the four pipelines.

3.2.23. It is anticipated that the JuB will remain at one fixed location to complete the works. Each of the four JuB feet is approximately 800 mm in diameter, and thus will impact an area of seabed of approximately 0.5 m^2 per foot and therefore 2 m^2 in total.

3.2.24. **Table 3-1** sets out the working assumptions for these marine works to inform this report.

Table 3-1 AEDL/Sewage Treatment Line installation assumptions

Element	Assumption
Pipeline diameters	Four pipelines of approximately 100 – 150 mm in diameter
Vessel requirements	One jack up barge situated at the CW Outfall Channel
Indicative works duration	Two months

3.2.25. Works in the marine environment are anticipated to be required to implement the AEDL and STPL over a two month period in Q4 2026.

3.2.26. The implementation of these works could necessitate a variation of the existing HPB RSR permit on the basis the final discharge is extended to 220m. A Marine Licence will also be required prior to implementation. It is assumed that the new AEDL and STPL installation:

- Would utilise low tides where practicable;
- Could utilise the use of dive teams (where appropriate) to support the works and inspect work face; and
- Would work largely from within the existing concrete channel and tunnel system to reduce the potential for sediment disturbance.

3.2.27. Upon completion of the Preparations for Quiescence phase, the AEDL and STPL will be made safe and left in-situ, as sediment modelling has concluded that silt will aggregate in the Outfall Channel and bury the lines five years after cooling water flows cease.

Cooling Water Intake Structure Dismantling

3.2.28. As defined in **Table 3-2**, there is approximately 2,500 m^3 of material (concrete and steel), above seabed level, which requires dismantling and disposal. For the purposes of assessment, a 15,000 m^2 working area is assumed around the CW intake structure.

3.2.29. Preparation works for the CW Intake Structure dismantling will involve works to ensure the landward side of the CW system is isolated from the sea. These works include the installation of a new fabricated stop-log gate within the CW Intake Structure, the installation of a concrete plug at a suitable location within the landward side of the CW tunnel, and removal of residual water trapped between these two points. These works will be undertaken within existing infrastructures.

3.2.30. The dismantling of the intake structure is to be completed using a combination of plant, including long reach excavator, working from a JuB (Excavator Barge) using appropriate tooling, such as a hydraulic breaker, demolition jaws, as well as equipment deployed directly on the structure, such as coring, wire saws and supported by manual demolition techniques above and below the tide, to remove the low-level perimeter screen structure and dismantle the Intake Structure to sea bed level.

3.2.31. To give a plausible mix of vessel types, including mooring point for service barge(s), this is assumed to be a Flat-Top Spud Barge, to support a crawler crane (Crane Barge). To consider a worst-case scenario within this assessment, in terms of the seabed footprint interaction area, the values associated with JuB leg dimensions rather than the smaller Flat-Top Spud barge are utilised, as well as anchorage requirements and relocation associated with the Flat-Top Barge are also considered in the assessment. The Crane Barge will provide general lifting to support the demolition work, and the flat-top barge option would provide a potential floating laydown space and a mooring point for visiting service barges and work boats.

3.2.32. Demolished materials arising from the dismantling will be loaded by the long reach excavator and/or crane on to a supporting service barge(s), which will navigate to a suitable port location, such as Avonmouth, for disposal.

3.2.33. A proportion of the structure to be demolished will be retained at the intake location to be used as infill material to effectively close the intakes, preventing sumps being formed in the seabed and generating a seabed level comparable to the surrounding bed levels.

3.2.34. It is anticipated that the Excavator Barge will need to reposition three times over the course of the works, to ensure the excavator is suitably orientated to safely dismantle the intake structure. Each of the four JuB feet is 800 mm in diameter, and thus will impact an area of seabed of approximately 0.5 m^2 per foot and 2 m^2 per position. The total area of seabed impacted by the JuB is estimated to be 6 m^2.

3.2.35. It is anticipated that the Crane Barge (Flat-Top) will need to reposition five times over the course of the works, to ensure the crane is suitably orientated to safely remove dismantled sections of the intake structure. Flat-Top spud legs are less impactful when compared to those of a JuB due to the reduced number per barge, smaller diameters and lower bed penetration depths, however for assessment purposes as a worst case to allow for differing vessels, an area of seabed impact associated with the Crane Barge, makes use of JuB leg dimensions from paragraph 3.2.33 above. The total area of seabed impacted by the Crane Barge is estimated to be 10 m^2.

3.2.36. The Flat-Top Crane Barge working position would be primarily secured in position via spud legs, but may be supplemented by anchors (2x) and mooring ropes/chains placed on the bed. For the purposes of assessment, approximately 20 ten-tonne anchor deployments (4 m^2 per deployment) will be required in the Works Area, equating to approximately 80 m^2 of potential disturbance from anchor placement to the seabed. The anchors will impact the immediate area of anchor placement and movement of mooring ropes/chains close to the bed. As each Crane Barge working position is fixed, there is expected to be minimal bed impact from anchor ropes moving.

3.2.37. Works in the marine environment are anticipated to be required to dismantle the CW Intake Structure for a period of approximately four months in 2029 (see **Graphic 3-3**).

3.2.38. Divers may be required to support below tide elements of the structure demolition, as well as being deployed to inspect the work face before and after the works. It is expected that a bathymetric survey will be undertaken post works (along with pre-works survey) that covers all areas at and

surrounding the structure to allow assessment of works completed, but also to allow updating of navigational charts.

3.2.39. **Table 3-2** sets out the working assumptions for these marine works to inform this report.

Table 3-2 Cooling Water Intake dismantling assumptions

Item	Assumption
Insitu Material quantities above seabed (m^3) (85% Concrete 15% Steel)	Total: 2,500 Concrete: 2,125 Steel: 375
Works Area Size (m^2)	~15,000 m^2 / Radius ~70 m
Vessel type and number	One Jack up Barge (JuB) One Crane Barge (JuB or Flat-Top Barge) One Safety Boat One Tug / Multicat + Support from visiting / temporary moored hopper and flattop barges as service barges
Plant and equipment	One Long Reach Excavator (multiple attachments - bucket, shears, hydraulic breaker) One Crawler Crane One Wire Saw/Concrete Saw + coring equipment Burning equipment One Dive Team Temporary seabed anchors Generators / Welfare
Number of movements	Four movements for two working barges to mobilise and demobilise from port to the Works Area and back. Assume 16 service barge movements.
Anchorage / bed disturbance	Excavator Barge to make three moves. (c.800mm Ø x4 for each position) • Crane Barge to make five moves: • JuB Option = c.800mm Ø x4 for each position • Flat-top Barge Option = c.610mmØ x2 for each position, 20x anchor + rope/chain position deployments. Assumes 10t anchors – c. 3.8x2.4 m (l x w)
Indicative works duration	4 months Proposed 10-hour day (6 hour operational in day time hours)
Port	Avonmouth (Note: Combwich Wharf excluded)

Safestore Construction

3.2.40. The Safestore will have a 100-year design life and is designed to be robust, weatherproof, and secure against intrusion for the duration of the Quiescence phase.

3.2.41. The height and footprint of the Safestore is subject to further consideration. **Figure 3.1: Safestore Location** shows the current maximum dimensions of the Safestore for the options being considered. This footprint includes the majority of the existing reactor building. This houses the two reactors, the High Activity Debris Vaults (HADV) and also includes the cooling ponds and existing Active Effluent Treatment Plant (AETP). The height of the Safestore is anticipated to be no higher than the existing reactor building which is approximately 66.5 m above existing ground-level.

3.2.42. The Safestore construction method will depend on the findings of the ongoing options study that will help to define how much of the existing reactor hall structure can be re-utilised as part of the Safestore. It is likely that a series of heavy lift cranes and other engineering equipment will be required to construct the Safestore.

Enabling Projects

3.2.43. To assist the Proposed Works, the following activities will also be required:

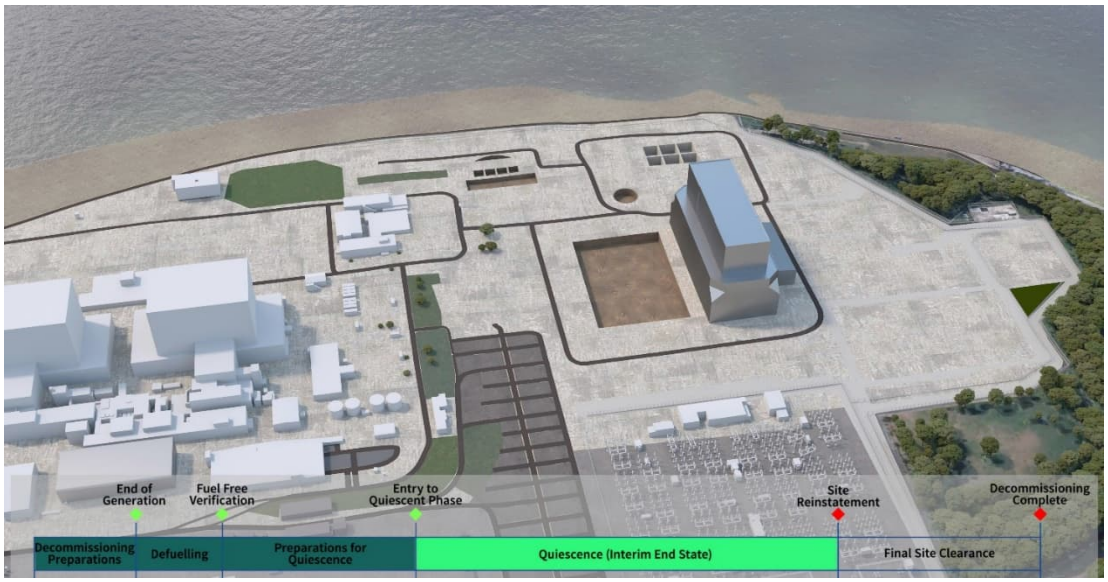
- Creation of necessary compound and laydown areas;
- Construction/installation of a Decommissioning Site Incoming Electrical Supply; and
- Creation of a Decommissioning Site Electrical Distribution System.

3.2.44. Works required to identify the location of these activities and the method for how they will be implemented is ongoing.

QUIESCENCE PHASE

3.2.45. Following completion of the Preparations for Quiescence phase, it is estimated the Site will remain in a mainly quiescent state for approximately 70 years. This is to allow for further decay of radioactive plant and materials housed in the Safestore prior to Final Site Clearance to reduce the radioactive hazard when undertaking site clearance activities. The illustrative site layout during the Quiescence phase is shown on **Graphic 3-8**. The only structure remaining throughout this phase will be the Safestore and the annex housing the AETP. It is assumed that none of the Works Area will be released from its Nuclear Site License until after Final Site Clearance, and it is assumed that the existing fence lines on-site will be retained and monitored.

Graphic 3-8 Site layout during the Quiescence period



3.2.46. Other than routine inspections and minor maintenance as necessary, there is minimal activity anticipated during the Quiescence phase. Should refurbishment of the Safestore cladding be required, there may be a need for a small re-mobilisation to site to undertake the works. This may involve the use of existing concrete slabs as laydown area for materials and portacabins to provide contractor facilities to manage the works. It would also be likely to require the use of scaffolding on the Safestore. Waste from any required recladding of the Reactor Building will be removed from the Site and will be recycled where possible.

3.2.47. Equipment will have been installed during the Preparations for Quiescence phase to enable remote monitoring of the Reactor Buildings and contents to ensure that no unacceptable conditions can occur without knowledge of the site operator. Alarm facilities will be provided so that attention is drawn to any circumstances that may require action. This will enable an appropriate and timely response to be made to any unusual occurrences.

3.2.48. It is unlikely that continuous monitoring by personnel on site will be required for the whole of the Quiescence phase. It is proposed that key parameters within the Safestore will be monitored from a remote location, supplemented by periodic visits by trained and competent personnel.

3.2.49. The inspection regime has yet to be finalised but would include external inspections that will identify damage to building fabric, such as the loss of cladding. Other building and site inspections will include:

- The integrity of site fences;
- Inspection of drains for blockages;
- Inspection of voids left in-situ through quiescence; and
- Inspection of drainage sumps.

3.2.50. These visits would take place both on a planned basis and following severe weather events, with a purpose of seeking to confirm that the Site remained safe and in a good state of repair.

3.2.51. It will be necessary to undertake grounds maintenance on the Site. As with current practice, the area around the security fences will be managed and hard surfaced areas and roadways will be

maintained on an ‘as required’ basis. The clearing of ditches and drains on-site will be undertaken as required. It is intended that vegetation within the site boundary will be maintained to prevent it becoming overgrown.

FINAL SITE CLEARANCE

3.2.52. The purpose of this phase is to remove the Safestore from the Site, including all radioactive or other hazardous materials and wastes, for the purpose of de-licensing the Works Area.

3.2.53. This includes the following activities:

- Site re-instatement;
- Reactor Building preparatory works and dismantling;
- Active area deplanting and reactor dismantling;
- Safestore dismantling and demolition; and
- Site remediation and de-licensing of the Site

Site re-instatement

3.2.54. Towards the end of the Quiescence phase, there will be works referred to as site re-instatement to re-establish a site presence and prepare for works during the Final Site Clearance phase. This will include the construction of a Decommissioning Waste Management Centre (DWMC). Whilst the design and location of these buildings will be designed and confirmed closer to the time, an indication of where the DWMC is likely to be located is shown on **Graphic 3-9**. It is anticipated that the DWMC will require consent under the Town and Country Planning Act (or equivalent) prior to their construction. More information about the DWMC is provided in the Waste and Materials Management section below.

3.2.55. Other facilities and work required as part of site re-instatement may include the following:

- upgrading/modification of installed security systems and site access control;
- installation and/or upgrade of power, telecommunications, water, drainage and sewage systems to the Site to support the enlarged workforce and activities to be carried out during Final Site Clearance;
- refurbishment/extension of site roads and car parks;
- construction of offices and welfare facilities;
- construction of workshops, stores, laboratories etc.; and
- construction of change facilities and controlled access points.

Reactor Building and contents dismantling

3.2.56. Safestore building preparatory works marks the formal start of Final Site Clearance. These activities include works to ease access into the Safestore, install services and internal modifications to facilitate active area deplanting and reactor dismantling activities.

3.2.57. At all times, all necessary effort and attention will be placed on containing radioactivity, reducing worker radiation exposure, monitoring radioactive materials and appropriately packaging radioactive wastes. The deplanting of radioactive contaminated structures will be completed in accordance with the relevant regulatory guidance and controls.

3.2.58. Following preparatory works, remaining active plant, including the reactor pressure vessels will be deplanted with methodologies in-line with those described for activities during the Preparations for Quiescence phase. Waste from these activities will be processed and packaged via the DWMC.

When suitable access is available, works will commence to retrieve operational wastes from the High Activity Debris Vaults (HADVs). These will also be processed in the DWMC.

3.2.59. When all potentially radiological contamination is removed from the Safestore, it will be demolished using conventional methods to ground level and any voids will be filled with suitable material obtained from the demolition activities.

Site remediation and de-licensing of the Site

3.2.60. For the purposes of this assessment, it is assumed that there will be a future use of the Site and thus it will be left as brownfield land ready for re-development. It is assumed that there is no requirement to remove site infrastructure such as car parks, hardstanding, roads and water mains as this may be of use to a future user of the Site. Contaminated land on the Site will be managed with a Land Quality plan which, in consultation with the Environment Agency, will consign whether ground remediation is required prior to de-licensing of the Site or not.

3.2.61. Given the extensive timeframe, site enhancement measures (e.g. artificial establishment of vegetation) have not yet been considered, however, this will be determined at the appropriate time. It is also recognised that the surrounding environment could change by the time Final Site Clearance commences and appropriate management should therefore be undertaken at that stage.

Graphic 3-9 Illustration of HPB site at the peak of Final Site Clearance activities

DECONSTRUCTION METHODS AND MANAGEMENT

Hours of work

3.2.62. HPB has operated a 24-hours a day, seven days a week operational working pattern through operations and subsequently defueling. During the Preparations for Quiescence phase, working hours will change to represent the different types and nature of ongoing activities on the Site. Whilst some aspects of active area deplanting may necessitate the need for maintaining shift working, the majority of the Proposed Works, such as works in the marine environment, conventional deplanting and deconstruction and Safestore construction, will be limited to normal working hours between 07:30 and 18:00 hours Monday to Friday. There may be occasional infrequent exceptions to when the working day may be extended in order to complete specific items of work safely. During the

Preparations for Quiescence phase, it is anticipated that security personnel will remain on site 24 hours a day, seven days a week, using shift arrangements.

3.2.63. During the Quiescence phase, works on site would be infrequent. However, it is anticipated that any site monitoring or maintenance works would also be focused within normal working hours. During Final Site Clearance, it is likely the majority of works would be focused during normal working hours similar to the Preparations for Quiescence phase, although some shift working may be required.

Site lighting

3.2.64. The existing night-time illumination within the Site consists mainly of internal lights within the transparently clad parts of the Reactor Building and Turbine Hall, together with low level 'street' lights. No additional car parking is proposed as part of the Proposed Works beyond the existing provision at the Site. During the Preparation for Quiescence phase, additional task specific lighting may be necessary at the start and end of the working day during the winter months. Use of such lighting will be at the discretion of the relevant Site Supervisor, to ensure the provision of a safe working environment. However, compared to the current night-time illumination at the Site, any visual difference from this temporary additional lighting will be negligible. . The existing security lighting and internal roadway will be retained through the Preparations for Quiescence phase.

3.2.65. It is anticipated that lighting requirements on site will reduce during the Quiescence phase before increasing during Final Site Clearance in areas around the Safestore, to levels similar to those seen during the Preparations for Quiescence phase. The modification of the reactor building into the Safestore will use opaque cladding, which will limit the visibility of internal lighting.

Transportation of materials and waste

Preparations for Quiescence

3.2.66. It is assumed that all materials and wastes generated on land will be transported to and from the Site via road. Waste arisings from the dismantling of the Cooling Water Intake Structure will be taken via barge to an appropriate port location (assumed for the purposes of assessment to be Avonmouth). Whilst it is not possible to rule out the need for Abnormal Indivisible Loads (AILs), it is not expected to be commonplace throughout the decommissioning lifecycle. LLW and Operational High Activity Waste (HAW) consigned off-site will be transported off-site utilising processes already embedded during station operation and in-line with the requirements of the Radioactive Materials (Road Transport) Act 1991 (as amended).

3.2.67. There will be a requirement for some materials to be imported during the Preparations for Quiescence phase, such as for the construction of the DWPF and OWPF, the conversion of the Reactor Building into a Safestore, concrete for the sealing of the CW system, site operational needs, plant and equipment and materials required for processing and packaging wastes. Assuming that 10 m^3 or 23 tonnes of material can be transported per lorry, these volumes will result in a total of approximately 13,500 Heavy Goods Vehicle (HGV) loads (27,000 total HGV movements) across the Preparations for Quiescence phase.

3.2.68. During the peak year of the Preparations for Quiescence phase (years 9 and 10), the Site is expected to average up to 30 HGV movements per day (two-way movements) on average across a working week (Monday - Friday).

Preparations for Quiescence

3.2.69. During the Quiescence phase there will be negligible traffic associated with the Site. The only regular traffic movements will relate to security or inspections personnel, with visits for maintenance purposes as and when required.

Final Site Clearance

3.2.70. For the purposes of assessment, it is assumed that all waste generated during Final Site Clearance will also be transported by road. It is anticipated that the number of HGV vehicle movements required during the peak year during this phase to implement the Final Site Clearance activities will be less than the number required during the Preparations for Quiescence.

3.3 CONSIDERATION OF ALTERNATIVES

3.3.1. This section provides an outline of the main alternatives relating to the Proposed Works studied by the Applicant where relevant to considering potential effects on the National Site Network. Further details on alternatives considered as part of the Proposed Works are provided in **Chapter 3: Alternatives** of the **ES**.

ACTIVE EFFLUENT DISCHARGE

3.3.2. As outlined in **Section 3.2** active liquid effluent from HPB and HPA discharge into the sea via the Cooling Water (CW) Outfall where the active effluent is diluted and mixed with cooling water from the CW system.

3.3.3. The current radioactive substances effluent discharge permit (EPR/CB3735DT), via the discharge point adjacent to the seawall has no flow requirement. The permit discharge is however limited by activity and particle size.

3.3.4. The primary function of the CW system, to provide cooling to the turbine condensers, will no longer be relevant at the end of generation. There are however several secondary functions that are still required during defueling. Once these secondary functions of the CW system are no longer required, new arrangements to ensure liquid effluents are discharged to sea will be required to avoid disproportionate costs and carbon emissions as a result of running and maintaining these pumps, as well as allowing decommissioning of the CW System and Turbine Hall.

3.3.5. Decommissioning activities onshore will require continued discharge of active effluents throughout the Preparations for Quiescence phase, new discharge arrangements, namely the new Active Effluent Discharge Line (AEDL) are required to be installed prior to the turning off of the CW Pumps to enable CW System decommissioning.

3.3.6. Detailed optioneering studies, such as dispersion modelling are ongoing, with a view to define the best Available Techniques for delivering the AEDL. To date, these studies have considered initial concept options for pump requirements, pipe materials, routing, mounting and supports, non-return system arrangements and pipe protection against weighted evaluation criteria such as nuclear, environmental and industrial safety impact, effect on discharge, resilience, constructability, cost and human factors.

3.3.7. The screening of strategic options to install, operate and decommission a solution to discharge active effluents are considered in **Table 3-3**.

Table 3-3 Screening of active effluent discharge options

Option	Consider for detailed optioneering?	Justification
Installation (A)		
A1 – Existing Arrangement (at least Main Cooling Water Pump (MCWP) in service during discharges)	No	Option A1 prevents the deplanting of Main CW Pumphouse and Turbine Hall, as these structures are required to operate the MCWP. To avoid issues associated with silt accumulation within the Forebay, one operating MCWP is not sufficient and therefore two MCWPs in constant operation would be required. Continued operation of the CW System would have a negative impact on ecological features in the Severn Estuary. Significant energy costs associated with the continued operation of the CW System.
A2 - Run one or more Reactor Cooling Water Pumps (RCWP) with no MCWP running.	No	Option A2 would enable some of the CW Pumphouse and areas of the Turbine Hall to be deplanted. As with Option A1, to avoid silt accumulation in the Forebay, 2 MCWPs in continuous operation would be required. Without the continuous operation of the MCWPs, it is not possible to operate RCWPs, as they are significantly smaller pumps. Due to aggregation of silt in the Forebay resulting from cessation of the MCWPs, use of the RCWPs would therefore be prevented.
A3 - Install Alternative AEDL through existing CW outlet system to the Severn Estuary, to the existing discharge location.	Yes	Option A3 facilitates the deplanting of the CW System whilst maintaining active effluent discharge functionality for the duration of the Preparations for Quiescence phase. This method has been installed at other decommissioning sites and has proved to be a viable and effective solution.
A4 - Install Alternative AEDL through existing CW outlet system to the Severn Estuary, with a maximum 220 m extension.	Yes	Option A4 also facilitates the deplanting of the CW System whilst maintaining active effluent discharge functionality for the duration of the Preparations for Quiescence phase. The requirement for an extension of the AEDL will be determined by dispersion modelling completed to inform detailed design.
A5 - Install Alternative AEDL route overland to discharge point.	No	Option A5 may present easier installation / maintenance / inspection than Option A3/A4, however would require additional permissions to cross public land. The AEDL would also be visible on the foreshore for the duration of the Proposed Works, which presents an increased security risk.
A6 - Process discharges offsite (i.e. no new line). Bowser and process offsite.	No	Option A6 is not considered to be BAT to process active effluent discharges for the duration of the Preparations for Quiescence phase, due to additional transportation and environmental risks (i.e. spillage during transit). Processing active effluent at an alternative site still results in discharges to the environment.

Option	Consider for detailed optioneering?	Justification
A7 - Install infrastructure to utilise HPA discharge route via HPA Active Effluent Treatment Plant (AETP).	No	Option A7 is not considered to be feasible as the HPA AETP does not have capacity to process active effluents arising during the Proposed Works and is anticipated to be deplanted before the requirement for processing active effluent from the Proposed Works ceases (at the end of the Preparations for Quiescence phase).
A8 - Install infrastructure to utilise HPA discharge route via their MAETP using bowser/tanker.	No	Option A8 is not considered to be feasible as the HPA AETP does not have capacity to process active effluents arising during the Proposed Works and is anticipated to be deplanted before the requirement for processing active effluent from the Proposed Works ceases (at the end of the Preparations for Quiescence phase). There is also additional transportation and environmental risks, such as spillage during transit.
Operation (B)		
B1 – Continuation of active effluent discharge under the existing RSR Permit (EPR/CB3735DT).	Yes	To facilitate the discharge of active effluent via the preferred option for AEDL design (Option A3), the continuation of existing discharge arrangements are required. It is anticipated that this will be conducted under the existing RSR Permit (EPR/CB3735DT).
Decommissioning (C)		
C1 – Remove AEDL	No	A preliminary optioneering study to model the feasibility of the existing CW Outfall Channel has concluded that the channel is anticipated to be filled with aggregations of silt after five years, post the cessation of the CW system and associated CW flows. As the Preparations for Quiescence phase is anticipated to be approximately 13 years. Extensive intrusive works would be required to clear the CW Outfall Channel in order to access and remove the AEDL.
C2 – Make safe and leave AEDL in-situ	Yes	A preliminary optioneering study to model the feasibility of the existing CW Outfall Channel has concluded that the channel is anticipated to be filled with aggregations of silt after five years, post the cessation of the CW system and associated CW flows. To minimise sediment disturbance and intrusive works in the existing Outfall Channel, the preferred option is to make the AEDL safe from the landward side and leave in-situ.

3.3.8. The preferred concept design (Option A3/A4) routes the AEDL via the existing CW Outfall Culvert, using weighted clamps to maintain the pipe's position in the outfall channel, to be implemented by threading the pipe between the landward side and the final new AEDL outfall location by using a Jack up Barge in the CW Outfall Channel. For the purpose of this report, a ~220 m extension beyond the CW Outfall Culvert to the end of outfall channel into the Severn Estuary is assumed to

be required as the reasonable worst-case, due to the increased potential for work in the intertidal environment.

3.3.9. The installation of the AEDL (Option A3/A4), within the existing CW Outfall Channel facilitates the continuation of active effluent discharge under the existing RSR Permit (Option B1).

3.3.10. The preferred option to decommission the AEDL (Option C2) proposes to make the pipeline safe and leave it in-situ. The existing CW Outfall Channel is anticipated to be filled with silt five years after the cessation of the CW System operations and associated CW flows. As the AEDL will be buried at the end of Preparations for Quiescence phase (approximately 13 years), it is considered to have overall significantly less environmental effects than Option C1, as this would require the deployment of plant and equipment to remove the accumulated silt and sediment from the CW Outfall Channel, to access and remove the AEDL.

COOLING WATER INTAKE STRUCTURE DISMANTLING

3.3.11. The Cooling Water Intake Structure is approximately 540 m from the HPB frontage and has drawn seawater to supply HPA and HPB since the 1960s as part of the required operational functioning of the CW system. The CW Intake Structure is now only used by HPB; its maintenance and eventual decommissioning falls within the responsibility of the Licensee.

3.3.12. The CW Intake Structure is showing signs of as cooling water will no longer be required post generation and defueling, the CW pumps will be turned off during early part of the Preparation for Quiescence phase to facilitate the decommissioning of the CW system and therefore the CW Intake Structure will become redundant.

3.3.13. The screening of strategic options to dismantle the CW Intake Structure are considered in **Table 3-4**.

Table 3-4 Screening of CW Intake Structure Dismantling options

Option	Consider for detailed optioneering?	Justification
D1 – Remove CW Intake entire structure (inclusive of sub-seabed elements)	N	Option D1 would require extensive intrusive works into the seabed to remove the sub-seabed elements of CW Intake Structure. This would result in extensive impacts to the seabed and marine features within the vicinity of the works, requiring additional plant and equipment and a longer programme to complete, in comparison to Option D4. As the CW intake tunnel which connects the CW Intake Structure to the landward elements of the CW System is to be left in-situ, the removal of the CW Intake Structure below seabed level would not provide additional benefit.
D2 – Leave the CW Intake Structure in-situ	N	Option D2 will not be considered in detailed optioneering as the CW Intake Structure is part of the CW system associated with the Site, and is therefore the Applicant's responsibility to safely dismantle the structure during the Proposed Works. There will be limited activity on the Site during the Quiescence phase and if the CW Intake Structure continues to degrade, it could become a hazard if not suitably monitored and maintained. In addition, the CW Intake Structure is identified as a navigational

Option	Consider for detailed optioneering?	Justification
		hazard on the relevant maritime charts and will continue to be until the structure is removed and made safe. While the CW Intake Structure has been recorded as a structure utilised by transient intertidal birds, and the function of which is lost if the structure is removed, it will degrade if left in-situ and its function for the transient intertidal birds will change / diminish in time.
D3 – Use of controlled explosives to dismantle the CW Intake Structure	N	Option D3 is excluded from detailed optioneering due to the potentially significant risk of impacting noise-sensitive marine species within the vicinity of the Proposed Works and a significantly reduced ability to recover material for suitable processing and disposal when compared to Option D4.
D4 – Remove the CW Intake Structure to seabed level	Y	Option D4 will be considered in detailed optioneering, as it balances the need to remove the CW Intake Structure, which mitigates the health and safety risk in the context of maritime navigation, whilst employing appropriate methods of work to minimise the extent and duration of impacts to the seabed and ecological features within the vicinity of the Proposed Works.

3.3.14. The dismantling of the CW Intake Structure to seabed level (Option D4), using conventional methods as described above in **Section 3.2**, removes the infrastructure from the marine environment, whilst limiting sediment disturbance that would occur if controlled explosives or intrusive works into the seabed to remove sub-seabed level elements of the structure were required. Similarly, prioritising the use of methods which cut larger sections of the structure for removal, over 'breaking' the structure, which would result in an increased volume of fine material entering the water column, increasing turbidity and potentially impacting a greater extent of seabed and benthic habitats.

4 HRA SCREENING

4.1 IDENTIFICATION OF POTENTIAL EFFECTS ON THE NATIONAL SITE NETWORK

NATIONAL SITE NETWORK SITES INCLUDED FOR SCREENING

Overview

4.1.1. All National Site Network sites considered within this HRA (SACs, SPAs, Sites of Community Importance (SCI), possible SACs (pSACs), candidate SACs (cSACs), potential SPAs (pSPAs) or Ramsar Sites) have specific 'qualifying features' associated with their designation. These 'qualifying features' (habitats, mosaics of habitats, species or assemblage of species, and combinations of these) are the reasons for which a particular site is to be protected and managed for conservation purposes.

4.1.2. For SPAs and pSPAs, the qualifying features are the birds for which the SPA is classified, under either:

- Article 4(1), listing rare and vulnerable species, species in danger of extinction or requiring particular attention because of their habitat needs, listed in Annex 1 of the Birds Directive[4;] or
- Article 4(2), listing regularly occurring migratory species (e.g. on passage or over-wintering or an internationally important assemblage of birds) not listed in Annex 1 of the Birds Directive[4].

4.1.3. For SACs, pSACs and cSACs, qualifying features are the habitats listed in Annex I of the Habitats Directive, and/or the species listed in Annex II of the Habitats Directive[3]. SCIs are sites that were adopted by the European Commission for designation as SACs before the end of the Transition Period following the UK's exit from the EU, but not yet formally designated.

4.1.4. For Ramsar sites, qualifying features are the list of Criteria established within the Convention on Wetlands of International Importance (the Ramsar Convention)[5]. All receptors that are qualifying features of European Sites (Natura 2000/Ramsar Sites) (or support such features), and which may potentially be affected by the Proposed Works have been considered within this screening process.

Species Zones of Influence and Corresponding Study Area

4.1.5. Sites from the National Site Network were included for either their physical proximity to the Works Area or linkage by way of mobile fauna that are qualifying features and/or associated functionally linked habitat that could be of importance to mobile qualifying features.

4.1.6. All terrestrial and marine sites from the National Site Network featuring qualifying habitats that could be potentially affected were included if they fell within 10 km of the Works Area (**Figure 4.1**). This search area also applies for non-migratory freshwater species, e.g. bullhead; however no pathways of effect are anticipated for this feature given the lack of connectivity.

4.1.7. Sites from the National Site Network that have qualifying features that are highly mobile species, such as bats and otter, are included where they are within 10 km of the Works Area. Although bats and otter can disperse over greater distances, significant effects on populations of these taxa beyond 10km are unlikely. However, in the event a significant effect is predicted on a site designated for these taxa that is within 10km, the extent of the search area and assessment is revisited. There is, for example, one site within 10 km of the Works Area that has otter as a

qualifying feature and in the event that a significant effect on that site is predicted, the screening assessment is extended to other sites with the same qualifying feature that are over 10 km from the Works Area, to reflect the potential dispersal distance of otter (**TABLE 4-1**).

4.1.8. Sites from the National Site Network featuring qualifying ornithological interests within 20 km of the Works Area (**Figure 4.1**) were identified (see Chapter 5), and Conservation Objectives for SPAs and Information Sheets for Ramsar Sites were also checked to identify terrestrial and marine birds known to use the coastal and open water environments of the Severn Estuary (auks, wintering divers, gulls and cormorants, wintering grebes, wintering sea-ducks and breeding terns). Linkages were determined based on an understanding of potential connectivity with foraging sites, foraging range, and movement between nesting colonies or roosting sites and foraging sites.

4.1.9. Mobile designated features of the National Site Network (i.e. intertidal waders, wildfowl and seabirds, fish or marine mammals) may interact with the Proposed Works when remote from their relevant National Site Network site. In order to identify sites where interactions could occur out with the defined boundaries of European Sites, the following approaches were adopted:

- Passage and over-wintering concentrations of non-breeding bird qualifying features (passage and over-wintering populations) and breeding bird qualifying features were only included if their designated site or any functionally-linked habitat overlapped with any aspect of the Proposed Works Zone of Influence (ZoI). If there is no overlap, then the species have not been included for assessment.
- The distance from the nearest site from the National Site Network with breeding seabird colonies is over 100 km from the Proposed Works (Skomer, Skokholm and the Seas off Pembrokeshire SPA). The ZoI of the Proposed Works, has not been found to support breeding seabird species, typically associated with open water and with sites from the National Site Network, with any regularity during the year (e.g. gannet, puffin, storm petrel, Manx shearwater). Therefore, functional linkage with seabirds associated with National Site Network sites supporting breeding colonies is considered unlikely and therefore these sites have been screened out from further consideration.
- For cetaceans, the study area varies depending on the species, and their tendency to range outwith any site for which they may be a designated feature. Guidance from NRW[15] suggests the use of Marine Mammal Management Units (MMMUs) for screening, given the highly mobile nature of the species feature of SACs and functional linkage to areas outside of the SAC boundaries. It is worth noting that MMMUs are very large; in this case the entire Celtic and Irish Sea. Consequently, MMMUs are used as appropriate for contextualising population-level effects, with knowledge of individual species behaviour used to understand the likely occurrence of ranging individuals in the Project Area and consequent LSE.
- For grey seal, the study area uses the OSPAR Region III interim MU, and, as with cetaceans, combined with an understanding of the species generally present in the vicinity of the Proposed

[15] Natural Resources Wales (2023) NRW's Position on Assessing Behavioural Disturbance of Harbour Porpoise (*Phocoena phocoena*) from underwater noise Position statement. Reference number: PS017

Works. For harbour seal, the study area uses the seal management unit boundaries 12. South West, and 13. Wales.

- For migratory fish, all SAC designated sites which include Annex II listed fish species within the south-west region of England were included (based on MMO 2016[16] & 2020[17]), due to the limited specific understanding of fish movements, ensuring potential for interaction with the Proposed Works is captured. SAC designated sites for migratory fish were also considered from the south and east coast of Ireland based on the limited understanding of fish movements. This has included designated rivers (such as the rivers Axe, Avon, Itchen and Plymouth Sound) which do not discharge directly into the Severn Estuary. Although these rivers discharge elsewhere, e.g. into the English Channel, the behaviour of migratory fish at sea is not fully understood, and it is believed that they are drawn to many sources of freshwater on their migration routes. On that basis, potential connectivity cannot be ruled out, and they have been considered within this HRA process.

Table 4-1 Summary of specific Zones of Influence and source information used to identify potential effects on European Sites

Species/Taxa	Approximate ZoI	Source
Intertidal birds	500 m	Cutts, Hemingway & Spencer. (2013)[18]
Habitats	HPB Indicative Dismantling Works Area and a buffer of 50m for direct effects, and 10km for indirect effects.	
Barbastelle bat	6 km (Core Sustenance Zone[19])	Collins (ed) (2023)[20]
Bechstein's bat	1 km (Core Sustenance Zone) [21]	

[16] MMO (2016) Pre-Screening Report for the North-East, North-West, South-East and South-West Marine Plans Habitats Regulations Assessments. A report produced for the Marine Management Organisation, pp 2. MMO Project No: 19768.
[17] MMO (2020) Habitats Regulations Assessment for the North East, North West, South East and South West Marine Plans: Screening Report and Appropriate Assessment Information Report. A report produced for the Marine Management Organisation, pp 232. MMO Project No: 1188.
[18] Cutts, Hemingway & Spencer. (2013). Waterbird Disturbance Mitigation Toolkit: Informing Estuarine Planning & Construction Projects. Version 3.2. University of Hull
[19] Core Sustenance Zones are the areas where bats are likely to be most susceptible to significant effects and not the limit of the ZoI (bats). Sites within 10km that have bats as a qualifying feature are included in the screening assessment. In the event a significant effect is predicted on one of these sites, the extent of the search area and assessment is revisited.
[20] Collins, J. (ed.). (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines. (4th Edition). The Bat Conservation Trust, London.
[21] Core Sustenance Zones are the areas where bats are likely to be most susceptible to significant effects and not the limit of the ZoI (bats). Sites within 10km that have bats as a qualifying feature are included in the screening assessment. In the event a significant effect is predicted on one of these sites, the extent of the search area and assessment is revisited.

Species/Taxa	Approximate ZoI	Source
Otter	32 km (dispersal distance)[22]	NatureScot[23]
Grey seal	OSPAR Region III area (interim management unit)	NRW[24]
Common seal	South West and Wales MU	Special Committee on Seals (2022)[25]
Cetaceans	Harbour porpoise – Celtic and Irish Seas Management Unit (MU) Bottlenose dolphin – Offshore Channel, Celtic Sea & South West England MU and Irish Sea MU	NRW[24] IAMMWG (2023)[26]
Migratory Fish species	All sites which include Atlantic salmon, sea lamprey, Allis shad (Alosa alosa) and Twaite shad within the southwest region and south and east coast of Ireland.	MMO (2020)[27] JNCC (2022)[28]

Consultation

4.1.10. Following submission of the Scoping Report, a Pre-Application Opinion was provided by the ONR on 7 December 2022. Although not specifically in relation to the HRA Process, the key points from a biodiversity perspective have been considered here, as applicable.

[22] Although otter disperse to 32 km and in some cases greater distances, significant effects on otter populations beyond 10km are unlikely. In the event a significant effect is predicted on a site designated for otter that is within 10km, the extent of the search area and assessment is revisited.
[23] NatureScot (2024). Otter. Online at: https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/otter#:~:text=Otters%20that%20live%20in%20freshwater,including%20man%2Dmade%20ones).
[24] NRW. (2022). NRW's position on the use of Marine Mammal Management Units for screening and assessment in Habitats Regulations Assessments for Special Areas of Conservation with marine mammal features. PS0006 MMMUs in HRA Position statement May22
[25] Special Committee on Seals. (2022). Scientific Advice on Matters Related to the Management of Seal Populations. Available online: https://www.smru.st-andrews.ac.uk/files/2023/09/SCOS-2022.pdf (Accessed November 2024)
[26] Inter-Agency Marine Mammal Working Group (IAMMWG). (2023). Review of Management Unit boundaries for cetaceans in UK waters. JNCC Report 734, JNCC, Peterborough, ISSN 0963-8091
[27] MMO (2020) MMO1188: Habitats Regulations Assessment for the North East, North West, South East and South West Marine Plans: Screening Report and Appropriate Assessment Information Report. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/857273/AAIR_final.pdf. (Accessed December 2024)
[28] JNCC (2022) Species List. Available online at: https://sac.jncc.gov.uk/species/ (Accessed December 2024)

4.1.11. Technical engagement sessions have been held with the ONR (August, October, November 2024) Natural England (July, September and November 2024), Natural Resources Wales (November 2024) and the MMO (December 2024). The purpose of these sessions has been to discuss the scope, approach and evidence base defined in this HRA report and to identify potential receptors and pathways for effect.

4.1.12. Natural England provided comments on a draft of HRA Stage 1 Screening in August 2024. Natural England disagreed with the screening conclusion that HRA Stage 2 Appropriate Assessment was not required on the basis that it was considered that insufficient information had been provided to conclude no potential LSE in the absence of mitigation.

4.1.13. The Applicant has therefore updated this HRA report, taking account of comments raised by Natural England and the ONR, to include:

- Further detail in relation to the marine works assumptions;
- Updated underwater noise assessment;
- Updated baseline verification survey results; and
- Updated HPC ornithology data.

Sites from the National Site Network Sites Screened into the Assessment

4.1.14. There are a number of sites from the National Site Network where qualifying features (including breeding seabirds, fish or marine mammals) may interact with the Proposed Works.

4.1.15. When considering the effects of the Proposed Works on National Site Network sites, consideration has been given to the effects on qualifying interest features using terrestrial or marine habitats out with the boundaries of the site as well as within them. Such habitats can be classified as Functionally Linked Land (FLL). FLL in this context is defined as:

"*Areas of land or sea outside of the boundary of a European Site that may be important ecologically in supporting the populations for which the European Site has been designated or classified. Occasionally impacts to such habitats can have a significant effect upon the species interest of such sites, where these habitats are considered to be functionally linked to the site*"[29].

4.1.16. Details of the National Site Network sites considered for assessment and their qualifying features are listed in **Table 4-2.** The distances provided are from the closest point of the Works Area boundary. Conservation objectives for each of the sites identified are outlined in **Appendix A** of this Screening Report**.**

[29] Natural England (2016). Functional linkage: How areas that are functionally linked to European Sites have been considered when they may be affected by plans and projects - a review of authoritative decisions. Natural England Commissioned Report NECR207, first published 29 February 2016.

Table 4-2 National Site Network sites within the Study Area

Site Name	Approx. distance from the Works Area	Qualifying features
Severn Estuary SPA	0km (N, E, S)	Annex 1 species: ▪ Non-breeding/over-wintering ▪ Bewick's swan (*Cygnus columbianus bewickii*) ▪ Gadwall (*Anas Strepera*) ▪ White-fronted goose (*Anser albifrons albifrons*) ▪ Dunlin (*Calidris alpina alpina*) ▪ Shelduck (*Tadorna tadorna*) ▪ Redshank (*Tringa totanus*) ▪ Waterbird assemblage
Severn Estuary Ramsar	0km (N, E, S)	Estuaries including the following Annex I habitats: ▪ H110 Sandbanks which are slightly covered by seawater all the time ▪ H1130 Estuaries ▪ H1140 Mudflats and sandflats not covered by seawater at low tide ▪ H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Assemblage of migratory fish species: ▪ Salmon (*Salmo salar*), ▪ Sea trout (*S. trutta*), ▪ Sea lamprey (*Petromyzon marinus*), ▪ River lamprey (*Lampetra fluviatilis*), ▪ Allis shad (*Alosa alosa*), ▪ Twaite shad *(A. fallax*), ▪ and European eel (*Anguilla Anguilla*).

Site Name	Approx. distance from the Works Area	Qualifying features
		Ramsar criterion 5 Assemblages of international importance: Species with peak counts in winter 70,919 waterfowl (5 year peak mean 1998/99-2002/2003). ▪ Ramsar criterion 6 Species/populations occurring at levels of international importance. ▪ Species with peak counts in winter: ▪ Bewick's swan (*Cygnus columbianus bewickii*) ▪ Gadwall (*Anas Strepera*) ▪ White-fronted goose (*Anser albifrons albifrons*) ▪ Dunlin (*Calidris alpina alpina*) ▪ Shelduck (*Tadorna tadorna*) ▪ Redshank (*Tringa totanus*) Species/populations identified subsequent to designation for possible future consideration under criterion 6 Species regularly supported during the breeding season: ▪ Lesser black-backed gull (*Larus fuscus graellsii*) ▪ Species with peak counts in spring/autumn: ▪ Ringed plover (*Charadrius hiaticula*) ▪ Species with peak counts in winter: ▪ Eurasian teal (*Anas crecca*) ▪ Northern pintail (*Anas acuta*)
Severn Estuary/Môr Hafren SAC	0km (W and N)	Annex I habitats that are a primary reason for selection of this site: ▪ Estuaries ▪ Mudflats and sandflats not covered by seawater at low tide ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Sandbanks which are slightly covered by sea water all the time

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Reefs Annex II species that are a primary reason for selection of this site: ▪ Sea lamprey (*Petromyzon marinus*) ▪ River lamprey (*Lampetra fluviatilis*) ▪ Twaite shad (*Alosa fallax*)
Exmoor and Quantock Oakwoods SAC	7 km (SW)	Annex I habitats that are a primary reason for selection of this site: ▪ Old sessile oak woods with Ilex and Blechnum in the British Isles Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*)* Priority feature Annex II species that are a primary reason for selection of this site: ▪ Barbastelle (*Barbastella barbastellus*) Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Bechstein's bat (*Myotis bechsteinii*) ▪ Otter (*Lutra lutra*)
Somerset Levels and Moors SPA	15.9km (E)	Annex 1 species Over winter the area regularly supports: ▪ Bewick's swan (*Cygnus columbianus bewickii*) ▪ Golden plover (*Pluvialis apricaria*) ▪ Eurasian tealt (*Anas crecca*) ▪ Lapwing (*Vanellus vanellus*) Internationally important assemblage of birds Over winter the area regularly supports: 73,014 waterfowl (5 year peak mean 1991/92-1995/96) including:

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Bewicks swan (*Cygnus columbianus bewickii*), ▪ Eurasian teal (*Anas crecca*), ▪ Golden plover (*Pluvialis apricaria*) ▪ and lapwing (*Vanellus vanellus*)
Somerset Levels and Moors Ramsar	15.9km (E)	Ramsar criterion 5 Assemblages of international importance Species with peak counts in winter: 97,155 waterfowl (5 year peak mean 1998/99-2002/2003) Ramsar criterion 6 Species/populations occurring at levels of international importance ▪ Species with peak counts in winter: ▪ Eurasian teal (*Anas crecca*) ▪ Lapwing (*Vanellus vanellus*) Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter: ▪ Eurasian wigeon (*Anas penelope*) ▪ Mute swan (*Cygnus olor*) ▪ Northern pintail (*Anas acuta*) ▪ Northern shoveler (*Anas clypeata*)
River Usk / Afon Wsyg SAC	40km (N and W)	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Annex II species that are a primary reason for selection of this site: ▪ Sea lamprey (*Petromyzon marinus*) ▪ Brook lamprey (*Lampetra planeri*) ▪ River lamprey (*Lampetra fluviatilis*)

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Twaite shad (*Alosa fallax*) ▪ Atlantic salmon (*Salmo salar*) ▪ Bullhead (*Cottus gobio*) ▪ Otter (*Lutra lutra*) Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Allis shad (*Alosa alosa*)
River Axe SAC	45km (~530km via marine routes) (S)	Annex I habitats that are a primary reason for selection of this site: ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Sea lamprey (*Petromyzon marinus*) ▪ Brook lamprey (*Lampetra planeri*) ▪ Bullhead (*Cottus gobio*)
River Wye / Afon Gwy SAC	59km (NE and W)	Annex I habitats that are a primary reason for selection of this site: ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Transition mires and quaking bogs ▪ Annex II species that are a primary reason for selection of this site: ▪ White-clawed crayfish (*Austrapotamobius pallipes*) ▪ Sea lamprey (*Petromyzon marinus*) ▪ Brook lamprey (*Lampetra planeri*) ▪ River lamprey (*L.fluviailis*) ▪ Twaite shad (*Alosa fallax*) ▪ Atlantic salmon (*salmo salar*) ▪ Bullhead (*Cottus gobio*) ▪ Otter (*Lutra lutra*) Annex II species present as a qualifying feature, but not a primary reason for site selection:

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Allis shad (*Alosa alosa*)
Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC	90km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena Phocoena*)
River Avon SAC	102km (SE)	Annex I habitats that are a primary reason for selection of this site: ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Annex II species that are a primary reason for selection of this site: ▪ Desmoulin's whorl snail (*Vertigo moulinsiana*) ▪ Sea lamprey (*Petromyzon marinus*) ▪ Brook lamprey (*Lampetra planeri*) ▪ Atlantic salmon (*Salmo salar*) ▪ Bullhead (*Cottus gobio*)
Lundy SAC	105km (W)	Annex I habitats that are a primary reason for selection of this site: ▪ Reefs Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Sandbanks which are slightly covered by sea water all the time ▪ Submerged or partially submerged sea caves ▪ Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Grey seal (*Halichoerus grypus*)
Pembrokeshire Marine / Sir Benfro Forol SAC	121km (NW)	Annex I habitats that are a primary reason for selection of this site: ▪ Estuaries ▪ Large shallow inlets and bays ▪ Reefs

Site Name	Approx. distance from the Works Area	Qualifying features
		Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Sandbanks which are slightly covered by sea water all the time ▪ Mudflats and sandflats not covered by seawater at low tide ▪ Coastal lagoons ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) ▪ Submerged or partially submerged sea caves ▪ Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*) ▪ Shore dock (*Rumex rupestris*) Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Sea lamprey (*Petromyzon marinus*) ▪ River lamprey (*Lampetra fluviatilis*) ▪ Allis shad (*Alosa alosa*) ▪ Twaite shad (*A.fallax*) ▪ Otter (*Lutra lutra*)
Cardigan Bay / Bae Ceredigion SAC	138km (NW)	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Sandbanks which are slightly covered by sea water all the time ▪ Reefs ▪ Submerged or partially submerged sea caves Annex II species that are a primary reason for selection of this site: ▪ Bottlenose dolphin (*Tursiops truncatus*) Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Sea lamprey (*Petromyzon marinus*) ▪ River lamprey (*Lampetra fluviatilis*) ▪ Grey seal (*Halichoerus grypus*)

Site Name	Approx. distance from the Works Area	Qualifying features
Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC	151km (NW)	Annex I habitats that are a primary reason for selection of this site: ▪ Sandbanks which are slightly covered by sea water all the time ▪ Estuaries ▪ Coastal lagoons ▪ Large shallow inlets and bays ▪ Reefs Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Mudflats and sandflats not covered by seawater at low tide ▪ Salicornia and other annuals colonizing mud and sand ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) ▪ Submerged or partially submerged sea caves Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Bottlenose dolphin (*Tursiops truncatus*) ▪ Otter (*Lutra lutra*) ▪ Grey seal (*Halichoerus grypus*)
Plymouth Sound and Estuaries SAC	107km (SW)	Annex I habitats that are a primary reason for selection of this site: ▪ Sandbanks which are slightly covered by sea water all the time ▪ Estuaries ▪ Large shallow inlets and bays ▪ Reefs ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Mudflats and sandflats not covered by seawater at low tide Annex II species that are a primary reason for selection of this site: ▪ Shore dock (*Rumex rupestris*) Annex II species present as a qualifying feature, but not a primary reason for site selection:

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Allis shad (*Alosa alosa*)
Carmarthen Bay and Estuaries/ Bae Caerfyrddin ac Aberoedd SAC	79km (NW)	Annex I habitats that are a primary reason for selection of this site: ▪ Sandbanks which are slightly covered by sea water all the time ▪ Estuaries ▪ Mudflats and sandflats not covered by seawater at low tide ▪ Large shallow inlets and bays ▪ Salicornia and other annuals colonizing mud and sand ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Annex II species that are a primary reason for selection of this site: ▪ Twaite shad (*Alosa fallax*) Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Sea lamprey (*Petromyzon marinus*) ▪ River lamprey (*Lampetra fluviatilis*) ▪ Allis shad (*Alosa alosa*) ▪ Otter (*Lutra lutra*)
West Wales Marine / Gorllewin Cymru Forol SAC	138km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*)
Afon Tywi/ River Tywi SAC	107km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Twaite shad (*Alosa fallax*) ▪ Otter (*Lutra lutra*) Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ Sea lamprey (*Petromyzon marinus*) ▪ Brook lamprey (*Lampetra planeri*)

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ River lamprey (*Lampetra fluviatilis*) ▪ Allis shad (*Alosa alosa*) ▪ Bullhead (*Cottus gobio*)
River Itchen SAC	130km (SE)	Annex I habitats that are a primary reason for selection of this site: ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Annex II species that are a primary reason for selection of this site: ▪ Southern damselfly (*Coenagrion mercuriale*) ▪ Bullhead (*Cottus gobio*) Annex II species present as a qualifying feature, but not a primary reason for site selection: ▪ White-clawed crayfish (*Austropotamobius pallipes*) ▪ Brook lamprey (*Lampetra planeri*) ▪ Atlantic salmon (*Salmo salar*) ▪ Otter (*Lutra lutra*)
Afonydd Cleddau / Cleddau Rivers SAC	142km (NW)	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation ▪ Active raised bogs *Priority feature ▪ Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)* Priority feature Annex II species that are a primary reason for selection of this site: ▪ Brook lamprey (*Lampetra planeri*) ▪ River lamprey (*Lampetra fluviatilis*) ▪ Bullhead (*Cottus gobio*) ▪ Otter (*Lutra lutra*) Annex II species present as a qualifying feature, but not a primary reason for site selection:

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Sea lamprey (*Petromyzon marinus*)
Slaney River Valley SAC	254km (NE)	The site is selected for the following Annex I habitats: ▪ Estuaries ▪ Tidal mudflats and sandflats ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) ▪ Mediterranean salt meadows (*Juncetalia maritime*) ▪ Floating river vegetation ▪ Old oak woodlands ▪ Alluvial forests The site is selected for the following Annex II species: ▪ Freshwater Pearl Mussel (*Margaritifera margaritifera*) ▪ Sea Lamprey (*Petromyzon marinus*) ▪ Brook Lamprey (*Lampetra planeri*) ▪ River Lamprey (*Lampetra fluviatilis*) ▪ Twaite Shad (*Alosa fallax*) ▪ Atlantic Salmon (*Salmo salar*) ▪ Otter (*Lutra lutra*) ▪ Common (Harbour) Seal (*Phoca vitulina*)
Lower River Suir SAC	291km (NE)	The site is selected for the following Annex I habitats: ▪ Atlantic salt meadows (Glauco-Puccinellietalia maritimae) ▪ Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation ▪ Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels ▪ Old sessile oak woods with Ilex and Blechnum in the British Isles ▪ Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) ▪ Taxus baccata woods of the British Isles

Site Name	Approx. distance from the Works Area	Qualifying features
		The site is selected for the following Annex II species: ▪ Freshwater Pearl Mussel (*Margaritifera margaritifera*) ▪ White-clawed Crayfish (*Austropotamobius pallipes*) ▪ Sea Lamprey (*Petromyzon marinus*) ▪ Brook Lamprey (*Lampetra planeri*) ▪ River Lamprey (*Lampetra fluviatilis*) ▪ Twaite Shad (*Alosa fallax*) ▪ Atlantic Salmon (*Salmo salar*) ▪ Otter (*Lutra lutra*)
River Barrow and River Nore SAC	283km (NE)	The site is selected for the following Annex I habitats: ▪ Estuaries ▪ Mudflats and sandflats not covered by seawater at low tide ▪ Reefs ▪ Salicornia and other annuals colonising mud and sand ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) ▪ Mediterranean salt meadows (*Juncetalia maritimi*) ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation ▪ European dry heaths ▪ *Hydrophilous* tall herb fringe communities of plains and of the montane to alpine levels ▪ Petrifying springs with tufa formation (*Cratoneurion*) ▪ Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles ▪ Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) The site is selected for the following Annex II species: ▪ Desmoulin's Whorl Snail (*Vertigo moulinsiana*) ▪ Freshwater Pearl Mussel (*Margaritifera margaritifera*) ▪ White-clawed Crayfish (*Austropotamobius pallipes*) ▪ Sea Lamprey (*Petromyzon marinus*) ▪ Brook Lamprey (*Lampetra planeri*)

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ River Lamprey (*Lampetra fluviatilis*) ▪ Twaite Shad (*Alosa fallax*) ▪ Atlantic Salmon (*Salmo salar*) ▪ Otter (*Lutra lutra*) ▪ Killarney Fern (*Trichomanes speciosum*)
Blackwater River (Cork/Waterford) SAC	335km (NE)	The site is selected for the following Annex I habitats: ▪ Estuaries ▪ Mudflats and sandflats not covered by seawater at low tide ▪ Perennial vegetation of stony banks ▪ Salicornia and other annuals colonising mud and sand ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) ▪ Mediterranean salt meadows (*Juncetalia maritimi*) ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation ▪ Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles ▪ Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) The site is selected for the following Annex II species: ▪ Freshwater Pearl Mussel (*Margaritifera margaritifera*) ▪ White-clawed Crayfish (*Austropotamobius pallipes*) ▪ Sea Lamprey (*Petromyzon marinus*) ▪ Brook Lamprey (*Lampetra planeri*) ▪ River Lamprey (*Lampetra fluviatilis*) ▪ Twaite Shad (*Alosa fallax*) ▪ Atlantic Salmon (*Salmo salar*) ▪ Otter (*Lutra lutra*) ▪ Killarney Fern (*Trichomanes speciosum*)
River Boyne and River Blackwater SAC	352km (NE)	The site is selected for the following Annex I habitats: ▪ Alkaline fens

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) The site is selected for the following Annex II species: ▪ River Lamprey (*Lampetra fluviatilis*) ▪ Atlantic Salmon (*Salmo salar*) ▪ Otter (*Lutra lutra*)
North Channel SAC	356km (NE)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*)
Rockabill to Dalkey Island SAC	297km (NE)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*)
North Angelsey Marine / Gogledd Môn Forol SAC	246km (NE)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*)
Blasket Islands SAC	513km (E)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*) ▪ Grey seal (*Halichoerus grypus*)
Roaringwater Bay and Islands SAC	434km (E)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*) ▪ Grey seal (*Halichoerus grypus*)
Nord Bretagne DH SCI	164km (S)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*)

Site Name	Approx. distance from the Works Area	Qualifying features
		▪ Bottlenose dolphin (*Tursiops truncatus*)
Ouessant-Molene SCI	322km (SW)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*) ▪ Grey seal (*Halichoerus grypus*)
Mers Celtiques Talus du golfe de Gascogne SCI	311km (SW)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*) ▪ Bottlenose dolphin (*Tursiops truncatus*)
Côte de Granit rose-Sept-Iles SCI	241km (S)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*) ▪ Bottlenose dolphin (*Tursiops truncatus*)
Tregor Goelo SCI	241km (S)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*) ▪ Bottlenose dolphin (*Tursiops truncatus*)
Baie de Morlaix SCI	270km (S)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*)
Abers – Côte des légendes SCI	295km (SW)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*)
Chaussée de Sein SCI	367km (SW)	Annex II species that are a primary reason for selection of this site: ▪ Harbour porpoise (*Phocoena phocoena*) ▪ Grey seal (*Halichoerus grypus*)

Site Name	Approx. distance from the Works Area	Qualifying features
North Rona SAC	895km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Monach Islands SAC	756km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Horn Head and Rineclevan SAC	544km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Slieve Tooey/Tormore Island/Loughros Beg Bay SAC	528km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Inishkea Islands SAC	573km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Duvillaun Islands SAC	569km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Inishbofin and Inishsark SAC	550km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Slyne Head Islands SAC	537km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Roringwater Bay and Islands SAC	443km (W)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)

Site Name	Approx. distance from the Works Area	Qualifying features
Isles of Scilly Complex SAC	257km (SW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
The Maidens SAC	442km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)
Treshnish Isles SAC	624km (NW)	Annex II species that are a primary reason for selection of this site: ▪ Grey seal (*Halichoerus grypus*)

4.2 MARINE BIODIVERSITY BASELINE

DATA SOURCES

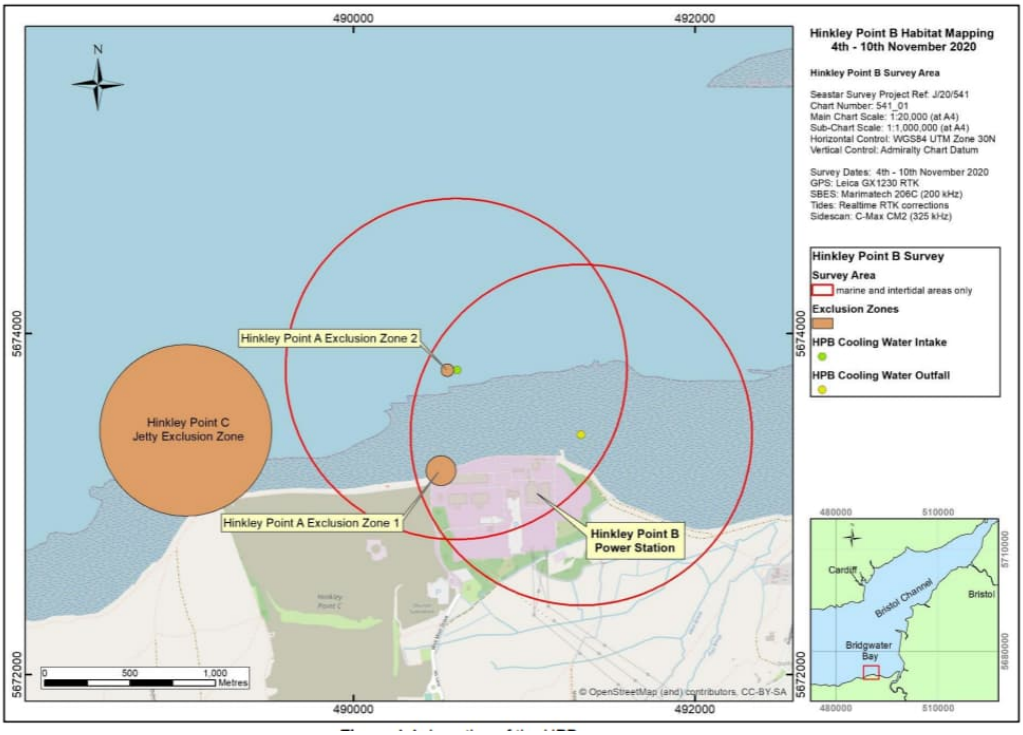
4.2.1. The principal marine ecology data sources used to inform the baseline characterisation for the HRA comprise the following:

- Defra Magic Map Application[30]; and
- Sea Watch Foundation sightings[31].

4.2.2. In addition, site-specific surveys were undertaken in the marine and coastal environment between 2020 and 2022, including bathymetry, sidescan sonar, drop-down video, subtidal grab sampling, water quality monitoring and habitat mapping, the results of which will be used to inform the baseline. These are included in **Appendix 9A** and **Appendix 9B** of the **ES**.

4.2.3. For the purposes of this HRA Screening, these reports have been summarised in the following sections and are described in the context of the adopted survey area. The Survey Area refers to two overlapping 2km survey areas centred on the HPB CW Intake Structure and the CW discharge pipe covering the subtidal and intertidal zones as shown in **Graphic 4-1**.

Graphic 4-1 Marine and Intertidal Survey Areas



[30] Defra (2024). Magic Map Application. Available online at: https://magic.defra.gov.uk/magicmap.aspx (Accessed December 2024).
[31] Sea Watch Foundation, (2021). Available online at: https://www.seawatchfoundation.org.uk/wp-content/uploads/2022/01/NWDW-2021-Report_FINAL-2.pdf (Accessed December 2024).

INTERTIDAL ECOLOGY

4.2.4. A total of twelve biotopes (eight hard substrate and four sedimentary) were recorded during the intertidal validation survey of the foreshore adjacent to HPB on 26 and 27 October 2022.

4.2.5. Coralline crusts and *Corallina officinalis* in shallow eulittoral rockpools (LR.FLR.Rkp.Cor.Cor) are a key 'hard substrate community' of the Severn Estuary Ramsar. This biotope was identified in the western upper to mid shore environment and the eastern mid shore and recorded in shallower rockpools/channels between limestone layers. This biotope was not found to be present within the Works Area, but immediately adjacent to the Works Area extending in an east-west direction across the intertidal.

4.2.6. An area of *Sabellaria alveolata* Annex I biogenic reef was identified that spanned the intertidal within the central region of the survey area. In the intertidal zone this area of reef covered approximately 220,105m^2. Approximately 4,166m^2 of littoral *S.alveolata* reef is within the Works Area for the installation of the AEDL and the STPL.

4.2.7. Biotopes recoded ranged from those typical of more sheltered shores in the upper shore, with a transition to sedimentary biotopes in the more exposed environments further out in the Severn Estuary. A few changes in the upper shores of the survey area were noted since the 2020 phase 1 survey, with barren shingle (LS.LCS.Sh.BarSh) extending further down the shore than previously observed.

4.2.8. The 2022 habitat validation survey was able to access more of the intertidal area due to the lower tide conditions which applied at that time. This allowed for more of the limestone layers to be exposed and greater access to the lower shore. Due to this there was a greater extent of the biotopes LS.LBR.Sab.Salv and LR.Rkp.Cor.Cor recorded compared to the 2020 Phase 1 habitat survey.

4.2.9. The lower tide during the 2022 survey also allowed better discrimination of biotopes in some areas of the lower shore, resulting in some changes to the list of biotopes recorded. However, these remain broadly consistent with the results of the 2020 Phase 1 habitat survey and the overall conclusion is that there has been no significant change in the intertidal biotopes and their distribution since 2020, except for changes noted above.

4.2.10. No priority marine features, protected species or other notable fauna or flora were recorded during the habitat validation survey.

BENTHIC ECOLOGY

4.2.11. Benthic sampling offshore of HPB was undertaken in November 2020, with works completed in two phases. Bathymetric and side-scan sonar (SSS) data were collected and analysed to inform the locations for subsequent benthic grab sampling. Surveys covered two overlapping areas, each measuring 2 km in diameter, with one centred on the HPB Cooling Water Intake Structure and the second on the HPB cooling water discharge pipe.

4.2.12. The benthic ecology in each of the principal habitats identified has been assessed through a suite of surveys including grab sampling. The dominant/characteristic species identified from each grab sample were examined in detail and used to create a biotope map of the subtidal area. In order to ensure overlap with the intertidal survey, the shallowest intertidal areas were surveyed at or around high water. When aligned with the intertidal surveys as described above, this gave the greatest coverage available of the marine and coastal habitats of interest to this HRA, i.e. those in the

immediate vicinity of the Proposed Works, and with the greatest potential for interaction with associated activities.

4.2.13. The seabed in the subtidal region of the survey area was found to predominantly consist of soft sediments. The sediment types most frequently identified were muds and sandy muds, these were distributed throughout the survey area. In addition, areas of sands and muddy sands were identified close inshore.

4.2.14. Two areas of *Sabellaria alveolata* Annex I biogenic reef were identified. One of these was located in the north-west of the survey area and covered an area of approximately 50,200 m^2. The other was significantly larger extending along the shore within the central region of the survey area spanning the intertidal and subtidal. The subtidal zone of this area of reef covered approximately 206,220m^2. Approximately 3,321m^2 of the identified sublittoral *S.alveolata* reef is located within the Works Area for the Cooling Water Intake Dismantling.

4.2.15. Macrobenthic invertebrate analysis of grab samples identified a total of 3,488 individuals in 61 taxa, dominated by annelid worms (69.9 %) and molluscs (19.9 %). The most common taxa identified included the biogenic reef-forming polychaete *S. alveolata*, which was identified in five of the 18 samples, the oligochaete *Tubificoides amplivasatus* and the bivalve *Limecola balthica*.

4.2.16. Benthic infaunal communities within the Inner Bristol Channel and Severn Estuary are generally noted as being impoverished assemblages, dominated by opportunistic species, mainly due to the high instability of the seabed habitats, due to the prevailing dynamic sedimentary regime. This general observation was further supported by the site-specific benthic surveys, as described above.

MARINE MAMMALS

Cetaceans

4.2.17. SCANS-IV is the most recent survey which forms part of a long-term marine mammal survey programme with approximately decadal frequency. The SCANS-IV report summarises estimates of abundance for those cetacean species where sufficient data were obtained during surveys conducted in 2022[32]. Species include harbour porpoise *Phocoena phocoena*, bottlenose dolphin, *Tursiops truncatus*, Risso's dolphin *Grampus griseus, Lagenorhynchus albirostris* white-beaked dolphin, *Lagenorhynchus acutus* white-sided dolphin, short-beaked common dolphin *Delphinus delphis*, striped dolphin *Stenella coeruleoalba*, long-finned pilot whale *Globicephala melas*, beaked whales *Ziphiidae spp*, fin whale *Balaenoptera physalus* and minke whale *Balaenoptera acutorostrata*. It should be noted that there was no data recorded for the Severn Estuary or directly within the Bristol Channel.

[32] Gilles, A, Authier, M, Ramirez-Martinez, NC, Araújo, H, Blanchard, A, Carlström, J, Eira, C, Dorémus, G, FernándezMaldonado, C, Geelhoed, SCV, Kyhn, L, Laran, S, Nachtsheim, D, Panigada, S, Pigeault, R, Sequeira, M, Sveegaard, S, Taylor, NL, Owen, K, Saavedra, C, Vázquez-Bonales, JA, Unger, B, Hammond, PS. (2023) Estimates of cetacean abundance in European Atlantic waters in summer 2022 from the SCANS-IV aerial and shipboard surveys. Final report published 29 September 2023. 64 pp. https://tinyurl.com/3ynt6swa

4.2.18. Survey block Celtic Sea-C (CS-C) was the closest search area approximately 62km north west of the Works Area. Surveys within this block covered an area of approximately 36,031 km^2. The most common species recorded within CS-C was the common dolphin followed by bottlenose dolphin and harbour porpoise. Common dolphin were recorded primarily just outside of the Bristol Channel and surrounding Pembrokeshire. Bottlenose dolphin were also primarily recorded just outside of the Bristol Channel and within the Swansea area. However, it has been previously noted within the Atlas of the Marine Mammals of Wales that the bottlenose dolphin can be considered as an infrequent visitor to the Bristol Channel[33].

4.2.19. Harbour porpoise were primarily recorded just outside of the Bristol Channel including near Barnstaple Bay and Pembrokeshire. Minke whale and fin whale were also recorded within the CS-C area however significantly further away from the Bristol Channel and therefore from the development area. A summary of the SCANS-IV survey abundance and density estimates for Block CS-C and relevant MU population estimates are summarised in **Table 4-3**.

4.2.20. Occasional sightings and strandings of other cetaceans such as long-finned pilot whale (*Globicephala melas*), fin whale (*Balaenoptera physalus*) and killer whale (*Orcinus orca*) have been recorded, although these remain scarce[34].

4.2.21. The harbour porpoise is still widely considered the most commonly-recorded cetacean in the Bristol Channel, and within UK waters as a whole[35]. The harbour porpoise is a qualifying feature of the Bristol Channel Approaches SAC, which is the closest European site to the Proposed Works designated for this species. Results from previous marine monitoring programmes in 2016 estimated that the harbour porpoise density within the Bristol Channel area is likely to range between 0-0.25 animals per km^2.

4.2.22. There is a lack of survey effort for cetacean abundance within the Severn Estuary and Bristol Channel[34]. However, harbour porpoise and common dolphin are most likely to frequent the Severn Estuary as these are the main species which appear to utilise the areas surrounding the Bristol Channel.

4.2.23. No specific marine mammal surveys were undertaken to inform this HRA. Opportunistic field observations were made during the site-specific intertidal, benthic or boat-based water quality surveys, with any sightings recorded to be used as anecdotal information to support baseline characterisation. No marine mammals were observed during the site-specific marine surveys undertaken over the period 2020-2022, although it is noted that harbour porpoise has occasionally been observed by ornithology and ecology teams working on the HPC site during this time period.

[33] Baines, M.E., Evans, P.G.H. (2012) Atlas of the Marine Mammals of Wales. CCW Monitoring Report No. 68. 2nd edition, 139pp.
[34] Reid, J.B., Evans, P.G.H, Northridge, S.P. (2003). Atlas of Cetacean distribution in North West European waters, 76 pages, colour photos, maps. Paperback, ISBN 1 86107 550 2
[35] Jenkins, R.E., Brown, R.D.H., Phillips, M.R. (2009) Harbour porpoise (Phocoena phocoena) conservation management: A dimensional approach. Available online at: https://www.sciencedirect.com/science/article/abs/pii/S0308597X090000220 (Accessed September 2024).

Table 4-3 Cetacean abundance and density estimates within Survey Block CS-C and relevant Management Unit *including confidence interval (CI) and coefficient of variance (CV). Where "- " is shown, this indicates there are no records of the species in the block*

Common Name	Scientific Name	Block CS-C Abundance	Block CS-C Density (animals per km^2)	MU Abundance Estimate[36]
Harbour porpoise	*Phocoena phocoena*	564 (95% CI = 104-1,183)	0.0157 (CV = 0.506)	26,870 (95% CI = 17,745-41,536)
Bottlenose dolphin	*Tursiops truncatus*	15,117 (95% CI = 4,966-29,157)	0.4195 (CV = 0.406)	10,653 (95% CI = 6,533 – 17,372)
Risso's dolphin	*Grampus griseus*	205 (95% CI = 3-721)	0.0057 (CV = 1.004)	12,262 (95% CI = 5,227 – 28,764)
White-beaked dolphin	*Lagenorhynchus albirostris*	-	-	43,951 (95% CI = 24,439 – 67,924)
Atlantic White-sided dolphin	*Lagenorhynchus acutus*	-	-	18,128 (95% CI = 6,049 – 54,323)
Common dolphin	*Delphinus delphis*	30,301 (95% CI = 17,888-51,902	0.8410 (CV = 0.264)	102,656 (95% CI = 58,932-178,822)
Striped dolphin	*Stenella coeruleoalba*	-	-	No data
Pilot whale	*Globicephala melas*	-	-	No data
Beaked whale	*Ziphiidae*	-	-	No data
Minke whale	*Balaenoptera acutorostrata*	284 (95% CI = 3-641)	0.0079 (CV = 0.822)	20,118 (95% CI = 14,061-28,786)
Fin whale	*Balaenoptera musculus*	44 (95% CI = 12-162)	0.0012 (CV = 0.696)	No data

Pinnipeds

4.2.24. Distributions of pinnipeds have been previously estimated using data from animal-borne telemetry tags which record and transmit tracking data, providing information on at-sea movements and haul-out behaviour. Grey seals *Halichoerus grypus* have been recorded around the outer limits of the

[36] IAMMWG. 2023. Review of Management Unit boundaries for cetaceans in UK waters (2023). JNCC Report 734, JNCC, Peterborough, ISSN 0963-8091. https://hub.jncc.gov.uk/assets/b48b8332-349f-4358-b080-b4506384f4f7

Bristol Channel. They have also been recorded within the Bristol Channel, although usually in small numbers[37]. The tracks of 270 grey seals (1991 to 2016) were recorded outside of the Bristol Channel from 1991 to 2016. Furthermore, the main grey seal breeding population in the Bristol Channel is located at Lundy Island[33] and is the closest location to the Works Area.

4.2.25. No tracking data currently exists for harbour seals *Phoca vitulina* in the Celtic and Irish Sea region. However, the Celtic and Irish Sea region does not host a large population of harbour seals (0.1% of British Isles population)[38]. Out of 330 tagged seals from 2001 to 2016, harbour seals were not recorded in the Bristol Channel and there were no haul out counts.

4.2.26. Of the pinnipeds, only the grey seal (*Halichoerus grypus*) is observed regularly within the Bristol Channel / Severn Estuary.

FISH

4.2.27. The broader fish population of the Severn Estuary and Bristol Channel is of similar species composition to that of other estuaries and coastal regions in south-west England. The Severn Estuary Dataset (SEDS)[39] provides long-term data on the abundance and species richness of fish in the Inner Bristol Channel - a total of 83 estuarine and marine fish species have been recorded since surveys began[40]. Henderson[41] reported the most common species as sprat (*Sprattus sprattus*), whiting (*Merlangius merlangus*) and sand goby (*Pomatoschistus minutus*). Both JNCC[42] and the Severn Estuary Partnership[43] state that over 110 species are recorded in the Estuary.

4.2.28. The following fish impingement datasets from Hinkley Point B provide relevant information on fish species within the Seven Estuary:

- Routine Impingement Monitoring Programme (RIMP), conducted at Hinkley Point B from 1981; and

[37] Carter, M.I.D., Boehme, L., Duck, C.D., Grecian, W,J., Hastie, G.D., McConnell, B.J., Miller, D.L., Morris, C.D., Moss S.E.E., Thompson, D., Thompson, P.M., Russell D.J.F. (2020) Habitat-based predictions of at-sea distribution for grey and harbour seals in the British Isles. Sea Mammal Research Unit, University of St Andrews, Report to BEIS, OESEA-16-76/OESEA-17-78

[38] Carter, M.I.D., Boehme, L., Duck, C.D., Grecian, W,J., Hastie, G.D., McConnell, B.J., Miller, D.L., Morris, C.D., Moss S.E.E., Thompson, D., Thompson, P.M., Russell D.J.F. (2020) Habitat-based predictions of at-sea distribution for grey and harbour seals in the British Isles. Sea Mammal Research Unit, University of St Andrews, Report to BEIS, OESEA-16-76/OESEA-17-78

[39] Medin (2024) Metadata: Severn Estuary Database Phase 2. Available online at: https://portal.medin.org.uk/portal/start.php?tpc=007_4f4c4942-4343-5764-6473-303234323637&step=0017 (Accessed December 2024).

[40] Henderson, P.A. and Bird, D.J., 2010. Fish and macro-crustacean communities and their dynamics in the Severn Estuary. Marine pollution bulletin

[41] Henderson, P.A., 1989. On the structure of the inshore fish community of England and Wales. Journal of the Marine Biological Association of the United Kingdom, 69(1), pp.145-163.

[42] JNCC (1995). Information Sheet on Ramsar wetlands (RIS). Available online at: https://jncc.gov.uk/jncc-assets/RIS/UK11081.pdf (Accessed January 2023).

[43] Asera (no date). Fish of the Severn Estuary European Marine Site. Available online at: https://asera.org.uk/features/fish/ (Accessed January 2023)

- Comprehensive Impingement Monitoring Data (CIMP), conducted at Hinkley Point B in 2009/10 (CIMP1) and 2021/22 (CIMP2).

4.2.29. RIMP data collected through monthly sampling recorded 90 estuarine and marine fish species between 1981-2019, with about 38 species sampled in each year. The CIMP2 data from 2021/2022 recorded 62 species of fish. The ten most abundant species recorded within impingement monitoring were sprat (*Sprattus sprattus*), whiting (*Merlangius merlangus*), sand goby (*Pomatoschistus minutus*), poor cod (*Trisopterus minutus*), Dover sole (*Solea solea*), bib (pout) (*Trisopterus luscus*), common sea snail (*Liparis liparis*), European sea bass (*Dicentrarchus labrax*), European flounder (*Platichthys flesus*) and dab (*Limanda limanda*). Numbers of fish present within the Seven Estuary show clear seasonal patterns with lowest numbers present in April and May, increasing through summer and Autumn and peak in December, following this numbers decline in January, February and March.

4.2.30. Seven diadromous fish species are known to migrate through the Severn Estuary; Atlantic salmon (*Salmo salar*), twaite shad (*Alosa fallax*), allis shad (*Alosa alosa*), river lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromyzon marinus*), sea trout (*Salmo trutta*), and European eel (*Anguilla anguilla*). The Estuary is also considered internationally important for eels, supporting 98% of the UK elver run. Most of the diadromous species were rarely recorded with eight Atlantic salmon, nine river lamprey and two sea lamprey recorded in the RIMP prior to 2013 and no allis shad or sea trout were recorded. In CIMP1, two allis shad were recorded, no Atlantic salmon or sea trout were identified, however two Atlantic salmon were recorded in February and March 2010. In CIMP2, there were no occurrences of river lamprey, sea lamprey, Atlantic salmon or allis shad, however one sea lamprey was recorded in March 2022. The Severn Estuary and its rivers are the largest European eel fishery in the UK, comprising 95% of all glass eels (juveniles migrating towards freshwater) recorded in England and Wales. RIMP data suggested a decline in the number of European eels impinged. A dedicated glass eel survey undertaken in 2012 suggest glass eels were more abundant within the surface layers close to the south shore (near the CW intake). Additional glass eel surveys in 2013 based at the Hinkley Point C intake locations yielded 2,500 glass eels.

4.2.31. Most fish species at Hinkley Point are not present in significant numbers for the entire year, with the community composition changing throughout the year. As almost all species of fish present within the Severn Estuary undertake regular migrations and tend to move seasonally up and down the estuary. Both species richness and the total abundance reach a maximum in late summer and autumn - the timing of this peak varies between the upper and lower estuary[40]. The estuary is primarily used by marine species as a nursery ground due to the extensive and highly productive areas of shallow marginal mudflat that provide feeding opportunities for juveniles.

4.3 MARINE AND INTERTIDAL ORNITHOLOGY BASELINE

DATA SOURCES

4.3.1. The following principal marine and intertidal ornithology data sources have been reviewed and where relevant, used to inform the baseline characterisation for the HRA:

- Information regarding the National Site Network was acquired using MAGIC Defra's map;

- Wetland Bird Survey (WeBS) data was obtained from Woodward *et al* 2024[44].
- Breeding seabird data was extracted from the JNCC, Seabird Monitoring Programme (SMP) Database[45];
- Hinkley Point B Decommissioning EIA Baseline Report: Breeding and Non-breeding Birds[46]
- Hinkley Point B Nuclear Power Station Nesting Gull Population Surveys[47] (2020, 2021,2022, 2023 and 2024);
- HPC Discharge of condition J2 - Shelduck Monitoring and Mitigation

Shelduck Monitoring and Mitigation Scheme[48].
Report to Inform Habitats Regulations Assessment for Proposals to Install terrestrial Mitigation Measures at Steart Point[49]
Shelduck Distribution, Population and Disturbance Survey Reports (2017, 2018, 2019[50], 2020[51], 2021[52], 2022[53] and 2023[54])

- HPC Discharge of condition C2 – River Parrett Winter Waterfowl Monitoring

Combwich Wharf and River Parrett Non-breeding Wildfowl and Wader Contingent Mitigation Strategy[55];

[44] Woodward, I.D., Calbrade, N.A., Birtles, A., Feather, G.A., Peck, K., Wotton, S.R., Shaw, J.M., Balmer, D.E. and Frost, T.M. 2024.
Waterbirds in the UK 2022/23: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.
[45] JNCC (2020). Seabird Monitoring Programme. Available online at: https://app.bto.org/seabirds/public/index.jsp (Accessed December 2024).
[46] Wood (2022) Hinkley Point B Decommissioning EIA Baseline Report: Breeding and non-breeding birds. EDF Energy
[47] WSP (2020/2021/2022/2023) Hinkley Point B Nuclear Power Station Nesting Gull Population Surveys 2020/2021/2022/2023/2024
[48] NNB GenCo (HPC) Ltd. (January 2019). Shelduck Monitoring and Mitigation Scheme. HPC-GEN400-XX-000-REP-100078. Version 04.
[49] NNB GenCo (HPC) Ltd. (May 2019). Report to Inform Habitats Regulations Assessment for Proposals to Install terrestrial Mitigation Measures at Steart Point.
[50] NNB GenCo (HPC) Ltd. (September 2021). Shelduck Distribution, Population and Disturbance Survey Report – 2017/2018/2019
[51] NNB GenCo (HPC) Ltd. (January 2022). Hinkley Point C Nuclear New Build Shelduck Phase 1 Monitoring – 2020
[52] NNB GenCo (HPC) Ltd. (May 2022). Hinkley Point C Nuclear New Build Shelduck Phase 1 Monitoring – 2021
[53] NNB GenCo (HPC) Ltd. (November 2022). Hinkley Point C Nuclear New Build Shelduck Phase 2 Monitoring – 2022
[54] NNB GenCo (HPC) Ltd. (December 2023). Hinkley Point C Nuclear New Build Shelduck Phase 2 Monitoring – 2023
[55] NNB GenCo (HPC) Ltd. (February 2019). Combwich Wharf and River Parrett Non-breeding Wildfowl and Wader Contingent Mitigation Strategy. HPC-GEN400-XX-000-REP-100078. Version 02.

Hinkley Point C River Parrett Wader and Wildfowl Monitoring Reports 2017/18; 2018/2019[56]; 2019/2020; 2020/2021; 2021/2022; 2022/2023[57].

- Hinkley Point B Land Management Annual Review[58] - 2019, 2020, 2021, 2022[59] and 2023[60].
- HPC Annual Ecological Monitoring Reports

Hinkley Point C Annual Ecological Monitoring Reports (2017[61], 2018[62], 2019[63], 2020[64], 2021[65], 2022[66] and 2023[67]).

- Severn Estuary SPA Functionally Linked Land Study – Avon and Somerset Link Ecology Ltd[68].
- Identification of high tide roosts on the Severn Estuary SSSI/SPA – Woodward et al (2016)[69]

NON-BREEDING BIRDS [SPECIES RECORDS AND MONITORING DATA]

Non-breeding Bird Surveys [HPB Decommissioning EIA]

4.3.2. Intertidal non-breeding bird surveys were undertaken (Wood, 2022) to collect data on the distribution and assemblages of waterbird species that use parts of the Severn Estuary SPA/Ramsar that are in close proximity to the Proposed Works Area.

4.3.3. Instantaneous Scan Samples (ISS) were undertaken to record how waterbirds use two survey sectors (Sector 1 and Sector 2) within the Study Area. Surveys focused on intertidal habitats within 500m of the Site. On each survey date two surveyors undertook six hours of simultaneous survey, one located at each observation point (OP) in order to observe any changes/patterns in the distribution of waterbirds across the tide. Two survey visits each month (fourteen in total) were completed between September 2019 and March 2020 inclusive.

[56] NNB GenCo (HPC) Ltd. (November 2020). Hinkley Point C River Parrett Wader and Wildfowl Monitoring 2017/2018 and 2018/19 – Final Reports
[57] NNB GenCo (HPC) Ltd. (Feb/Jan/April 2022). Hinkley Point C River Parrett Wader and Wildfowl Monitoring 2019/20, 2020/21 and 2021/22 – Draft Report.
[58] EDF Energy Nuclear Generation Ltd (2014 to 2018). Hinkley Point B Land Management Annual Review
[59] EDF Energy Nuclear Generation Ltd (2022). Hinkley Point B Land Management Annual Review
[60] EDF Energy Nuclear Generation Ltd (2023). Hinkley Point B Land Management Annual Review
[61] NNB GenCo (HPC) Ltd. (January 2018). Hinkley Point C Annual Ecological Monitoring Report 2017: Main Site
[62] NNB GenCo (HPC) Ltd. (March 2019). Hinkley Point C Annual Ecological Monitoring Report 2018: Main Site
[63] NNB GenCo (HPC) Ltd. (January 2020). Hinkley Point C Annual Ecological Monitoring Report 2019: Main Site
[64] NNB GenCo (HPC) Ltd. (September 2021). Hinkley Point C Annual Ecological Monitoring Report 2020: Main Site
[65] NNB GenCo (HPC) Ltd. (May 2022). Hinkley Point C Annual Ecological Monitoring Report 2021: Main Site
[66] NNB GenCo (HPC) Ltd. (June 2023). Hinkley Point C Annual Ecological Monitoring Report 2022: Main Site
[67] NNB GenCo (HPC) Ltd. (July 2024). Hinkley Point C Annual Ecological Monitoring Report 2023: Main Site
[68] Link Ecology Ltd (2021). Identification of Land with proven or possible functional linkages with the Severn Estuary SSSI/SPA Phase 6 (Avon and Somerset). Report for Natural England.
[69] Woodward, I.D., Calbrade, N.A., Norfolk, D., Salter, A., Burton, N.H.K. & Wright, L.J. (August 2016.) dentification of Wintering Waterfowl High Tide Roosts on the Severn Estuary SSSI/SPA Phase 2 (Clevedon to Oldbury) & Phase 3 (Bridgwater Bay). British Trust for Ornithology Research Report No. 683. ISBN 978-1908581-71-6

4.3.4. The non-breeding bird assemblage within the Study Area was found to primarily comprise relatively low numbers of common and widespread species that are typical of the county (Somerset) and the habitats present (beach, shale, rock bed and open estuary).

4.3.5. Within the Study Area:

- Three species are listed as individual qualifying features of the Severn Estuary SPA and Severn Estuary Ramsar (dunlin, redshank and shelduck); and
- Two species are listed as individual qualifying features of the Somerset Levels and Moors SPA and Ramsar (lapwing and teal).

4.3.6. Data from these surveys are presented in **Appendix B: Bird Survey – Survey Data Summary of Qualifying Interest Species** of this Screening Report.

Non-breeding Bird Surveys [HPC Annual Monitoring]

4.3.7. Intertidal non-breeding bird counts were conducted from a single vantage point across five count areas (1 – 5), together covering all intertidal and near shore habitats to 500m of the proposed Hinkley C Site. This was equivalent to the previously defined zone of potential disturbance associated with the site preparation phase of HPC new nuclear build. Count Areas 2, 3, 4 and 5 lie within 500m of the HPB Proposed Works Area. Seven years of annual monitoring counts are summarised:

- 2016/2017: A total of 21 waterbird species were recorded in winter 2016/17. The fewest number of observations were recorded in Count Area 2 and the most observations were recorded in Count Area 5 to the east of the Proposed Working Area.
- 2017/18: A total of 23 water bird species were recorded in winter 2017/18. Count Area 1 had the fewest number of significant counts throughout the survey with the highest number of significant counts coming from the intertidal area in front of HPA and HPB (Count Area 3).This reflects the known relative importance of the intertidal habitats dominated by soft substrates in front of HPA and HPB compared to the narrower and rock dominated intertidal areas in Count Areas 1 and 5. In comparison to the 2016/2017 results, the number of significant counts in Count Area 2 was found to have increased, suggesting that the impacts of construction activities on intertidal birds due to the HPC construction works in this area had decreased.
- 2018/19: A total of 19 water bird species were recorded in winter 2018/19. The fewest number of observations were recorded in Count Area 1 and the most observations were recorded in Count Area 5.
- 2019/20: A total of sixteen waterbird species were recorded in winter 2019/2020. The survey area was used in the 2019/20 winter period by seven species listed on the Severn estuary SPA citation as supporting either national or internationally important wintering populations, these included: curlew, grey plover, pintail, redshank, ringed plover, shelduck and wigeon. Counts of water birds within the survey area were lower than other nearby tidal areas close to Stert Point and at the mouth of the River Parrett, Wall Common and Steart Marshes (all of which are >7km from the Proposed Works Area).
- A total of sixteen waterbird species were recorded in winter 2020/2021. The survey area was used in the 2020/21 winter period by eight species listed on the Severn estuary SPA citation as supporting either national or internationally important wintering populations, theses were: curlew, dunlin, grey plover, pintail, redshank, ringed plover, shelduck and wigeon. Counts of water birds

within the survey area were lower than other nearby tidal areas close to Stert Point and at the mouth of the River Parrett, Wall Common and Steart Marshes.

- A total of fourteen waterbird species were recorded in winter 2021/2022. The survey area was used in the 2021/22 winter period by eight species listed on the Severn Estuary SPA citation as supporting either national or internationally important wintering populations, these were: curlew, dunlin, grey plover, pintail, redshank, ringed plover, shelduck and wigeon. Counts of water birds within the survey area were lower than other nearby tidal areas close to Stert Point and at the mouth of the River Parrett, Wall Common and Steart Marshes.
- A total of 18 waterbird species were recorded in winter 2022/2023. The survey area was used in the 2022/23 winter period by eight species listed on the Severn Estuary SPA citation as supporting either national or internationally important wintering populations, these were: curlew, dunlin, grey plover, pintail, redshank, ringed plover, shelduck and wigeon. Counts of water birds within the survey area were lower than other nearby tidal areas close to Stert Point and at the mouth of the River Parrett, Wall Common and Steart Marshes.

4.3.8. Data from these surveys are presented in **Appendix B**: **Bird Survey – Survey Data Summary of Qualifying Interest Species** of this Screening Report**.**

Shelduck Monitoring and Mitigation [HPC Discharge of condition J2]

4.3.9. Monitoring of shelduck at the mouth of the River Parrett and Bridgwater Bay has been undertaken annually, as required by Condition J2 of the Hinkley Point C – Development Consent Order (DCO). Surveys have been undertaken to measure population, distribution and background disturbance, (previously undertaken in 2012 and 2014-23 (ongoing) during the other monitoring periods). Population surveys have been a key component in informing population and behavioural trigger points associated with the Shelduck Monitoring and Mitigation Strategy (SMMS) for HPC. Distribution surveys have also been required in order to assess any significant changes in baseline distribution.

4.3.10. The last six years of HPC monitoring (2017 – 2023) recorded peak counts across the Study Area between late July and early September, with most peak counts recorded between early August and early September. Further monitoring followed in 2022 and 2023, also including monitoring of large vessel movements associated with HPC nuclear new build and the responses of moulting shelduck within Bridgwater Bay. This monitoring recorded peak counts in late July and late September respectively, with the highest peak count since the surveys began in 2012 recorded in July 2022. There were no records of shelduck being significantly disturbed during the vessel monitoring surveys. Shelduck were regularly disturbed in numbers that exceeded 5% of the baseline population but those disturbance events generally lasted less than five minutes after the passing of the vessel responsible for the disturbance event.

4.3.11. The distribution surveys undertaken from 2017 to 2023 show that shelduck congregate within two hours of high tide within a ‘core roosting area’ between Stert Point, Stert Island and nearby in Bridgwater Bay (approximately 7km to the east of the Proposed Works Area at the nearest location), with the majority forming a ‘raft’ on the sea. During the moult the flightless period for shelduck

normally lasts between 25-31 days (Patterson, 1982[70] in Green *et al*., 2021[71]) and in Bridgwater Bay the core moulting period is August – September, with the majority of shelduck present having completed their moult by late September.

4.3.12. Most recent distribution surveys in 2022, 2023 and 2024 concluded that the spread of shelduck around high tide remained broadly consistent throughout these survey periods and largely similar to that recorded in previous years, with birds concentrated around Fenning Island, Stert Island and Stert Point ('core roost area'). However, shelduck were more dispersed across the recording area, with an increase in the number of birds utilising the foreshore between the Wall Common fence line and Stert Point (this was also recorded in 2021, post-installation of measures to mitigate disturbance from people/walkers); and it was also evident that there was a lower number of birds using the main channel of the River Parrett, possibly in response to vessel disturbance.

4.3.13. Following the implementation of terrestrial mitigation measures in association with the HPC SMMS, as well as wider disturbance reduction initiatives by Natural England, the effectiveness of these measures has been monitored through both the disturbance monitoring element of the distribution surveys and also through specific mitigation monitoring surveys. Terrestrial mitigation at Wall Common and Stert Point has proven to be very effective and has reduced access to the core roost area in comparison to previous years, where people regularly walked from Wall Common to Stert Point.

4.3.14. A secondary concentration of shelduck was previously recorded to the east of HPC (within 500 m of the Proposed Works Area) during the high tide period, however numbers up to 2018 in this area have generally been far lower in comparison to the numbers around the 'core roosting area'. Further monitoring [in consultation with Natural England] was considered unnecessary at the temporary jetty at the HPC main site because the distribution surveys collected over a five-year (2012 to 2018) period showed that shelduck do not tend to congregate within 1 km of the HPC jetty and therefore were unlikely to be impacted by jetty operations.

4.3.15. Distribution surveys from observation points overlooking the secondary concentration were discontinued after 2018, however population data has been collected for count sector 2 (transect 2), which extends from Wall Common along the coast to HPB. Population survey results from Count Sector 2 are presented in **Table 4-4**.

[70] Patterson, I.J. (1982). The shelduck: a study in behavioural ecology. Cambridge University Press, 1982.
[71] Green, R., Burton, N. & Cook, A. 2021. Migratory movements of British and Irish Common Shelduck *Tadorna tadorna*: a review of ringing data and a pilot tracking study to inform potential interactions with offshore wind farms in the North Sea. *Ringing & Migration,* **34**, 71-83.

Table 4-4 Population survey results [Count Sector 2] (2016 – 2023)

	June (1)	July (1)	July (2)	Aug (1)	Aug (2)	Sep (1)	Sep (2)	Oct (1)
2016	7	2	29	28	431	1,243		
2017	30	200	40	205	485	89		
2018	7	36	65	34	1,370	1,957		
2019	5	31	296	52	251	229	770	502
2020	11	1	31	456	392	740	838	619
2021	14	1	0	86	632	1,503	1,548	1,611
2022	51	318	718	1,953	862	554	95	221
2023	57	22	3	5	214	129	621	201

4.3.16. Population counts between June and October illustrate that this secondary aggregation of birds around Hinkley Point generally recorded peak numbers in August, September and October of each year, where these peak counts exceed 1% of the SPA population.

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4.3.17. Wintering bird surveys are conducted at two locations within EDF landholdings, Hinkley Point and Huntspill Island. Bird data pertinent to the Hinkley Point location has been collated in **Appendix B: Bird Survey – Survey Data Summary of Qualifying Interest Species** of this Screening Report.

Identification of High Tide Roosts on the Severn Estuary SSSI / SPA

4.3.18. Woodward et al. (2016)[69] identified that high tide roosts were present at 13A Hinkley point, 13B Stolford, 13 Catsford Common, 13D Wall Common and 13K Steart marshes. All roosts were identified as mixed roosts. For the roost at Hinkley Point, it is noted that at peak high tide times all waders move to other sites. No specific high tide counts were made for the purposes of the roost identification of the site, although estimations made were considered to be in line with other counts made.

BREEDING BIRD SURVEYS AND NESTING GULL POPULATION SURVEYS [SPECIES RECORDS AND MONITORING DATA]

4.3.19. The breeding population of lesser black-backed gull is a qualifying feature of the Severn Estuary Special Protection Area (SPA), with the citation stating a population of 2,040 pairs in 1993[72]. The breeding population of lesser black-backed gull is listed for future consideration as a qualifying

[72] Natural England (1993). Severn Estuary Site Citation, EC Directive 79/409 on the Conservation of Wild Birds, Special Protection Area (SPA).
Available online at: http://publications.naturalengland.org.uk/file/6512584593244160 Accessed (December 2024).

species under Ramsar Criterion 6 for the Severn Estuary Ramsar site/SPA (4,167 occupied nests, Seabird 2000 Census).

4.3.20. During the last full census of breeding seabirds (1998-2002) a total of 74 pairs of lesser black-backed gull were recorded in Somerset, including 27 pairs at HPA and HPB (Mitchell *et al*., 2004[73]). This county total is likely to have increased since, with numbers at Highbridge having risen from 6 pairs (1998-2002) to 131 pairs in 2016 (JNCC, SMP database). Similarly, a total of 46 pairs were estimated for the Hinkley Point Power Station in 2011 (JNCC, SMP database).

4.3.21. The following breeding bird surveys were undertaken at Hinkley Point B Power Station:

- 2019: Breeding bird territory mapping surveys (using methods based on the British Trust for Ornithology's Common Bird Census (CBC)) were carried out at Hinkley Point B in 2019 during which the lesser black-backed gull population was estimated at **20 pairs**. This represents approximately 0.98% of the Severn Estuary SPA, qualifying population.
- 2021: Baseline breeding gull surveys were undertaken following the Vantage Point (VP) methodology, as detailed in Gilbert *et al*. (1998)[74], accounting for the review of methods in Ross *et al*. (2016)[75] and recommended survey timings in Walsh *et al*. (1995)[76], primarily from rooftop vantage points (VPs). The total estimated lesser black-backed gull breeding population for the Hinkley Point B survey area in 2021 is a minimum of **7 pairs**. Approximately 90% of the survey area was visible. This represents approximately 0.34% of the Severn Estuary SPA, qualifying population.
- 2022 & 2023: The total estimated lesser black-backed gull breeding population for the Hinkley Point B survey area in 2022 and 2023 is **6 pairs**. This represents approximately 0.29% of the Severn Estuary SPA, qualifying population.

4.3.22. The overall nesting gull numbers at Hinkley Point Complex tare likely to have declined since 2016 due to the removal of roofing at HPA. In addition, non-lethal deterrents (which have been applied in accordance with a licence from Natural England) are being used on gulls and other potential nesting birds within Hinkley Point B. The main deterrent employed is netting, with a number of buildings having been netted during the 2022 survey visits. Other non-lethal deterrent methods employed at Hinkley Point B included lasers, bioacoustics and anti-bird spikes.

4.3.23. Data from these surveys are presented in **Appendix B: Bird Survey – Survey Data Summary of Qualifying Interest Species** of this Screening Report.

[73] Mitchell, P.I., Newton, S.F., Radcliffe, N. and Dunn, T.E. (2004). Seabird Populations of Britain and Ireland: Results of the Seabird 2000 Census 1998-2002. T & AD Poyser, London.
[74] Gilbert, G., Gibbons, D.W. & Evans, J. (1998). Bird monitoring methods: A manual of techniques for key UK species. RSPB.
[75] Ross, K.E., Burton, N.H.K., Balmer, D.E., Humphreys, E.M., Austin, G.E., Goddard, B., Schindler-Dite, H., Rehfisch, M.M.
(2016). Urban breeding gull surveys: a review of methods and options for survey design. BTO Research Report No. 680.
[76] Walsh, P.M., Halley, D. J., Harris, M. P., del Nevo, A., Sim, I. M. W., & Tasker, M. (1995). Seabird monitoring handbook for Britain and Ireland. Peterborough, UK.

SEVERN ESTUARY SPA FUNCTIONALLY LINKED LAND STUDY

4.3.24. Natural England commissioned the Severn Estuary SPA project (Link Ecology Ltd, 2021): A study to identify land with proven or possible functional linkages[77] with the Severn Estuary SPA, between Beachley and Hinkley Point. The Natural England Study presents the findings of the sixth Phase of a wider assessment to identify sites of importance to the population of birds found, at least for part of their life cycle, on the Severn Estuary SPA.

4.3.25. A total of 33 species of interest were selected for study within the remit of this work. These were the SPA Qualifying Species, the SPA named Assemblage Species, those listed in the SSSI citations for the Severn Estuary, Upper Severn Estuary and Bridgwater Bay, six additional wader species (avocet, golden plover, ruff, sanderling, green sandpiper and greenshank), whooper swan, little egret and common crane, all species that are part of the non-listed waterfowl assemblage.

4.3.26. An assessment of data collated within Area 8 (Chilton Trinity to Hinkley Point) identified two sites considered to provide functional linkage to the SPA:

- Stockland Marshes (FLL 40) has been identified as functionally linked of 'high' importance for a number of waterbird species, most notably shoveler, gadwall, black-tailed godwit, snipe, green sandpiper and pintail. Stockland Marshes is situated approximately 2.8km to the south east of the Proposed Works Area.
- Fields South of Combwich (FLL 39) have also been identified as functionally linked for lapwing. However, these fields are currently defined as likely to be of 'low' importance or 'data deficient', given that the only data available was from a single winter's survey, over 10 years ago. Fields South of Combwich are situated approximately 5.8km to the south east of the Proposed Works Area.

4.3.27. The Wildfowl & Wetlands Trusts (WWT's) Steart Marshes (approximately 4km to the east of the Proposed Works) has been previously identified as a significant functionally-linked High Tide Roost.

[77] The term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European
site might fulfil in terms of supporting the populations for which the site was designated or classified. Such an area of land or sea is therefore "linked" to the site in question because it provides a (potentially important) role in
maintaining or restoring a protected population at favourable conservation status (Chapman and Tyldesley, 2016)

4.4 TERRESTRIAL BIODIVERSITY BASELINE

DATA SOURCES

4.4.1. Terrestrial taxa that are qualifying features of the relevant sites (**Table 4-2**) within the National Site Network include otter and bats. The elements of the terrestrial biodiversity baseline that inform the HRA are therefore:

- Hinkley Point B Decommissioning EIA — Baseline Report: Desk Study (Terrestrial Ecology) (2024)[78]
- Hinkley Point B Decommissioning EIA — Baseline Report: Otter and water vole (2021)[79]
- Hinkley Point B Decommissioning EIA — Baseline Report: Bats (2021)[80]
- Hinkley Point B Decommissioning EIA – Baseline Verification (2022)[81]
- Hinkley Point B Decommissioning EIA – Baseline Verification (2024)[82]

4.4.2. The Desk Study also identifies other relevant sources of data:

- Hinkley Point B Land Management Annual Review – 2019, 2020, 2021, 2022 and 2023.
- Hinkley Point B Integrated Land Management Plan[83] 2014 – 2018.
- Hinkley Point C Annual Ecological Monitoring Reports: 2017 – 2023.
- HPC Bat Habitat Connectivity Along Green Lane. Delivery Advice Note[84].

BAT RECORDS

Desk Study Records

4.4.3. Barbastelle bat is a primary reason for the site selection of Exmoor and Quantock Oakwoods SAC – – a maternity colony of barbastelles utilises a range of tree roosts in this area of predominantly oak woodland. Bechstein's bat are a qualifying feature of the SAC, but not a primary reason for site selection.

4.4.4. The Desk Study includes records of both Barbastelle and Bechstein's bat within 5km of the Site.

4.4.5. Annual monitoring in relation to Hinkley Point C includes annual (2012 - 2023) checks of approximately 60 bat boxes around the perimeter of HPB, however no roosting barbastelle or Bechstein's bats have been recorded.

4.4.6. Bat activity surveys along transects and at static detector locations, also carried out as part of annual HPC monitoring, have recorded consistently low levels of barbastelle activity to the south-west of the Site, around and within the HPC site, including at/along Green Lane, Benhole Lane, Bum Brook and Kilve. No Bechstein's bats have been recorded.

[78] WSP (2024). Hinkley Point B Decommissioning EIA – Baseline Report: Desk Study (Terrestrial Ecology)
[79] Wood (2021b). Hinkley Point B Decommissioning EIA – Baseline Report: Otter and water vole
[80] Wood (2021c). Hinkley Point B Decommissioning EIA – Baseline Report: Bats
[81] WSP (2022). Hinkley Point B Decommissioning EIA – Baseline Verification
[82] WSP (2024). Hinkley Point B Decommissioning EIA – Baseline Verification
[83] EDF Energy Nuclear Generation Ltd (2014 to 2018). Hinkley Point B Integrated Land Management Plan
[84] NNB GenCo (HPC) Ltd. (2019). Bat Habitat Connectivity Along Green Lane. Mott MacDonald.

4.4.7. In 2012, to better understand their use of the wider landscape around HPC, Greena Ecology Consultancy were commissioned by the Applicant to undertake radio-tracking studies of barbastelle bats. Twelve female bats were caught and radio-tracked in late summer 2012. Based on an analysis of their results, Greena Ecology identified important foraging areas for barbastelle bats. The bats ranged widely from their roosts within the SAC, making use of larger woodland and more substantial linear features, such as Green Lane, Stogursey Brook and Kilve and Holford Watercourses. There was also use of the coastline and tidal area at Kilve.

Bat Surveys

4.4.8. Baseline bat surveys in 2019[80] recorded low levels of barbastelle bat activity within the Site and adjacent/perimeter areas (<0.1% (25) of all bats recorded by static detector), mainly associated with a pond in spring/May (80% of Barbastelle recordings, including a peak of 12). This species was also occasionally recorded (one or two recordings) at the pond in autumn (October) and in the habitats to the east in spring (May) and early summer (June), as well as near ditches within the south-east limit of the Study Area (<200m from the Works Area).

4.4.9. As indicated above, during HPC Baseline Bat Surveys, low levels of barbastelle bat activity were recorded during activity transects and automated surveys within and around the HPC site boundary, the nearest record being approximately 800m to the south west of the HPB decommissioning works area.

4.4.10. The Core Sustenance Zone (CSZ) for this species is at least 6 km (Collins, 2023), whilst the SAC is 7 km from the Works Area. It is feasible therefore that barbastelles from the SAC could visit the Works Area.

4.4.11. *Myotis* species were recorded but could not be identified to species level. No confirmed observations of Bechstein's bats have been recorded during any bat surveys undertaken.

OTTER RECORDS

Desk Study Records

4.4.12. Otter is a qualifying feature (not a primary reason for site selection) of The Exmoor & Quantock Oakwoods SAC, located 6.7km south west of the Site. Huntspill River National Nature Reserve (NNR), located 7.7km east of the Site, is an artificial river created in 1940 that holds a large stock of coarse fish and supports otters.

4.4.13. The Desk Study includes records of otter activity within 3 km of the Site. Somerset Environmental Records Centre (SERC) hold 12 records of otter within 3 km of the Site, dated between 2015 and 2017, the closest of which is approximately 20m south east of the Site boundary. The HPB LMARs and ILMP also include details of otter records within the Study Area.

4.4.14. Somerset Wildlife Trust (Somerset Wildlife Trust biodiversity warden,2019 pers. Comm; Wood, 2021b)) reported otter spraints observed on approximately 10 separate occasions over the previous four years, usually around the tilting weir on Cole Lane (National Grid Reference ST 21635 45873), directly outside the eastern Site boundary, with the last of these in 2018.

Otter Surveys

4.4.15. Baseline otter surveys were undertaken in 2019 extending to a 250m perimeter around the Site. No evidence of otter activity or resting sites were recorded.

4.4.16. The survey was repeated to inform Baseline Verification in 2024 and otter activity (footprints and anal secretions) was recorded on a ditch, which at its closes point is approximately 40m from the Works Area and screened from it by woodland and scrub.

4.4.17. The ditches within 250m of the Works area are of low to moderate suitability for otter. This reflects the suitability of the ditches as commuting corridors for otter, the presence of a foraging resource and limited habitat suitable for den/holt creation, due to lack of dense vegetation and features such as tree roots and/or sheltered banks.

4.4.18. It is likely that otters commute through and/or forage within the Study Area intermittently. The intermittent, low level of otter activity within the Study Area is likely to be attributable to the ditch management regime (managed by the Internal Drainage Board) and limited suitable locations/habitats for holt creation.

4.5 POTENTIAL IMPACT PATHWAYS

4.5.1. This step identifies whether impacts of the Proposed Works described in Step 2 (see **Chapter 2**) have the potential to result in LSE on the qualifying features of the relevant sites from the National Site Network.

4.5.2. The main mechanisms by which the Proposed Works could affect National Site Network sites are through either direct or indirect impact pathways and associated potential effects are presented in **Table 4-6**.

ZONE OF INFLUENCE

4.5.3. The spatial scope of any HRA should be based on the likely environmental outcomes of the scheme, its ZoI and the interest features of the relevant site from the National Site Network that may be affected and their potential vulnerabilities. Many interest features from the National Site Network (particularly animal species) may use or be reliant on non-designated habitats outside of a National Site Network site during their life-cycle. Developments some way from sites from the National Site Network can therefore have an effect if its interest features are reliant on the habitats being affected by the development.

4.5.4. Where applicable, the threats, pressures and activities listed within the Natura 2000 Standard Data forms have also been considered, as well as the project and species-specific ZoI.

4.5.5. Drawing on the effects which have the potential to arise as a result of the Proposed Works, specific ZoI have been established. For each potential effect, the ‘worst-case scenario’ has been considered, ensuring that zones capture all relevant sites for which a potential interaction may exist. These are also presented in **Table 4-6.**

4.5.6. Where sensitivities and ZoI overlap, this denotes the presence of a potential pathway of effect, which shall be subsequently described and assessed further within this Screening Report (see **Chapter 4.6**).

Table 4-5 Potential impact pathways, effects and Proposed Works ZoI, across all phases of the Proposed Works

Receptor	Potential Pressure	Aspect of Proposed Works	Proposed ZOI	Justification for ZOI
Intertidal and Subtidal Habitats	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	AEDL and STPL	Jack-up Barge (JuB) Feet (0.5m^2 x 4) = 2m^2	A single JuB is required at the end of the CW Outfall Channel. Each of the JuB feet will impact an area of approximately 0.5m^2 resulting in a total estimated footprint of seabed disturbance of 2m^2.
		CW intake structure dismantling	Excavator Barge Feet = 6m^2 Crane Barge Feet = 10m^2 Anchor Placement = 80m^2	A JuB (Excavator Barge) with a long-reach excavator is required. Each of the JuB feet will impact an area of approximately 0.5m^2 of seabed resulting in a total estimated footprint of disturbance of 2m^2. The JuB will need to reposition three times resulting in a total estimated area of seabed disturbance of 6m^2. A Crane Barge is also required as per **Table 3-2**. Each of the Crane Barge feet, assuming JuB size, will impact an area of approximately 0.5m^2 and may need to be repositioned five times. The total footprint impact by the crane barge is approximately 10m^2.
	Siltation rate changes, including smothering (depth of vertical sediment overburden)	CW intake structure dismantling	Works Area plus a buffer of 10km	Works in the marine environment have the potential to disturb marine sediments, resulting in a general increase in levels of total suspended sediment (TSS). Depending on the composition of the seabed (i.e. the particle size distribution and cohesiveness), this may also result in materials entering the water column. Applying a highly precautionary approach, the spatial extent of any increase in suspended sediment concentrations due to the disturbance of the seabed is not expected to extend more than 10km from the Proposed Works, with the majority of particles (~90%) tending to be deposited within 1km of works[85]. On this basis, a ZoI for potential changes in key water quality parameters
	Changes in suspended solids (water clarity)	CW intake structure dismantling	Works Area plus a buffer of 10km	

[85] BERR (2008). Review of Cabling Techniques and Environmental Effects applicable to the Offshore Wind farm Industry. Technical Report, Department for Business Enterprise and Regulatory Reform (BERR), in association with Defra, 164pp

Receptor	Potential Pressure	Aspect of Proposed Works	Proposed ZOI	Justification for ZOI
				(including TSS, salinity, dissolved oxygen, and levels of contaminants/nutrients) of 10 km has been established. Whilst it is acknowledged that this is at a smaller scale than the standard tidal excursion of the Severn Estuary (~20km), it is considered appropriate due to the naturally high levels of suspended sediment present in the Estuary, and the anticipated speed at which any small increases in suspended solids will be subsumed into these background levels.
	Physical loss	AEDL and STPL	Four Pipelines (0.15m diameter X 220m length) = 132m^2	The AEDL and STPL requires the installation of four pipelines extending approximately 220m beyond the existing CW outfall. There will be temporary habitat loss associated with the installation.
Marine Mammals	Underwater noise changes	CW intake structure dismantling	The Works Area plus impact range estimated within underwater noise technical note (not yet available)	Effect ranges are dependent on the activity. Extent of effect requires specific underwater noise modelling to determine ZOIs for the activities in the Proposed Works.
	Changes to supporting habitat and prey availability	CW intake structure dismantling AEDL and STPL	Works Area plus a buffer of 10km	As a precautionary approach, the worst-case ZOI for habitats has been utilised for this pressure.
Fish	Underwater noise changes	CW intake structure dismantling	The Works Area plus impact range estimated within underwater noise technical note (not yet available)	Effect ranges are dependent on the activity. Extent of effect requires specific underwater noise modelling to determine ZOIs for the activities in the Proposed Works.
	Barrier to species movement	CW intake structure dismantling	The Works Area plus impact range estimated within underwater noise technical note (not yet available)	Propagation of underwater noise is the pressure most likely to impact migratory fish movement and act as a barrier to species movement and therefore been used for this pressure.

Receptor	Potential Pressure	Aspect of Proposed Works	Proposed ZOI	Justification for ZOI
		AEDL and STPL		
	Changes to supporting habitat and prey availability	CW intake structure dismantling AEDL and STPL	Works Area plus a buffer of 10km	As a precautionary approach, the worst-case ZOI for habitats has been utilised for this pressure.
Otter	Physical damage/disturbance to otter dens/holts/rest/shelter sites	Building and plant dismantling, deconstruction and demolition.	Works Area	The Proposed Works are to be confined within the Works Area
	Noise/vibration/visual disturbance of otter dens/holts/rest/shelter sites	Building and plant dismantling, deconstruction and demolition.	Works Area plus a 200m perimeter	Encompassing a precautionary distance (200 m) over which breeding otters can be disturbed (Naturescot[86]).
	Damage to, or severance of, commuting/dispersal routes and foraging habitats	Building and plant dismantling, deconstruction	Works Area	The Proposed Works are to be confined within the Works Area

[86] NatureScot. *Standing advice for planning consultations – Otters*. [Online]. Available at: www.naturescot.com

Receptor	Potential Pressure	Aspect of Proposed Works	Proposed ZOI	Justification for ZOI
		and demolition.		
	Reduction in habitat suitability due to illumination by artificial lighting.	Building and plant dismantling, deconstruction and demolition.	Works Area	The Proposed Works are to be confined within the Works Area. No increase in lighting within the Works Area is proposed.
Bats	Physical damage/disturbance to roost habitat	Building and plant dismantling, deconstruction and demolition.	Works Area	The Proposed Works are to be confined within the Works Area.
	Noise/vibration disturbance of roosts	Building and plant dismantling, deconstruction and demolition.	Works Area plus a 30 m buffer	The Proposed Works are to be confined within the Works Area. A precautionary, worst-case ZOI of 30 m is applied with respect to noise/vibration.
	Damage to, or severance of, flightpaths and foraging habitats	Building and plant dismantling, deconstruction and demolition.	Works Area	The Proposed Works are to be confined within the Works Area
	Reduction in habitat suitability due to illumination by artificial lighting.	Building and plant dismantling, deconstruction	Works Area	The Proposed Works are to be confined within the Works Area. No increase in lighting within the Works Area is proposed.

Receptor	Potential Pressure	Aspect of Proposed Works	Proposed ZOI	Justification for ZOI
		and demolition.		
Birds	Visual disturbance	Building and plant dismantling, deconstruction and demolition.	500m from the Proposed Works	Encompassing a precautionary 500 m ZOI, within which intertidal birds can be disturbed[18]
	Above water noise	Building and plant dismantling, deconstruction and demolition.	500m ZoI from the Proposed Works	Encompassing a precautionary 500 m ZOI, within which intertidal birds can be disturbed[18]
	Loss of or alteration to supporting habitat	Building and plant dismantling, deconstruction and demolition.	500m ZoI from the Proposed Works	Encompassing a precautionary 500 m ZOI, within which intertidal birds can be disturbed[18]

Table 4-6 Pressures/impacts screened out of the HRA including justification

Pressured Screened Out of HRA	Receptor	Justification for Screening Out of the HRA Process
Hydrocarbon and Polycyclic Aromatic Hydrocarbons (PAH) contamination	Intertidal and Subtidal Habitats Marine Mammals Fish	Accidental spillages have been screened out of the HRA for the following reasons: ▪ The likelihood of accidental spillage occurring is extremely low and the risk is no greater than that for any other commercial vessel operations in the Severn Estuary ▪ All vessels and plant involved in the Proposed Works would adhere to standard pollution control measures such as those established under the International Convention for the prevention of Pollution from Ships (MARPOL) and ▪ Pollution risk and pollution controls will be managed in accordance with the Integrated Management System (IMS) which aligns to best practice guidelines
Smothering and siltation rate changes	Marine Mammals Fish	The Proposed Works may result in a temporary increase in suspended sediment concentrations. Applying a precautionary approach, the geographic extent of any increase in suspended sediment concentrations due to the disturbance of the seabed is not expected to extend more than 10 km from the Proposed Works, with the majority of particles (~90%) tending to be deposited within 1 km of the Proposed Works. Particle size analysis (within the Works Area for the CW intake structure dismantling and AEDL and STPL) indicates sediments are primarily sandy. HPBG_12 (in close proximity to the CW intake) was comprised of 68.48% sand, 31.08% mud and 0.44% gravel (**Appendix 9A** of the **ES**). No PSA sample was taken at HPBG_05 (in proximity to the AEDL and STPL) due to presence of *Sabellaria alveolata* reefs on sand-abraded eulittoral rock, however the substratum preferences for *S.alveolata* reefs are large to very large boulders, small boulders, cobbles, pebbles and sand[87]. This further supports that any sediment mobilised will be temporary and largely constrained to the Works Area. Suspended sediment concentrations in the Severn Estuary are high with main sediment sinks or fine sediment occurring in Bridgwater Bay (east of the Proposed
Changes in suspended solids (water clarity)	Intertidal and Subtidal Habitats Marine Mammals Fish	

[87] Tillin, H.M., Jackson, A., Garrard, S.L., & Watson, A., 2024. Sabellaria alveolata reefs on sand-abraded eulittoral rock. In Tyler-Walters H. and Hiscock K. (eds) Marine Life Information Network: Biology and Sensitivity Key Information Reviews, [Online]. Plymouth: Marine Biological Association of the United Kingdom. [cited 06-12-2024]. Available from: https://www.marlin.ac.uk/habitat/detail/351

Pressured Screened Out of HRA	Receptor	Justification for Screening Out of the HRA Process
		Works)[88] [89]. The volume of suspended sediment mobilised from the Proposed Works is considered to be well within the natural variability experienced within the Severn Estuary. Furthermore, potential disturbance through increase suspended sediment will be temporary as once the Proposed Works have ceased, the sediment source is removed, and the tidal regime acts to further reduce suspended sediment concentrations. For intertidal and subtidal habitats, the Seven Estuary EMS Advice on Operations[90] suggests that intertidal and subtidal qualifying features all have a 'Low Vulnerability' and considered to be 'Moderately to Highly Exposed' to changes in suspended solids (turbidity). Additionally, the Advice on Operations states fine sediments are mainly derived from erosion of the intertidal zone and suspended sediments from rivers entering the estuary and as a result of high tidal energy of the Severn Estuary, the concentration of suspended sediment and turbidity are naturally very high. The highest average level of turbidity is between Avonmouth and the outer part of Bridgewater Bay (where the Proposed Works are located). For fish in particular, the Seven Estuary EMS Advice on Operations states that Annex II fish species have low vulnerability to changes in suspended sediment and unknown vulnerability to turbidity. This would be unlikely to result in a significant effect to or prevent the achievement of the conservation objectives for the 'assemblage of migratory fish species' and qualifying fish features of designated sites. Furthermore, the Seven Estuary EMS Advice on Operations states that these species, given the size of the estuary are unlikely to be adversely affected by localised activities, such as those presented by the Proposed Works.

[88] A.J. Manning, W.J. Langston, P.J.C. Jonas. (2010) A review of sediment dynamics in the Severn Estuary: Influence of flocculation, *Marine Pollution Bulletin*, Volume 61, Issues 1–3, Pages 37-51, ISSN 0025-326X, https://doi.org/10.1016/j.marpolbul.2009.12.012.
[89] Cannard, P. (2016). The Sediment Regime of the Severn Estuary literature Review. Available online at: https://severnestuarycoastalgroup.org.uk/wp-content/uploads/sites/4/2016/02/The-Sediment-Regime-of-the-Severn-Estuary-Literature-Review.pdf (Accessed November 2024)
[90] Natural England. (2009).The Severn Estuary / Môr Hafren European Marine Site Regulation 33 Conservation Advice Package. Available online at: https://publications.naturalengland.org.uk/publication/3184206 (Accessed November 2024)

Pressured Screened Out of HRA	Receptor	Justification for Screening Out of the HRA Process
		For marine mammals, there are no direct effects/route of impact in relation to siltation rate changes or changes in suspended solids (water quality)[91]. Therefore, these pressures are not considered further for these receptors.
Water flow (tidal current) changes (local)	Intertidal and Subtidal Habitats	**Chapter 10: Coastal Management and Water Quality** of the ES considered the effects of the dismantling of the CW Intake Structure on tidal flows. It stated that the CW Intake Structure will provide some restriction to tidal flows, however, is considered to be minor based on the footprint of the intake. Furthermore, the alignment of the intake with respect to tidal currents (i.e. generally parallel to the shore) and the principal direction of wave propagation means water and sediment is already able to be transported around the infrastructure by tidal flows with only local perturbation. The removal of the CW intake will result in very small, localised changes to the hydrodynamic regime which do not represent a significant change to the existing conditions. Considering the localised and minimal nature of changes to tidal flows, return to more natural hydrodynamic conditions and wider extent of intertidal and subtidal habitats within the Severn Estuary, no likely significant effects would be anticipated. Therefore, this pressure is not considered further.
Collision below water with static or moving objects not naturally found in the marine environment (e.g. boats, machinery and structures)	Marine Mammals Fish	While the Proposed Works would temporarily increase the level of vessel activity within the Works Area for the duration of the works, vessels will be confined to the Works Area for the majority of the duration of the works. During the Proposed Works, most vessels are likely to be stationary within the Works Area or slow moving and therefore collision risk with receptors is considered low. Over the 4-month duration of the works, approximately 16 service barge movements are anticipated to transport waste material from the Works Area to Avonmouth Port. It is acknowledged that the peak of vessel movements will depend on the Proposed Works programme, however the anticipated number of movements is considered negligible in the context of wider vessel movements in the Severn Estuary. This pressure is therefore not considered further.

[91] Pérez-Domínguez, R., Barrett, Z., Busch, M., Hubble, M., Rehfisch, M. & Enever, R. (2016). Designing and applying a method to assess the sensitivities of highly mobile marine species to anthropogenic pressures. Natural England Commissioned Reports, Number 213.

Pressured Screened Out of HRA	Receptor	Justification for Screening Out of the HRA Process
Introduction or Spread of Invasive Non-Native Species (INNS)	Intertidal and Subtidal Habitats Marine Mammals Fish	The introduction of INNS will be managed in accordance with standard operating procedures under the International Convention for the Control and Management of Ship's Ballast Water and Sediments. This pressure is therefore not considered further.
Introduction of Light	Intertidal and Subtidal Habitats Fish	During the Preparation for Quiescence phase, additional lighting may be necessary at the start and end of the working day during winter months to ensure a safe working environment. The Proposed Works in the marine environment will be limited to a 6-hour operational window in daytime hours, therefore the potential for light resulting from the Proposed Works is not considered further.
Introduction of Microbial Pathogens Nutrient Enrichment Organic Enrichment Radionuclide contamination Deoxygenation	Intertidal and Subtidal Habitats Marine Mammals Fish	There is activity in the marine environment, to isolate and dismantle the Cooling Water Intake Structure, and in the intertidal environment, to install a new AEDL and STPL. Radioactive wastes and discharges are not in scope of the EIADR Application, due to the relevant regulations and compliance processes already in place to manage their environmental effects and thus ensuring no likely significant effects on the environment; therefore, radioactive wastes and discharges are not considered further. Furthermore, none of the Proposed Works will introduce material into the marine/estuarine environment, therefore there is no impact pathway for the introduction of nutrients, organic matter or pathogens.
Deterioration in water quality and freshwater habitats	Otter	There is no hydrological connectivity between the Works Area and the surrounding ditch network.
Deterioration in air quality due to dust and aerial emissions from vehicles/plant	Terrestrial habitats and associated species	Based on the Institute of Air Quality Management (IAQM) guidance dust emissions are most likely to affect ecological receptors within 0.05 km of the boundary of the Works Area and the route(s) used by mobile machinery, increasing to 0.25 km from the Site entrance for mobile machinery on the public highway. There are no terrestrial SAC habitats within 0.05 km. The predicted change in traffic levels on the construction route, attributable to the Proposed Works, is up to 100 LDV AADT (30 HDV AADT). This is well below the threshold that triggers a detailed assessment of the effects of vehicle emissions on statutory biodiversity conservation sites. It is also well below the change in traffic flow that would be likely to cause an increase in background concentration of NOx or Ammonia that is equivalent to >1% of CL at a distance of 0.025 km.

4.6 HRA SCREENING STEP 4: ASSESSING THE PRESENCE OF LIKELY SIGNIFICANCE EFFECTS ON THE NATIONAL SITE NETWORK

INTRODUCTION

4.6.1. This step identifies whether the Proposed Works described in Step 2 (**Chapter 3**) and potential effects described in Step 3 (**Chapter 4**) have the potential to result in LSE on the qualifying features of those relevant sites from the National Site Network within the Study Area and relevant ZoIs. For distant sites, where there is no pathway of effect overlap between the relevant project ZoI and species study areas, the qualifying feature has not been carried forward into the Screening assessment, for example habitats and non-mobile features, however, mobile features may have been considered.

4.6.2. Each National Site Network site and their relevant qualifying features, and screening rationale are detailed in **Table 4-7.** Sites considered within this Screening exercise are presented in **Figure 4.2** and **Figure 4.3**.

Table 4-7 National Site Network sites, relevant qualifying features, and potential for LSE

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Severn Estuary SPA/Ramsar	Bewick's swan (w)	Direct disturbance/potential displacement effects through airborne noise, light and visual disturbance	SPA/Ramsar falls within a 500m ZoI from the Proposed Works	LSE are screened out for these species based on no records within a ZoI of the Proposed Works or wider survey areas following extensive survey coverage.	NO
	Gadwall (w)				NO
	Greater white-fronted goose (w)				NO
	Dunlin (w)			Low numbers of dunlin (peak count of 4 and 56) were recorded during 2016/17 and peak count of 4 were recorded during HPC intertidal surveys in 2018/19. There were no records for the species during 2017/18 and 2018/19, while there was a peak count of just 3 during the HPB 2019/20 surveys and none recorded for the HPC 2019/20 surveys. However, there was a peak count of 420 in the 2020/21 surveys, and a peak of 68 in 2022/23 (although dunlin were again absent in 2021/22. On no occasions did any peak counts exceed one percent of the GB overwintering population threshold or indeed one percent of the cited SPA population. The peak count in 2020/21 did however approach one percent (0.94%) of the cited SPA population. The limited observations of this species over	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				the survey period indicates a low frequency of use within the Survey Area. There is however potential for disturbance effects on the dunlin that do on occasion utilise the area within the ZoI and LSE is therefore screened in at this site.	
	Shelduck (w)			Distribution surveys have showed that the spread of shelduck around high tide have remained broadly consistent across survey years (2016 – 2023), with birds primarily concentrated around Fenning Island, Stert Island and Stert Point (the 'core roost areas'). Disturbance surveys have identified that the core roost area continues to be the most sensitive area for moulting shelduck (when most birds that roost there are flightless). In light of the distance between the Proposed Works Area and these core roost areas (~5.5km at the nearest point), no impact pathways are identified. However, monitoring has also identified a smaller but still significant secondary concentration off Hinkley Point where counts have exceeded the 1% SPA threshold in grid squares within 500m of the Proposed Works Area (between	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				2016 – 2019; no focal disturbance/distribution surveys were undertaken after this point), in addition to population data recorded between 2016 and 2023. The key activities during the decommissioning works that could cause disturbance to shelduck feeding or roosting on the intertidal habitat/open water are the demolition of the Intake Structure, installation of the new AEDL and STPL, and the associated movement (and operation) of machinery and workforce. LSE is therefore screened in at this site.	
	Redshank (w)			Redshank were absent in the ZoI in all surveys between 2016 and 2019. Small numbers were recorded thereafter, with peak counts of 3 birds in each of 2019/2020, 2020/2021 and 2021/2022 and a peak count of 9 birds in 2022/2023. No peak counts of redshank approached one percent of the SPA cited population. Although it is evident that the ZoI is not of notable importance to redshank, the potential for disturbance on the	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				birds present remains. LSE is therefore screened in for this species at this site.	
	Waterbird assemblage: Eurasian wigeon (w), Teal (w), Mallard (w), Shoveler (w), Grey plover (w), Lapwing (w), Whimbrel (p), Curlew (w), Spotted redshank (w), Ringed plover (w/p), Herring gull (w), Knot (w), Black-headed gull (w), Black-tailed godwit (w), Pochard (w), Turnstone (w), Tufted duck (w), Oystercatcher (w), Dark-bellied brent goose (w), Light-bellied brent goose (w), Little egret (w)			LSE is screened in for the waterbird assemblage species based on the records within a ZoI of the Proposed Works. It is however noted that several species included in the assemblage were unrecorded throughout the extensive survey coverage (whimbrel, knot, black-tailed godwit, pochard, tufted duck). Shoveler was not recorded during HPB Baseline Surveys (2019/2020), HPC intertidal surveys (2020 – 2023) or surveys to inform HPB LMARs (2020 – 2021 and 2023). The combined (6 surveys) annual count recorded by LMAR monitoring in a single year (2021/2022) indicates only intermittent and irregular presence of this species along the coast at HPB.	YES
Severn Estuary Ramsar	Lesser black-backed gull (b)	Direct habitat loss	SPA/Ramsar falls within a 500m ZoI from the Proposed Works; and nesting birds recorded within	Buildings within the Proposed Works Areas have been identified as supporting breeding lesser black backed gull. 20 pairs were recorded in 2019 (0.98% of the SPA population), 7 pairs were recorded	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			the Proposed Works Area	in 2021 (0.34% of the SPA population); and 6 pairs (0.29% of the SPA population) were recorded in 2022 and 2023. The overall numbers at Hinkley Point Power Station are likely to have declined since 2016 due to the removal of roofing at HPA. In addition to which, a variety of deterrents are deployed within the Proposed Works Area including netting and other non-lethal deterrent methods including lasers, bioacoustics and anti-bird spikes. On this basis, given the lower numbers of nesting pairs and the programme of deterrence in place within the Site, LSE are screened out for lesser black-backed gull at this site.	
	Ringed plover	Direct disturbance/potential displacement effects through airborne noise, light and visual disturbance	SPA/Ramsar falls within a 500m ZoI from the Proposed Works Area	Low numbers of ringed plover were recorded during the survey coverage (max mean peak count of between 1 and 26) were recorded during intertidal surveys between 2016 – 2023. Given however that the peak count of 26 does represent 3.5% of the Ramsar sited population LSE is screened in.	YES
	Teal			Teal were absent for several years and in limited numbers in HPB and	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				HPC intertidal bird surveys. A peak count of 11 teal were recorded in the HPB baseline surveys 2019/2020 which represents 0.24% of the Ramsar cited population. Similarly, low peak counts have been recorded in HPC Annual Monitoring, ranging from (0 – 6) between 2019 and 2023. However, cumulative 'annual counts' over 6 survey visits to support HPB LMARs between October and March, recorded 52 teal on the 'East Pond', a pond approximately 100 m east of the Works Area (Sewage Treatment Plant) in 2020/21, 178 in 2021/22 and 298 in 2022/2023. There is therefore potential for disturbance effects on teal within the ZoI and LSE is therefore screened in at this site.	
	Pintail (w)			Pintail numbers have fluctuated over the past 7 years, with generally low numbers recorded annually during intertidal surveys: HPC Intertidal surveys 2017/18 - peak count 12; HPC Intertidal surveys 2018/2019 - peak count 44, HPC Intertidal surveys 2019/2020 –	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				peak count (all sectors) 16; and HPC Intertidal surveys 2020/2021 - peak count (all sectors) – 60. HPC Intertidal surveys 2021/22- peak count (all sectors) of 96, HPC Intertidal surveys 2022/23- peak count (all sectors) of 54. Two instances of larger peak counts were recorded during HPB Intertidal bird surveys 2016/2017 - Count sector 5 peak count 210; and HPB Intertidal surveys 2019/20 - 270 birds in November 2019 (recorded within Sector 2). Both of these counts exceeded the one percent GB overwintering population threshold (200) and also represent 27.8 and 35.7 % respectively of the cited Ramsar population. There is therefore potential for disturbance effects on pintail within the ZoI and LSE is therefore screened in at this site.	
	Estuaries	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Ramsar falls within a 500m ZoI from the Proposed Works Area.	There is the potential for interaction between the Proposed Works and the designated feature, although this is likely to be limited, due to the small physical scale of works in the marine environment, and the high	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

		Siltation rate changes, including smothering (depth of vertical sediment overburden)		ambient levels of suspended sediment in the Severn Estuary. Furthermore, the sediment present in the vicinity of the Proposed Works has arisen from within the Estuary system, and therefore shares the same composition; on this basis, changes in water quality are not predicted. However, due to the identified potential pathway of effect, the potential for LSE at this site cannot be excluded at this stage.	
	Assemblage of migratory fish: Salmon Sea trout Sea lamprey River lamprey Allis shad Twaite shad European eel	Underwater noise changes	Ramsar falls within a 500m ZoI from the Proposed Works Area.	There is potential for underwater noise impacts to migratory fish (and fish within the wider assemblage) as a result of the Proposed Works. In absence of specific noise information for activities the potential for LSE cannot be ruled out and therefore underwater noise is screened in for further consideration.	YES
		Barrier to species movement		The Proposed Works have the potential to act as a barrier to species movement as a result of underwater noise generated by the Proposed Works. Depending on the timing of the works, this has the potential to coincide with seasonal windows for migratory fish and act	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				as a barrier to species movement to freshwater rivers. In absence of information on underwater noise, this pressure has been screened in for further consideration.	
		Changes to supporting habitat and prey availability		On the basis that Annex I habitats that are qualifying features of the Severn Estuary Ramsar are being taken through to appropriate assessment, there is the potential for temporary and permanent habitat loss and disturbance as the Proposed Works overlap with the Severn Estuary Ramsar which could affect foraging grounds for fish. The footprint for permanent and temporary habitat loss and disturbance is limited to the Works Area and is localised in comparison to the wider extent of supporting habitats in the Severn Estuary. Temporary habitat disturbance will be short-lived, over a period of months. However at this stage LSE cannot be ruled out and therefore this will be considered further.	YES
Somerset Levels and Moors SPA	Bewick's swan	Direct disturbance/potential displacement effects through airborne noise, light and visual disturbance	SPA/Ramsar qualifying features potentially utilise habitats within a 500m ZoI from	LSE are screened out for this species based on no records within a ZoI of the Proposed Works or wider survey areas following extensive survey coverage.	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

	Golden plover		the Proposed Works Area	LSE are screened out for this species based on the limited records within a ZoI of the Proposed Works or wider survey areas following extensive intertidal survey coverage. The nearest identified FLL where this species has been recorded is Stockland Marshes (approximately 2.8km to the southeast of the Proposed Works area. Given the temporary nature of the Proposed Works in the marine environment, any low-level utilisation in this area is unlikely to result in any sustained loss of resource for these species and therefore there is no potential for LSE at this site.	NO
Somerset Levels and Moors SPA/Ramsar	Teal	Direct disturbance/potential displacement effects through airborne noise, light and visual disturbance	SPA/Ramsar qualifying features potentially utilise habitats within a 500m ZoI from the Proposed Works Area	LSE are screened out for this species based on the limited records within a ZoI of the Proposed Works or wider survey areas following extensive survey coverage.	NO
	Lapwing			LSE are screened out for this species based on the limited records within a ZoI of the Proposed Works or wider survey areas following extensive intertidal survey coverage. The nearest identified FLL where this species	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				has been recorded is Stockland Marshes (approximately 2.8km to the southeast of the Proposed Works area. Given the temporary nature of the Proposed Works, any low-level utilisation in this area is unlikely to result in any sustained loss of resource for these species and therefore there is no potential for LSE at this site.	
Somerset Levels and Moors Ramsar	Wigeon	Direct disturbance/potential displacement effects through airborne noise, light and visual disturbance	SPA/Ramsar qualifying features potentially utilise habitats within a 500m ZoI from the Proposed Works Area	LSE are screened out for wigeon based on the limited records within a ZoI of the Proposed Works or wider survey areas following extensive survey coverage. Given the temporary nature of the Proposed Works, any low-level utilisation in this area is unlikely to result in any sustained loss of resource for these species and therefore there is no potential for LSE at this site.	NO
	Mute swan			LSE are screened out for this species based on the limited records within a ZoI of the Proposed Works or wider survey areas following extensive survey coverage.	NO
	Pintail			See Severn Estuary Ramsar.	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

	Shoveler			LSE are screened out for this species based on the limited records within a ZoI of the Proposed Works or wider survey areas following extensive survey coverage.	NO
Exmoor and Quantock Oakwoods SAC	Barbastelle bat	Direct disturbance/potential displacement effects through airborne noise, light and visual disturbance	SAC lies approximately 7 km to the south west of the Proposed Works Area and outside the likely 6km Core Sustenance Zone (CSZ) of this species	Barbastelle bats disperse from roosts (>15km) and spread thinly across the landscape, with the majority relying on areas within 6km (Core Sustenance Zone) and 1km for juveniles. The Works Area is c.7 km from the SAC, beyond the CSZ. Less than half of the Works Area is bordered by suitable forging habitat – and this suitable habitat is located to the east, further from the CSZ. Roost surveys (2019) and annual bat box monitoring (to 2023) have not recorded barbastelle bats and roost suitability within the Works Area is mainly negligible[92] to low.	NO

[92] The categorisation of structures as being of '*Negligible'* suitability for roosting bats also includes those that have no suitability, with this additional category ('*None*') having been introduced by the most recent edition of the bat survey guidelines (Collins 2023).

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				Low levels of barbastelle activity recorded within the Site, outside of the Works Area, is consistent with low activity recorded annually at HPC to the south-west. The Works Area is however of negligible suitability for foraging/commuting bats (hardstanding, lighting). The Proposed Works: Will not result in any environmental effects within the barbastelle bats' CSZs. Will not result in loss or disturbance of bat roosts. Will not result in loss or severance of bats' foraging habitats or flightpaths. Will not increase illumination within the Works Area or light trespass onto adjacent habitats. The Proposed Works are therefore likely to have a negligible effect on barbastelle bats and LSE on this species are screened-out of the HRA.	
	Bechstein's bat		SAC lies approximately 7 km to the south west of the	Bechstein's bats can disperse c.4km from roosts however the majority rely on areas within 1 km (Core Sustenance Zone). The	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			Proposed Works Area and outside the 1km CSZ of this species	Works Area is c.7 km from the SAC and well beyond the CSZ. Roost surveys (2019) and annual bat box monitoring (to 2023) did not record Beckstein's bats and roost suitability within the Works Area is mainly negligible to low[92]. Bechstein's bats were not recorded by the baseline surveys in 2019 or by annual bat activity monitoring at HPC. Myotis species were recorded but could not be identified to species level. There were no confirmed records of Bechstein's bats during any of the bat surveys and the Proposed Works are likely to have no effect on this species. LSE on Beckstein's bats are screened-out of the HRA.	
	Otter		SAC lies approximately 7 km to the south west of the Proposed Works Area and within potential foraging range of this species	Baseline surveys of the Site and 250m perimeter in 2019 did not record any evidence of otter activity. A repeat otter survey to inform baseline verification in 2024 recorded otter activity on a ditch to the east of the Works Area. It is concluded that otter	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				Intermittently forage/commute within the Site, outside of the Works Area. Ditches east and south-east of the Works Area and the coastline are of low to moderate suitability for otter, attributable to a prey source , with little suitable habitat for dens/holts. The ditches of moderate suitability mainly extend outwards from >50m from the Works Area (a short section is within c.40m) and are screened by woodland/scrub. The habitats within the Works Area are of negligible suitability for otter. The Proposed Works: will not result in loss or severance of otter habitat. will not result in loss/disturbance of otter shelter/rest sites. will not increase illumination within the Works Area or light trespass onto adjacent habitats. Otter commuting/foraging on the ditch network are unlikely to be disturbed by the Proposed Works and would be able to disperse from	

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				any disturbance without loss of fitness. The Proposed Works are likely to have a negligible effect on any individual foraging/commuting otter. LSE on otter are screened-out of the HRA.	
Severn Estuary/Môr Hafren SAC	Estuaries	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Siltation rate changes, including smothering (depth of vertical sediment overburden)	The Works Area lies within the SAC, therefore there is potential for overlap with the Proposed Works.	There is the potential for interaction between the Proposed Works and the designated feature, although this is likely to be limited, due to the small physical scale of works in the marine environment, and the high ambient levels of suspended sediment in the Severn Estuary. Furthermore, the sediment present in the vicinity of the Proposed Works has arisen from within the Estuary system, and therefore shares the same composition; on this basis, changes in water quality are not predicted. However, due to the identified potential pathway of effect, the potential for LSE at this site cannot be excluded at this stage.	YES
Severn Estuary/Môr Hafren SAC	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	The Works Area lies within the SAC, therefore there is potential for overlap with	Atlantic salt-meadow habitat was not identified within the Works Area and therefore there is no impact pathway for direct disturbance to this habitat as a result of the Proposed Works.	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

		Siltation rate changes, including smothering (depth of vertical sediment overburden)	the Proposed Works.	Atlantic salt-meadow forms the middle and upper reaches of saltmarsh The closest area of saltmarsh in relation to the Proposed Works is approximately 1.8km SE within Bridgwater Bay. While this overlaps with the ZOI for suspended sediment mobilisation, considering the volumes generated combined with existing high levels of suspended sediment and tidal flows within the Seven Estuary, no LSE from this pressure are anticipated.	
Severn Estuary/Môr Hafren SAC	Mudflats and sandflats not covered by seawater at low tide	Siltation rate changes, including smothering (depth of vertical sediment overburden)	The Works Area lies within the SAC, therefore there is potential for overlap with the Proposed Works.	There is the potential for interaction between the Proposed Works and the designated feature, although this is likely to be limited, due to the very small physical scale of works in the marine environment, and the high ambient levels of suspended sediment in the Severn Estuary. Furthermore, the sediment present in the vicinity of the Proposed Works has arisen from within the Estuary system, and therefore shares the same composition; on this basis, changes in water quality are not predicted. However, due to	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				the identified potential pathway of effect, the potential for LSE at this site cannot be excluded at this stage. Direct impacts resulting from penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion on this qualifying feature has been screened out on the basis that the qualifying feature or sub-features were not found to be present within the Works Area.	
Severn Estuary/Môr Hafren SAC	Sandbanks which are slightly covered by sea water all the time	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Siltation rate changes, including smothering (depth of vertical sediment overburden)	The Works Area lies within the SAC, therefore there is potential for overlap with the Proposed Works.	There is the potential for interaction between the Proposed Works and the designated feature, although this is likely to be limited, due to the very small physical scale of works in the marine environment, and the high ambient levels of suspended sediment in the Severn Estuary. Furthermore, the sediment present in the vicinity of the Proposed Works has arisen from within the Estuary system, and therefore shares the same composition; on this basis, changes in water quality are not predicted. However, due to the identified potential pathway of effect, the potential for LSE at this	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				site cannot be excluded at this stage.	
Severn Estuary/Môr Hafren SAC	Reefs	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Siltation rate changes, including smothering (depth of vertical sediment overburden)	The Works Area lies within the SAC, therefore there is potential for overlap with the Proposed Works.	Approximately 3,321m2 of *Sabellaria alveolata* Annex I biogenic reef is located within the Works Area for the Cooling Water Intake Dismantling. Approximately 4,166m^2 of *S.alveolata* reef is located within the Works Area for the AEDL and STPL. It should be noted the exact footprint of disturbance will be far less than the Works Area, limited to the immediate footprint of the dismantling works and any footprint associated with the jack-up barge legs and barge anchoring. Given the proximity of the qualifying feature to the Works Area, there is the potential for LSE associated with changes in water quality, suspended sediment and smothering. There is therefore the potential for LSE in the absence of mitigation to this qualifying feature and it will be taken forward into Stage 2: Appropriate Assessment.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Severn Estuary/Môr Hafren SAC	Sea lamprey River lamprey Twaite shad	Underwater noise changes	The Works Area lies within the SAC, therefore there is potential for movements of this species to overlap with the Proposed Works.	There is potential for underwater noise impacts to migratory fish as a result of the Proposed Works. In absence of specific noise information for activities the potential for LSE cannot be ruled out and therefore underwater noise is screened in for further consideration.	YES
		Barrier to species movement		The Proposed Works have the potential to act as a barrier to species movement as a result of underwater noise generated by the Proposed Works. Depending on the timing of the works, this has the potential to coincide with seasonal windows for migratory fish and act as a barrier to species movement to freshwater rivers. In absence of information on underwater noise at the time of writing, this pressure has been screened in for further consideration. An underwater noise assessment will be completed to support the assessment of this pressure.	YES
		Changes to supporting habitat and prey availability		On the basis that Annex I habitats that are qualifying features of the Severn Estuary Ramsar are being taken through to appropriate assessment, there is the potential	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				for temporary and permanent habitat loss and disturbance as the Proposed Works overlap with the Severn Estuary Ramsar which could affect foraging grounds for fish. The footprint for permanent and temporary habitat loss and disturbance is limited to the Works Area and is localised in comparison to the wider extent of supporting habitats in the Severn Estuary. Temporary habitat disturbance will be short-lived, over a period of months. However at this stage LSE cannot be ruled out and therefore this will be considered further.	
River Usk / Afon Wsyg SAC	Sea lamprey River lamprey Twaite shad Atlantic salmon Allis shad	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 40km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

River Wye / Afon Gwy SAC	Sea lamprey River lamprey Twaite shad Atlantic salmon Allis shad	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 40km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES
River Axe SAC	Sea lamprey	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 45km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SAC lies approximately 90km from the Works Area, and within the relevant range for porpoise, therefore there is potential for interaction between the species and the Proposed Works.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The Works Area is not in an area of sea noted as being of importance for the species. This is supported by the minimal and infrequent observations of harbour porpoise during survey works at the Site (with none recorded during marine and coastal surveys associated with the Proposed Works between 2020 and 2022). . In absence of information on underwater noise at the time of writing, this underwater noise changes has been screened in for further consideration. An underwater noise assessment will be completed to support the assessment of this pressure. Potential LSE cannot be ruled out and therefore this site will be considered further at Stage 2: Appropriate Assessment.	YES
River Avon SAC	Sea lamprey Atlantic salmon	Underwater noise changes Barrier to species movement	The SAC is located approximately 102 km by land, and much further	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

		Changes to supporting habitat and prey availability	by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	
Lundy SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC lies approximately 105km from the Works Area, and within the foraging range for grey seal, therefore there is potential for interaction between the species and the Proposed Works.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The Works Area is not in an area of sea noted as being of importance for the species. . In absence of information on underwater noise at the time of writing, this underwater noise changes has been screened in for further consideration. An underwater noise assessment will be completed to support the assessment of this pressure. Potential LSE cannot be ruled out and therefore this site will be considered further at Stage 2: Appropriate Assessment.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Pembrokeshire Marine / Sir Benfro Forol SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC lies approximately 121km from the Works Area, and within the foraging range for grey seal, therefore there is potential for interaction between the species and the Proposed Works.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Pembrokeshire Marine / Sir Benfro Forol SAC	Sea lamprey River lamprey Allis shad Twaite shad	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 121 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Cardigan Bay / Bae Ceredigion SAC	Bottlenose dolphin	Underwater noise changes Changes to supporting habitat and prey availability	The SAC lies approximately 138km from the Works Area, and within the relevant ranger for bottlenose dolphin, therefore there is potential for interaction between the species and the Proposed Works.	There is strong evidence to suggest that coastal bottlenose dolphins in the Irish Sea do not tend to move into the Celtic Sea or beyond and are relatively constrained to the Irish Sea Management Unit. The population ranges beyond the boundaries of the Cardigan Bay SAC and Pen Llŷn a'r Sarnau and has been recorded within the wider Irish Sea MU, but not beyond. Photo-ID evidence demonstrates most bottlenose dolphins move between the two SACs, suggesting the populations of the SACs are highly connected[24]. Based on this evidence, there is no potential for LSE on this qualifying feature and it has been screened out of further assessment.	NO
Cardigan Bay / Bae Ceredigion SAC	Sea lamprey River lamprey	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 138 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			transverse the proposed ZoI.		
Cardigan Bay / Bae Ceredigion SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC lies approximately 138km from the Works Area, and within the foraging range for grey seal, therefore there is potential for interaction between the species and the Proposed Works.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC	Bottlenose dolphin	Underwater noise changes Changes to supporting habitat and prey availability.	The SAC lies approximately 151km from the Works Area, and within the relevant range for bottlenose dolphin, therefore there is potential for interaction between the species and the Proposed Works.	There is strong evidence to suggest that coastal bottlenose dolphins in the Irish Sea do not tend to move into the Celtic Sea or beyond and are relatively constrained to the Irish Sea Management Unit. The population ranges beyond the boundaries of the Cardigan Bay SAC and Pen Llŷn a'r Sarnau and has been recorded within the wider Irish Sea MU, but not beyond. Photo-ID evidence demonstrates most bottlenose dolphins move between the two SACs, suggesting the populations of the SACs are highly connected24. Based on this	NO

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				evidence, there is no potential for LSEs on this qualifying feature and it has been screened out of further assessment.	
	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC lies approximately 151km from the Works Area, and within the relevant range for bottlenose dolphin, therefore there is potential for interaction between the species and the Proposed Works.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Plymouth Sound and Estuaries SAC	Allis shad	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability Direct effects through disturbance / potential habitat degradation.	The SAC is located approximately 107 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Carmarthen Bay and Estuaries/ Bae Caerfyrddin ac Aberoedd SAC	Twaite shad Sea lamprey River lamprey Allis shad	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 79 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES
West Wales Marine / Gorllewin Cymru Forol SAC	Harbour porpoise	Direct disturbance through increased underwater noise levels. Indirect effects on prey species.	The SAC lies approximately 138km from the Works Area, and within the relevant range for porpoise, therefore there is potential for interaction between the species and the Proposed Works.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC. The Works Area is not in an area of sea noted as being of importance for the species. This is supported	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

				by the minimal and infrequent observations of harbour porpoise during survey works at the Site (with none recorded during marine and coastal surveys associated with the Proposed Works between 2020 and 2022). . In absence of information on underwater noise at the time of writing, this underwater noise changes has been screened in for further consideration. An underwater noise assessment will be completed to support the assessment of this pressure. Potential LSE cannot be ruled out and therefore this site will be considered further at Stage 2: Appropriate Assessment.	
Afon Tywi/ River Tywi SAC	Sea lamprey River lamprey Allis shad Twaite shad	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 107 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			transverse the proposed ZoI.		
River Itchen SAC	Salmon	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 130 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES
Afonydd Cleddau / Cleddau River SAC	River lamprey Sea lamprey	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 142 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Slaney River Valley SAC	Sea lamprey River lamprey Twaite shad Atlantic salmon	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 254 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES
Lower River Suir SAC	Sea lamprey River lamprey Twaite shad Atlantic salmon	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 291 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES
River Barrow and River Nore SAC	Sea lamprey River lamprey	Underwater noise changes Barrier to species movement	The SAC is located approximately	Given the large migratory ranges of these species there is the potential for individuals from this Site to	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

	Twaite shad Atlantic salmon	Changes to supporting habitat and prey availability	283 km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	
Blackwater River (Cork/Waterford) SAC	Sea lamprey River lamprey Twaite shad Atlantic salmon	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 335km by land, and much further by sea, from the location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	YES
River Boyne and River Blackwater SAC	River lamprey Atlantic salmon	Underwater noise changes Barrier to species movement Changes to supporting habitat and prey availability	The SAC is located approximately 352 km by land, and much further by sea, from the	Given the large migratory ranges of these species there is the potential for individuals from this Site to traverse the Works Area and proposed ZoI. The potential for LSE to Annex II migratory fish species	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			location of the Proposed Works, however migratory fish with large ranges have potential to transverse the proposed ZoI.	therefore cannot be ruled out for the same reasons as discussed for the Severn Estuary Ramsar and SAC.	
North Channel SAC	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 356 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
Rockabill to Dalkey Island SAC	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 297 km by land, and much further by sea, from the location of the Proposed Works, however marine	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			mammals with large ranges have potential to transverse the proposed ZoI.	Approaches / Dynesfeydd Môr Hafren	
North Angelsey Marine / Gogledd Môn Forol SAC	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 246 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
Blasket Islands SAC	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 513 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			transverse the proposed ZoI.		
	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 513 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	
Roaringwater Bay and Islands SAC	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 434 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 434 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	
Nord Bretagne DH SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 164 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
	Bottlenose dolphin	Underwater noise changes	The SAC is located approximately	This Site forms part of the network of designated sites within the relevant MU, therefore there is the	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

		Changes to supporting habitat and prey availability	164 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	potential for the mobile species to be in the vicinity. The Works Area is not in an area of sea noted as being of importance for the species. In the absence of information on underwater noise and as a precautionary approach however, potential LSE cannot be ruled out and therefore this National Network Site will be considered further at Stage 2: Appropriate Assessment.	
Ouessant-Molene SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 322 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 322 km by land, and much further by sea, from the	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	
Mers Celtiques Talus du golfe de Gascogne SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 311 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
	Bottlenose dolphin	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 311 km by land, and much further by sea, from the location of the Proposed Works, however marine	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The Works Area is not in an area of sea noted as being of importance for the species. In the absence of information on underwater noise and as a	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			mammals with large ranges have potential to transverse the proposed ZoI.	precautionary approach however, potential LSE cannot be ruled out and therefore this National Network Site will be considered further at Stage 2: Appropriate Assessment.	
Côte de Granit rose-Sept-Iles SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 241 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
	Bottlenose dolphin	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 241 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The Works Area is not in an area of sea noted as being of importance for the species. In the absence of information on underwater noise and as a precautionary approach however, potential LSE cannot be ruled out and therefore this National Network	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			transverse the proposed ZoI.	Site will be considered further at Stage 2: Appropriate Assessment.	
Tregor Goelo SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 241 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
	Bottlenose dolphin	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 241 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The Works Area is not in an area of sea noted as being of importance for the species. In the absence of information on underwater noise and as a precautionary approach however, potential LSE cannot be ruled out and therefore this National Network Site will be considered further at Stage 2: Appropriate Assessment.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Baie de Morlaix SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 270 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
Abers – Côte des légendes SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 295 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Chaussée de Sein SCI	Harbour porpoise	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 367 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Bristol Channel Approaches / Dynesfeydd Môr Hafren	YES
	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SCI is located approximately 367 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI. transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

North Rona SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 895 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Monach Islands SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 756 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Horn Head and	Grey seal	Underwater noise changes	The SAC is located approximately	This Site forms part of the network of designated sites within the relevant MU, therefore there is the	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Rineclevan SAC		Changes to supporting habitat and prey availability	544 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	
Slieve Tooey/Tormore Island/Loughros Beg Bay SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 528 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Inishkea Islands SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 573 km by land, and much further by sea, from the	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	
Duvillaun Islands SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 569 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Inishbofin and Inishsark SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 550 km by land, and much further by sea, from the location of the Proposed Works, however marine	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			mammals with large ranges have potential to transverse the proposed ZoI.		
Slyne Head Islands SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 537 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
Roringwater Bay and Islands SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 443 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

			transverse the proposed ZoI.		
Isles of Scilly Complex SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 257 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES
The Maidens SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 442 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES

Site	Qualifying Features
	
	w = wintering;
	p = passage;
	b = breeding
		Environmental change and potential effect	ZoI interactions	Screening Rationale	Potential for LSE

Treshnish Isles SAC	Grey seal	Underwater noise changes Changes to supporting habitat and prey availability	The SAC is located approximately 624 km by land, and much further by sea, from the location of the Proposed Works, however marine mammals with large ranges have potential to transverse the proposed ZoI.	This Site forms part of the network of designated sites within the relevant MU, therefore there is the potential for the mobile species to be in the vicinity. The potential for LSE to Annex II marine mammal species therefore cannot be ruled out for the same reasons as discussed for the Lundy SAC.	YES

4.7 IN-COMBINATION EFFECTS

4.7.1. As part of the HRA screening process, information on other projects and plans that have been subject to a HRA in relation to the common sites within the National Site Network being assessed is required to allow an assessment of any 'in-combination' effects of the proposed development (in this case the Proposed Works) with other schemes that may affect the site.

4.7.2. The screening assessment provided within this HRA takes into account the CJEU ruling on ‘People over Wind’. It has also adopted a strong precautionary principle; if a pathway of effect is established between the Proposed Works and a site within the National Site Network, then that site is taken through to appropriate assessment. Only those qualifying features and National Site Network sites where it can be demonstrated that there is no likelihood of an LSE occurring have been screened out.

4.7.3. The types of projects and plans included within the assessment of in-combination effects are:

- Under construction / decommissioning;
- Permitted application(s), but not yet implemented (those from the past 5 years have been considered, taking into account those that received planning consent over 3 years ago and are still valid, but have not been completed);
- Submitted application(s) not yet determined;
- Refused, subject to appeal procedures not yet determined;
- Developments where EIA Screening and/or Scoping has been undertaken but a full planning application has not yet been submitted;
- On the National Infrastructure Planning Programme of Projects;
- Identified local development orders;
- Identified in the local plan/development plan:
  - West Somerset Local Plan to 2032 (2016)
  - Sedgemoor Local Plan 2011 - 2032
- Identified in other plans and programmes, such as the following (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

4.7.4. A list of sites included within the in-combination assessment is presented within **Appendix C: Projects and plans considered within the in-combination assessment** of this Screening Report, along with justification as to whether they have the potential to overlap when considered together with spatial and temporal elements of the Proposed Works. Those scoped in for further consideration are set out in **Table 4-8.**

4.7.5. The sites that are to be included within the in-combination assessment are then considered with regard to the identified potential effects, designated sites, and qualifying features

Table 4-8 Other developments scoped in for consideration

	Application Reference	Description of Development	Distance to Proposed Works	Approximate distance to relevant National Site Network	National Site Network site and qualifying features where in-combination effects have potential to occur	Potential Impact Pathways
HPA	n/a Hinkley Point A Decommissioning	Hinkley Point A decommissioning. This process is being managed by the Nuclear Decommissioning Authority subsidiary, Nuclear Restoration Services (NRS) The station was fuel free by 2005. The turbine hall was demolished in 2019. The site is now focused on the safe and secure retrieval, packaging and storing of its legacy waste. Priorities for the site include completing the commissioning of the plant required to process, treat, encapsulate, and store intermediate level waste on site until a UK geological disposal	Adjacent	Adjacent to: Severn Estuary SPA Severn Estuary Ramsar Severn Estuary/Môr Hafren SAC	Severn Estuary SPA - Non-breeding/over-wintering Severn Estuary Ramsar – Waterfowl Severn Estuary/Môr Hafren SAC - Salmon (Salmo salar), sea trout (S. trutta), sea lamprey (Petromyzon marinus), river lamprey (Lampetra fluviatilis), allis shad (Alosa alosa), twaite shad (A. fallax), and European eel (Anguilla anguilla	Decommissioning works at HPA Preparations Care & Maintenance phase, which is the main phase of de-planting, dismantling and demolition, equivalent to the Preparations for Quiescence Phase at HPB. As shown on **Graphic 3-4**, there is a small temporal overlap with the Preparations for Quiescence Phase of the Proposed Works. All marine elements of the HPA decommissioning are complete. Remaining decommissioning works onshore would be of a similar scale to HPA. Overall it is considered that there is limited scope for combined effects on qualifying features of relevant National Site Network sites.

	Application Reference	Description of Development	Distance to Proposed Works	Approximate distance to relevant National Site Network	National Site Network site and qualifying features where in-combination effects have potential to occur	Potential Impact Pathways
		facility becomes available.				
1	EN010001 Hinkley Point C New Nuclear Power Station Granted DCO and Non-Material Change	Proposal for a nuclear power station with two nuclear reactors capable of generating a total of up to 3,260MW of electricity at Hinkley Point C and subsequent non-material or material amendments.	Adjacent	Adjacent to: Severn Estuary SPA Severn Estuary Ramsar Severn Estuary/Môr Hafren SAC	Severn Estuary SPA - Non-breeding/over-wintering Severn Estuary Ramsar – Waterfowl Severn Estuary/Môr Hafren SAC - Salmon (Salmo salar), sea trout (S. trutta), sea lamprey (Petromyzon marinus), river lamprey (Lampetra fluviatilis), allis shad (Alosa alosa), twaite shad (A. fallax), and European eel (Anguilla Anguilla	Direct disturbance/potential displacement effects through airborne noise, light and visual disturbance. Underwater noise. Barrier to species movement. Changes to supporting habitat and prey availability
7	23/19/00002	Hybrid (full and outline) application. Full application for the	Approximately 12km	Approximately 10.5km to Exmoor and	Barbastelle *(Barbastella barbastellus)*	None – no shared habitat loss. Outside core sustenance zone

	Application Reference	Description of Development	Distance to Proposed Works	Approximate distance to relevant National Site Network	National Site Network site and qualifying features where in-combination effects have potential to occur	Potential Impact Pathways
		erection of 114 dwellings, formation of signal-controlled access off Quantock Road with associated infrastructure, landscaping and open space (phase 1). Outline application with all matters reserved for the erection of up to 240 residential dwellings with associated infrastructure, landscaping and open space (phase 2).		Quantock Oakwoods SAC		
10	51/19/00003	Hybrid (full and outline) application. Full application for the erection of 238 dwellings, formation of two new means of access onto A39, pedestrian/cycle link onto Wembdon Hill, public open space, parking and landscaping. Outline application with all	Approximately 12km	Approximately 9.8km to Exmoor and Quantock Oakwoods SAC	Barbastelle *Barbastella barbastellus*	None – no shared habitat loss. Outside core sustenance zone

	Application Reference	Description of Development	Distance to Proposed Works	Approximate distance to relevant National Site Network	National Site Network site and qualifying features where in-combination effects have potential to occur	Potential Impact Pathways
		matters reserved, for up to 437 dwellings, 500sqm (A1-A5) and/or community uses (D1)), 2.2ha site for up to 2 Form Entry Primary School and bus gate/emergency access via Inwood Road with associated infrastructure, landscaping and works.				
13	13/23/00032	Erection of 160no. dwellings, creation of vehicular, pedestrian and cycle access, public open space, landscaping and associated works	Approximately 7.5km	Approximately 7km to Exmoor and Quantock Oakwoods SAC	Barbastelle *Barbastella barbastellus*	None – no shared habitat loss. Outside core sustenance zone
14	36/23/00011	Erection of 58 dwellings (40% affordable units) with access, landscaping, parking, public open space and associated works.	Approximately 7 km	Approximately 2km to Exmoor and Quantock Oakwoods SAC	Barbastelle *Barbastella barbastellus*	None – no shared habitat loss.

	Application Reference	Description of Development	Distance to Proposed Works	Approximate distance to relevant National Site Network	National Site Network site and qualifying features where in-combination effects have potential to occur	Potential Impact Pathways
15	28/23/00013	Change of use to allow all-year round tourism & temporary use, existing caravan storage to 45 pitches for temporary use and change of use of agricultural land for storage of 100 caravans.	Approximately 3.6km	Approximately 4.5km to Exmoor and Quantock Oakwoods SAC	Barbastelle *Barbastella barbastellus*	None – no shared habitat loss.
16	36/22/00024	Change of use of agricultural field for the provision of caravan pitches and continuation of existing caravan site for use by HPC workers until 31st December 2025. Erection of welfare building and bus shelter. Development of a footpath from site to Nether Stowey village.	Approximately 5km	Approximately 3km to Exmoor and Quantock Oakwoods SAC	Barbastelle *Barbastella barbastellus*	None – no shared habitat loss.
25	EN010102 Hinkley Point C New Nuclear Power	EN010102 Hinkley Point C New Nuclear Power Station Material Change	Adjacent	Adjacent to: Severn Estuary SPA	Severn Estuary SPA - Non-breeding/over-wintering	Underwater noise. Barrier to species movement. Changes to supporting habitat and prey availability.

	Application Reference	Description of Development	Distance to Proposed Works	Approximate distance to relevant National Site Network	National Site Network site and qualifying features where in-combination effects have potential to occur	Potential Impact Pathways
	Station Material Change			Severn Estuary Ramsar Severn Estuary/Môr Hafren SAC	Severn Estuary Ramsar – Waterfowl Severn Estuary/Môr Hafren SAC - Salmon (Salmo salar), sea trout (S. trutta), sea lamprey (Petromyzon marinus), river lamprey (Lampetra fluviatilis), allis shad (Alosa alosa), twaite shad (A. fallax), and European eel (Anguilla Anguilla).	
36	Environment Agency and Somerset Council Bridgwater Tidal Barrier	The Scheme will reduce tidal flood risk to 11,300 homes and 1,500 businesses. The whole scheme comprises of: A Tidal Barrier structure on the River Parrett next to	Approximately 12.7km	Approximately 2.5km to Severn Estuary/Môr Hafren SAC at nearest point	Severn Estuary/Môr Hafren SAC - Salmon (Salmo salar), sea trout (S. trutta), sea lamprey (Petromyzon marinus), river lamprey (Lampetra fluviatilis), allis	Disturbance/potential displacement effects

	Application Reference	Description of Development	Distance to Proposed Works	Approximate distance to relevant National Site Network	National Site Network site and qualifying features where in-combination effects have potential to occur	Potential Impact Pathways
		Express Park, Bridgwater. A substantial programme of works to improve existing downstream riverside flood banks and construct new secondary flood banks. Improved fish and eel passage at 12 upstream sites on both the rivers Parrett and Tone.			shad (Alosa alosa), twaite shad (A. fallax), and European eel (Anguilla Anguilla).	

IN-COMBINATION ASSESSMENT

4.7.6. The potential for other plans and projects to act in-combination with the Proposed Development has been considered based upon the relevant details presented within **Table 4-8** and **Appendix C: Projects and plans considered within the in-combination assessment** of this Screening Report. Of those plans and projects identified, particular focus is considered appropriate for the ongoing works at the HPC site, and those associated with the Bridgwater Tidal Barrier.

Hinkley Point C (including forthcoming material change application)

4.7.7. Works associated with the decommissioning and removal of the HPC jetty and installation of the fish recovery and return system are anticipated to be undertaken around the end of the decade. However, in the event that these works occur at the same time as the Proposed Works within the HPB Works Area, there is potential for in-combination effects on bird species identified as screened in **Table 4-7**. Therefore further consideration will be given in Stage 2 for in-combination effects.

4.7.8. The changes understood to be proposed as part of the forthcoming material change application (based on preliminary environmental information prepared to support statutory consultation) include a change to not install the acoustic fish deterrent in the cooling water intake. In addition, as part of early assessment work, it was identified that there is a potential risk of adverse effects on integrity to a small number of SACs through impingement effects on fish species, including migratory species. As a result, EDF are proposing a range of compensatory measures, including: development of saltmarsh habitat; barrier easement on key river catchments; and the creation of marine habitat, namely seagrass meadows, kelp forests, and native oyster beds. The timeframe for the development of these sites is still being established.

4.7.9. There is the potential for LSE with the Proposed Works acting in-combination with works associated with Hinkley Point C (including forthcoming material change application) on migratory fish. Therefore further consideration will be given on potential LSE for in-combination effects in Stage 2.

Bridgwater Tidal Barrier

4.7.10. The key works associated with the proposed Bridgwater Tidal Barrier will be located across the River Parrett between Express Park and Chilton Trinity. This is approximately 4.3 km upstream from the Severn Estuary SPA/Ramsar and 10-15 km upstream from the mouth of the River Parrett, which supports core roosting and loafing habitat of shelduck and other wildfowl and waders. In addition, the scheme includes construction of new secondary flood defences (and raising of existing primary defences) at Chilton Trinity, Pawlett, and Combwich.

4.7.11. The findings of the HRA Process reported by the Environment Agency to support the application for the project[93] included detailed assessment for species identified as being of potential concern, including shelduck. Therefore further consideration will be given on potential LSE for in-combination effects in Stage 2.

4.7.12. With regards to non-ornithological qualifying features, based on the above understanding of Bridgwater Tidal Barrier in particular, the potential for in-combination effects has been discounted on the basis of the small area predicted to be affected by the Proposed Works, and the short-term nature of these works. This is supported by the Bridgwater Tidal Barrier HRA, as reported by the Environment Agency, concluding that there would be no adverse effects on site integrity on the Severn Estuary SAC and Ramsar site from the perspective of fish, nor on the Bristol Channel Approaches SAC for marine mammal qualifying species.

4.8 CONCLUSIONS

SCREENING OUTCOME

4.8.1. Stage 1 of the HRA process, which includes the four-part screening steps, requires the identification of LSE upon the National Site Network as a result of the Proposed Works, either alone or 'in combination' with other projects or plans, and considers whether these LSE are likely to be significant.

4.8.2. Based upon the discussion presented, and the conclusions reached in **Section 5** (notably **Table 5.1** and **Section 5.2**), there are potential for LSEs to occur as a result of the Proposed Works in relation to potential effect pathways on the relevant qualifying features of sites within the National Network within the Study Area.

4.8.3. As there are pathways for LSEs (either alone or in-combination with any other plans or projects) on sites within the National Site Network, there is a requirement for Stage 2 of HRA, Appropriate Assessment, to be undertaken.

Figures

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320500 321000 321500 322000

146500 146000 145500

Hinkley Point A

Hinkley Point B

Key

Nuclear Site Licence Boundary ("The Site")

Indicative Dismantling Works Area ("Works Area")

0 100 200 300 m

Scale at A3: 1:6,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal Screening Report

Figure 1.1
HPB Indicative Dismantling Works Area (Works Area)

February 2024

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320500

321000

321500

146500

146000

N

Hinkley Point A

Hinkley Point B

Estimated height 66.5m

Southern access road

Key

Indicative Dismantling Works Area ("Works Area")

Nuclear Site Licence Boundary ("The Site")

Safestore structure

0 100 200 300 m

Scale at A3: 1:5,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 1: Screening

Figure 3.1
Safestore location

February 2025

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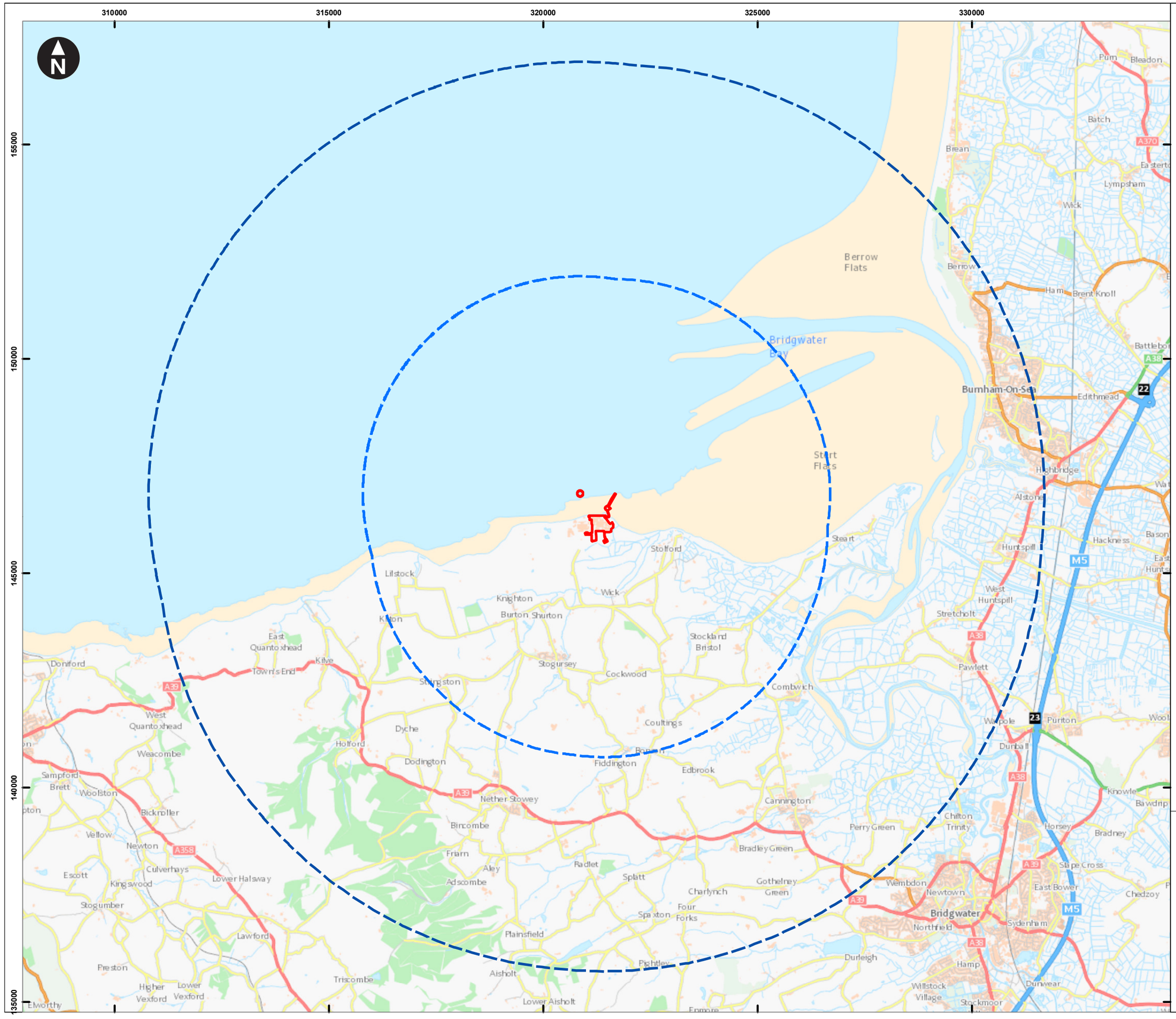

Key

- Indicative Dismantling Works Area ("Works Area")
- 5km perimeter
- 10km perimeter

Note:
For the purposes of this figure, the study areas for marine mammals and fish are not shown.

0 2,000 4,000 m

Scale at A3: 1:85,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 1 Screening

Figure 4.1
Study areas applied for HRA Screening

February 2025

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-200000 -100000 0 100000 200000 300000 400000 500000

1000000 900000 800000 700000 600000 500000

N

North Rona

Monach Islands

Inbhir Nis / Inverness

Aberdeen

Treshnish Isles

Dundee

Perth

Stirling

Edinburgh

Glasgow

Horn Head and Rinclevan SAC

The Maidens

Slieve Tooey/Tormore Island/Loughros Beg Bay SAC

North Channel

Newcastle upon Tyne

Carlisle

Durham

Inishkea Islands SAC

Duvillaun Islands SAC

Ripon

Lancaster

York

Inishbofin and Inishshark SAC

North Anglesey Marine / Gogledd Môn Forol

Rockabill to Dalkey Island SAC

River Boyne and River Blackwater SAC

Leeds

Preston

Slyne Head Islands SAC

Key

Indicative Dismantling Works Area ("Works Area")

Special Area of Conservation (SAC)

0 25 50 75 100 125 Kilometers

Scale at A3 1:2,500,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 1: Screening

Figure 4.2
SACs considered within HRA Screening

February 2025

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-200000 -100000 0 100000 200000 300000 400000

600000 500000 400000 300000 200000 100000 0

N

Horn Head and Rinclevan SAC

Slieve Tooey/Tormore Island/Loughros Beg Bay SAC

Inishkea Islands SAC

Duvillaun Islands SAC

Inishbofin and Inishshark SAC

Slyne Head Islands SAC

Blasket Islands SAC

Blackwater River (Cork/Waterford) SAC

Roaringwater Bay and Islands SAC

Lower River Suir SAC

River Boyne and River Blackwater SAC

River Barrow and River Nore SAC

Slaney River Valley SAC

The Maidens

North Channel

North Anglesey Marine / Gogledd Môn Forol

Rockabill to Dalkey Island SAC

Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau

West Wales Marine / Gorllewin Cymru Forol

Cardigan Bay / Bae Ceredigion

Pembrokeshire Marine / Sir Benfro Forol

Afonydd Cleddau / Cleddau Rivers

Afon Tywi / River Tywi

River Usk / Afon Wysg

Carmarthen Bay and Estuaries / Bae Caerfyrddin ac Aberoedd

Severn Estuary (England)

Severn Estuary

River Wye / Afon Gwy (Wales)

River Wye / Afon Gwy (England)

River Wye

Lundy

Bristol Channel Approaches / Dynesfeydd Môr Hafren

Bristol Channel Approaches / Dynesfeydd Mor Hafren

Exmoor & Quantock Oakwoods

River Avon

River Itchen

River Axe

Plymouth Sound & Estuaries

Isles of Scilly Complex

Nord Bretagne DO

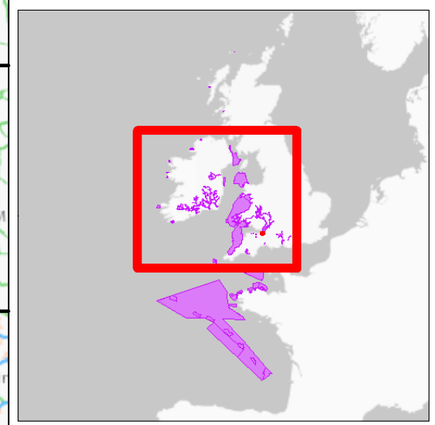
Nord Bretagne DH

Newcastle upon Tyne
Carlisle
Durham
Ripon
Lancaster
York
Preston
Leeds
Manchester
Liverpool
Sheffield
Bangor
Chester
Stoke-On-Trent
Nottingham
Derby
Lichfield
Leicester
Birmingham
Coventry
Hereford
Gloucester
Oxford
Swansea
Swindon
Wells
Salisbury
Southampton
Bournemouth
Exeter
Plymouth
Truro

Key

Indicative Dismantling Works Area ("Works Area")

Special Area of Conservation (SAC)



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Scale at A3:1:2,500,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 1: Screening

Figure 4.2
SACs considered within HRA Screening

February 2025

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-200000 -100000 0 100000 200000 300000 400000

0 -100000 -200000 -300000 -400000 -500000 -600000

N

Bristol Channel Approaches / Dynesfeydd Mor Hafren

Bristol Channel Approaches / Dynesfeydd Môr Hafren

Plymouth Sound & Estuaries

Isles of Scilly Complex

Nord Bretagne DH

Nord Bretagne DO

Cote de Granit Rose-Sept Iles

Côte de Granit rose-Sept-Iles

Baie de Morlaix

Tregor Goëlo

Abers - Côte des légendes

Ouessant-Molène

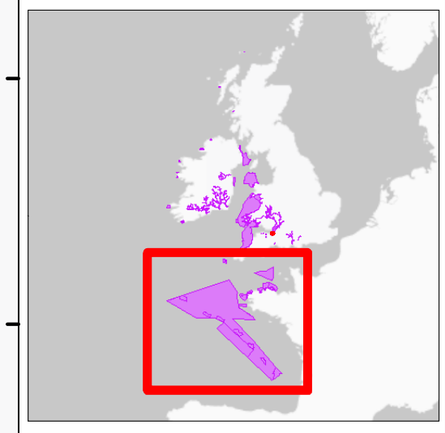
Chaussée de Sein

Mers Celtiques - Talus du golfe de Gascogne

Key

Indicative Dismantling Works Area ("Works Area")

Special Area of Conservation (SAC)



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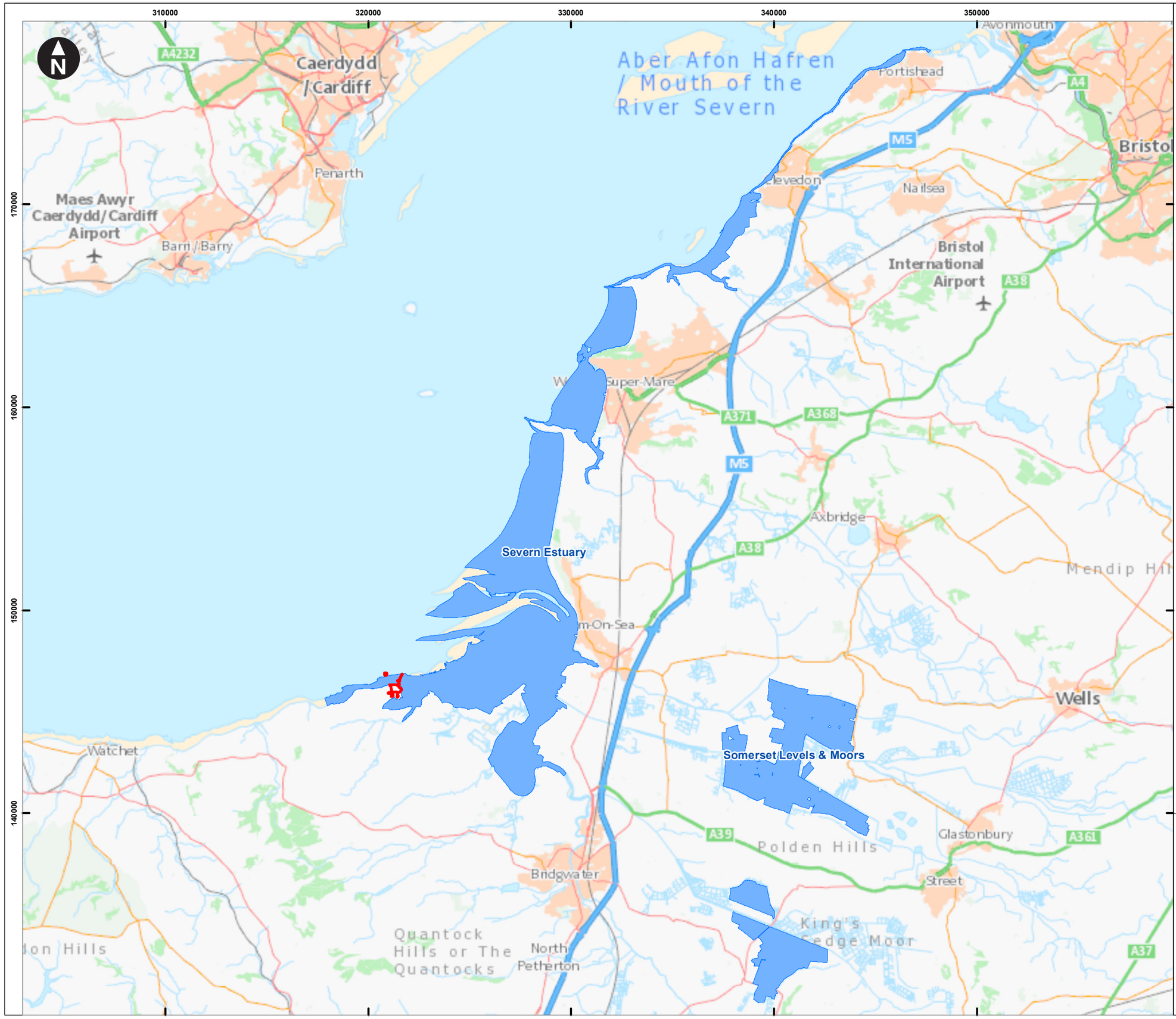
Scale at A3 1:2,500,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 1: Screening

Figure 4.2
SACs considered within HRA Screening

February 2025



Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 1: Screening

Figure 4.3
Local SPAs and Ramsar Sites considered within HRA Screening

February 2025

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Appendix A

Designated Site Conservation Objectives

HRA Appendix A – Designated Site Conservation Objectives

Site Name	Conservation Objectives
Severn Estuary /Môr Hafren SPA	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.[1]
Severn Estuary/Môr Hafren SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status ('FCS') of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site[2]
Severn Estuary Ramsar	The area of the estuarine ecosystem designated as Ramsar Site is smaller than that of the SAC as it is restricted to the terrestrial and intertidal areas and excludes all subtidal areas The conservation objective for the “estuaries” feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SAC “estuaries” feature”, in so far as these objectives are applicable to the area designated as Ramsar Site and as defined below.

[1] Natural England (2019). European Site Conservation Objectives for Severn Estuary Special Protection Area Site Code: UK9015022
[2] Natural England (2019). European Site Conservation Objectives for Severn Estuary/Môr Hafren Special Area of Conservation Site code: UK0013030

Site Name	Conservation Objectives
	The conservation objective for the "assemblage of migratory fish species" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: • the migratory passage of both adults and juveniles of the assemblage of migratory fish species through the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality; • the size of the populations of the assemblage species in the Severn Estuary and the rivers which drain into it, is at least maintained and is at a level that is sustainable in the long term; • the abundance of prey species forming the principle food resources for the assemblage species within the estuary, is maintained. • Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above. The conservation objective for the qualifying ornithological feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for in the SPA.
Exmoor and Quantock Oakwoods SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.[3]
Somerset Levels and Moors SPA	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features

[3] Natural England (2019). European Site Conservation Objectives for Exmoor and Quantock Oakwoods Special Area of Conservation Site Code: UK0030148

Site Name	Conservation Objectives
	• The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.[4]
Somerset Levels and Moors Ramsar	The conservation objective for the qualifying ornithological feature of the Somerset Levels and Moors Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for in the SPA.
River Usk / Afon Wsyg SAC	The vision for these features is for them to be in a favourable conservation status, where all of the following conditions are satisfied: • The Conservation Objective for the watercourse must be met; • The population of the feature in the SAC is stable or increasing over the long term; • The natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. • There is, and will probably continue to be, a sufficiently large habitat to maintain the feature's population in the SAC on a long-term basis.
River Axe SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status ('FCS') of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site[5]
River Wye / Afon Gwy SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status ('FCS') of its Qualifying Features, by maintaining or restoring:

[4] Natural England (2019). European Site Conservation Objectives for Somerset Levels and Moors Special Protection Area Site Code: UK9010031
[5] Natural England (2018). European Site Conservation Objectives for River Axe Special Area of Conservation Site code: UK0030248

Site Name	Conservation Objectives
	• The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site[6]
Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters In the context of natural change, this will be achieved by ensuring that: • Harbour porpoise is a viable component of the site; • There is no significant disturbance of the species; and • The condition of supporting habitats and processes, and the availability of prey is maintained.[7]
River Avon SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status ('FCS') of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site[8]
Lundy SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the

[6] Natural England (2018). European Site Conservation Objectives for River Wye/Afon Gwy Special Area of Conservation. Site Code: UK0012642
[7] JNCC. (Online). Available at: https://jncc.gov.uk/our-work/bristol-channel-approaches-mpa/#:~:text=The%20conservation%20objectives%20for%20the%20Bristol%20Channel%20Approaches,Status%20%28FCS%29%20for%20harbour%20porpoise%20in%20UK%20waters.
[8] Natural England (2018). European Site Conservation Objectives for River Avon Special Area of Conservation Site Code: UK0013016

Site Name	Conservation Objectives
	Favourable Conservation Status ('FCS') of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site[9]
Pembrokeshire Marine / Sir Benfro Forol SAC	See pages 77-83 of Advice Provided by the Countryside Council for Wales in Fulfilment of Regulation 33 of the Conservation (Natural Habitats, &c.) Regulations 1994[10]
Cardigan Bay / Bae Ceredigion SAC	See Pages 41-46 of the Advice provided by NRW in fulfilment of Regulation 37 of the Conservation of Habitats and Species Regulations 2017[11]
Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC	See Pages 81-84 of the Advice provided by NRW in fulfilment of Regulation 37 of the Conservation of Habitats and Species Regulations 2017[12]
Plymouth Sound and Estuaries SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the FCS of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and

[9] Natural England (2018). European Site Conservation Objectives for Lundy Special Area of Conservation Site Code: UK0013114
[10] NRW (2018). Pembrokeshire Marine / Sir Benfro Forol Special Area of Conservation. (Online). Available at: naturalresources.wales/media/687999/eng-pembrokeshire-marine-reg-37-report-2018.pdf
[11] NRW (2018). Cardigan Bay/ Bae Ceredigion Special Area of Conservation (Online). Available at: https://naturalresources.wales/media/687993/eng-cardigan-bay-reg-37-report-2018.pdf
[12] NRW (2018). Pen Llŷn a'r Sarnau / Lleyn Peninsula and the Sarnau Special Area of Conservation (Online). Available at: https://naturalresources.wales/media/688001/eng-pen-llyn-ar-sarnau-reg-37-report-2018.pdf

Site Name	Conservation Objectives
	• The distribution of qualifying species within the site[13]
Carmarthen Bay and Estuaries/ Bae Caerfyrddin ac Aberoedd SAC	See Pages 52-55 of the Advice provided by NRW in fulfilment of Regulation 37 of the Conservation of Habitats and Species Regulations 2017[14]
West Wales Marine / Gorllewin Cymru Forol SAC	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining FCS for Harbour Porpoise in UK waters. In the context of natural change, this will be achieved by ensuring that: • Harbour porpoise is a viable component of the site. • There is no significant disturbance of the species. • The condition of supporting habitats and processes, and the availability of prey is maintained
Afon Tywi/ River Tywi SAC	See Pages 21-26 of the Advice provided by NRW in fulfilment of Regulation 37 of the Conservation of Habitats and Species Regulations 2017[15]
River Clun SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the FCS of its Qualifying Features, by maintaining or restoring: • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site[16]
River Itchen SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the FCS of its Qualifying Features, by maintaining or restoring:

[13] Natural England (2018). European Site Conservation Objectives for Plymouth Sound and Estuaries Special Area of Conservation Site Code: UK0013111
[14] NRW (2018). Carmarthen Bay and Estuaries / Bae Caerfyrddin ac Aberoedd Special Area of Conservation (Online). Available at: https://cdn.naturalresources.wales/media/684382/carmarthen-bay-estuaries-sac-ica-2018.pdf
[15] NRW (2022). Conservation Objectives For Afon Tywi / River Tywi SAC (Online). Available at: https://naturalresources.wales/media/670732/afon_tywi_-_man-plan-english.pdf
[16] Natural England (2018). European Site Conservation Objectives for River Clun Special Area of Conservation Site code: UK0030250

Site Name	Conservation Objectives
	• The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site[17]
Afonydd Cleddau / Cleddau Rivers SAC	See Pages 20-28 of the Core Management Plan Including Conservation Objectives for Afonydd Cleddau / Cleddau Rivers SAC[18]
Slaney River Valley SAC	See Pages 11-27 of the Conservation Objectives Series for the Slaney River Valley SAC[19]
Lower River Suir SAC	See Pages 12-35 of the Conservation Objectives Series for the Lower River Suir SAC[20]
River Barrow and River Nore SAC	See Pages 10-39 of the Conservation Objectives Series for the River Barrow and River Nore SAC[21]
Blackwater River (Cork/Waterford) SAC	See Pages 12-21 of the Conservation Objectives Series for the Blackwater River (Cork/Waterford) SAC[22]

[17] Natural England (2018). European Site Conservation Objectives for River Itchen Special Area of Conservation Site Code: UK0012599
[18] NRW (2022). Conservation Objectives For Afonydd Cleddau / Cleddau Rivers SAC (Online). Available at: https://naturalresources.wales/media/682866/afonydd-cleddau-plan-english.pdf
[19] NPWS (2011) Slaney River Valley SAC 000781. (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000781.pdf
[20] NPWS (2017) Lower River Suir SAC 002137 (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002137.pdf
[21] NPWS (2011) River Barrow and River Nore SAC 002162 (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002162.pdf
[22] NPWS (2012) Blackwater River (Cork/Waterford) SAC 002170 (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002170.pdf

Site Name	Conservation Objectives
River Boyne and River Blackwater SAC	See Pages 9-16 of the Conservation Objectives Series for the River Boyne and River Blackwater SAC[23]
North Channel SAC	North Channel SAC conservation objectives are to ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for harbour porpoise in UK waters. In the context of natural change, this will be achieved by ensuring that: • Harbour porpoise is a viable component of the site; • There is no significant disturbance of the species; and • The condition of supporting habitats and processes, and the availability of prey is maintained.[24]
Rockabill to Dalkey Island SAC	See Pages 7-8 of the Conservation Objectives Series for the Rockabill to Dalkey Island SAC[25]
North Angelsey Marine / Gogledd Môn Forol SAC	To avoid deterioration of the habitats of the harbour porpoise or significant disturbance to the harbour porpoise, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to maintaining Favourable Conservation Status (FCS) for the UK harbour porpoise. To ensure for harbour porpoise that, subject to natural change, the following attributes are maintained or restored in the long term: • The species is a viable component of the site. • There is no significant disturbance of the species. • The supporting habitats and processes relevant to harbour porpoises and their prey are maintained.[26]
Blasket Islands SAC	See Pages 8-14 of the Conservation Objectives Series for the Blasket Islands SAC[27]

[23] NPWS (2021) Blackwater River (Cork/Waterford) SAC 002170 (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002299.pdf

[24] JNCC. North Channel SAC. (Online). Available at: North Channel MPA | JNCC - Adviser to Government on Nature Conservation

[25] NPWS (2013). Rockabill to Dalkey Island SAC 003000. (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf

[26] JNCC (2016). North Anglesey Marine/ Gogledd Môn Forol (Online). Available at: https://cdn.cyfoethnaturiol.cymru/media/681291/n-anglesey-draft-objectives-advice.pdf?mode=pad&rnd=131625760749270000

[27] NPWS (2014). Blasket Islands SAC 002172. (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf

Site Name	Conservation Objectives
Roaringwater Bay and Islands SAC	See Pages 8-17 of the Conservation Objectives Series for the Roaringwater Bay and Islands SAC[28]
Nord Bretagne DH SCI	Nord Bretagne DG SCI (Site of Community Importance) protects Common Porpoise and Bottle-nosed Dolphin under the Habitats Directive (92/43/EEC)[29].
Ouessant-Molene SCI	Ouessant-Molene SCI protects 47 species of birds under the Birds Directive (2009/147/EC)[30].
Mers Celtiques Talus du golfe de Gascogne SCI	Mers Celtiques Talus du golfe de Gascogne SCI protects Common Porpoise and Bottle-nosed Dolphin and Reefs, under the Habitats Directive (92/43/EEC)[31].
Côte de Granit rose-Sept-Iles SCI	Côte de Granit rose-Sept-Iles SCI protects 40 species of birds under the Birds Directive (2009/147/EC)[32].
Tregor Goelo SCI	Tregor Goelo SCI protects 48 species of birds under the Birds Directive (2009/147/EC)[33].
Baie de Morlaix SCI	Baie de Morlaix SCI protects 11 species of flora and forna and 19 habitat types under the under the Habitats Directive (92/43/EEC)[34].
Abers – Cote des légendes SCI	Abers – Cote des légendes SCI protects 11 species of flora and forna and 22 habitat types under the under the Habitats Directive (92/43/EEC)[35].
Chaussée de Sein SCI	Chaussée de Sein SCI protects 4 species of flora and forna and 8 habitat types under the under the Habitats Directive (92/43/EEC)[36].
North Rona SAC	To avoid deterioration of the qualifying habitats (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitats that the following are maintained in the long term: • Extent of the habitat on site

[28] NPWS (2011). Roaringwater Bay and Islands SAC 000101 (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf
[29] EUNIS (2017). Nord Bretagne DH. (Online). Available at: EUNIS -Site factsheet for Nord Bretagne DH
[30] EUNIS (2019). Ouessant-Molène (Online). Available at: EUNIS -Site factsheet for Ouessant-Molène
[31] EUNIS (2017). Mers Celtiques - Talus du golfe de Gascogne. (Online). Available at: EUNIS -Site factsheet for Mers Celtiques - Talus du golfe de Gascogne
[32] EUNIS (2019). Côte de Granit rose-Sept-Iles SCI (Online). Available at: EUNIS -Site factsheet for Cote de Granit Rose-Sept Iles
[33] EUNIS (2019). Tregor Goelo SCI (Online). Available at: EUNIS -Site factsheet for Tregor Goëlo
[34] EUNIS (2017). Baie de Morlaix SCI (Online). Available at: EUNIS -Site factsheet for Baie de Morlaix
[35] EUNIS (2017). Abers – Cote des légendes SCI (Online). Available at: EUNIS -Site factsheet for Abers - Côte des légendes
[36] EUNIS (2017). Abers – Chaussée de Sein SCI (Online). Available at: EUNIS -Site factsheet for Chaussée de Sein

Site Name	Conservation Objectives
	• Distribution of the habitat within site • Structure and function of the habitat • Processes supporting the habitat • Distribution of typical species of the habitat • Viability of typical species as components of the habitat • No significant disturbance of typical species of the habitat Qualifying Habitats: • Reefs • Sea caves • Vegetated sea cliffs[37]
Monach Islands SAC	To avoid deterioration of the qualifying habitats (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitats that the following are maintained in the long term: • Extent of the habitat on site • Distribution of the habitat within site • Structure and function of the habitat • Processes supporting the habitat • Distribution of typical species of the habitat • Viability of typical species as components of the habitat • No significant disturbance of typical species of the habitat Qualifying Habitats: • Dune grassland • Machair • Shifting dunes with marram[38]
Horn Head and Rineclevan SAC	See Pages 9-25 of the Conservation Objectives Series for the Horn Head and Rineclevan SAC[39]

[37] NatureScot (2005). North Rona SAC. (Online). Available at: https://www.nature.scot/sites/default/files/special-area-conservation/8340/conservation-objectives.pdf
[38] NatureScot (2005). Monach Islands SAC (Online). Available at: https://www.nature.scot/sites/default/files/special-area-conservation/8322/conservation-objectives.pdf
[39] NPWS (2024). Horn Head and Rinclevan SAC 000147 (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000147.pdf

Site Name	Conservation Objectives
Slieve Tooey/Tormore Island/Loughros Beg Bay SAC	See Pages 9-20 of the Conservation Objectives Series for the Slieve Tooey/Tormore Island/Loughros Beg Bay SAC [40]
Inishkea Islands SAC	See Pages 8-10 of the Conservation Objectives Series for the Slieve Tooey/Tormore Island/Loughros Beg Bay SAC [41]
Duvillaun Islands SAC	See Pages 8-9 of the Conservation Objectives Series for the Duvillaun Islands SAC [42]
Inishbofin and Inishsark SAC	See Pages 8-17 of the Conservation Objectives Series for the Inishbofin and Inishsark SAC[43]
Slyne Head Islands SAC	See Pages 9-17 of the Conservation Objectives Series for the Slyne Head Islands SAC[44]
Isles of Scilly Complex SAC	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying • species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of • qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.[45]
The Maidens SAC	To maintain (or restore where appropriate) the:

[40] NPWS (2015). Slieve Tooey/Tormore Island/Loughros Beg Bay SAC (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000190.pdf
[41] NPWS (2015). Inishkea Islands SAC (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000507.pdf
[42] NPWS (2024). Duvillaun Islands SAC (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000495.pdf
[43] NPWS (2015). Inishbofin and Inishsark SAC (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000495.pdf
[44] NPWS (2015). Slyne Head Islands SAC (Online). Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000495.pdf
[45] Natural England (2018). European Site Conservation Objectives for Isles of Scilly Complex Special Area of Conservation Site Code: UK0013694

Site Name	Conservation Objectives
	• Reefs • Sandbanks which are slightly covered by sea water all the time • Grey Seal (*Halichoerus grypus*) to favourable condition[46].
Treshnish Isles SAC	To avoid deterioration of the qualifying habitat (Reefs) or the habitats of qualifying species (Grey seal *Halichoerus grypus*) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying interest. Grey Seal - To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site • Distribution of the species within site • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species • No significant disturbance of the species Reefs - To ensure for the qualifying habitat that the following are maintained in the long term: • Extent of the habitat on site • Distribution of the habitat within site • Structure and function of the habitat • Processes supporting the habitat • Distribution of typical species of the habitat • Viability of typical species as components of the habitat • No significant disturbance of typical species of the habitat[47]

[46] Daera-ni (2017): The Maidens SAC UK0030384 Conservation Objectives. (Online). Available at: Maidens SAC Conservation Objectives 2017
[47] UKMPA (2006). Tresnish Isles SAC. (Online). Available at: http://ukmpa.marinebiodiversity.org/pdf/Sitebasedreports/Treshnish_Isles.pdf

Appendix B

Bird Survey – Survey Data Summary of Qualifying Interest Species

Appendix B
Bird Survey – Survey Data Summary of Qualifying Interest Species

This document provides a summary of the survey data that has been collated together to inform the baseline for ornithology. The survey data summary is supported by **Figure 3B.1: (Ornithological Survey Areas).**

Where 'No records' is listed, this means that the survey was undertaken but the species was not recorded.

Site designation	Qualifying feature	Summary of available data for all qualifying features
Severn Estuary SPA	Bewick's swan	HPC Intertidal surveys – 2017 – 2023 **– No records** HPB Intertidal surveys 2019/2020 **– No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Shelduck	HPC Intertidal surveys 2016/2017: **Peak count sector 5 - 132, Peak count sector 4 - 9, Sector 3 – No records** HPC Intertidal surveys 2017/2018: **Peak count sector 5 - 7, Peak count sector 4 - 3, Peak count sector 3 - 2** HPC Intertidal surveys 2018/2019: **Peak count sector 5 - 1,030 (November), peak count sector 4 - 87, sector 3 - N/A** HPC Intertidal surveys 2019/2020: **Peak count across all sectors - 140** HPC Intertidal surveys 2020/2021: **Peak count across all sectors – 185** HPC Intertidal surveys 2021/2022: **Peak count across all sectors – 43** HPC Intertidal surveys 2022/2023: **Peak count across all sectors – 456** HPB Intertidal surveys 2019/2020 - M**onthly peak count (Sectors 1 and 2) - Sep (437), Oct (47), Nov (290), Dec (11), Jan (36), Feb (4), Mar (37)** Shelduck monitoring (June - Oct) 2016 - **Areas where peak counts break 1% SPA threshold - Grid square 18 (Aug/Sep), Grid square 19 (Jul/Aug/Sep):** Peak monthly count for each 1km grid square over the four-hour high-tide period within a 500m ZoI of Proposed Works Area: Grid square 18 – September - peak count 296 (High tide + 2hrs; Grid square 19 – September – peak count 736 (High tide + 2 hrs) Shelduck monitoring (June - Oct) 2017 - **Areas where peak counts break 1% SPA threshold - Grid square 18 (Aug/Sep) and 19 (Jul/Aug):**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		Peak monthly count for each 1km grid square over the four-hour high-tide period within a 500m ZoI of Proposed Works Area: Grid square 18 – August - peak count 316 (High tide + 2hrs; Grid square 19 – August – peak count 351 (High tide + 2 hrs) Shelduck monitoring (June - Oct) 2018 - **Areas where peak counts break 1% SPA threshold - Grid square 18 and 29 (Jun), 19 (Jul), 8, 9, 18 and 19 (Aug and Sep):** Peak monthly count for each 1km grid square over the four-hour high-tide period within a 500m ZoI of Proposed Works Area: Grid square 8 – August – peak count 590 (High tide + 1 hr); Grid square 9 – August - peak count 556 (High tide); Grid square 18 – August - peak count 1,400 (High tide + 2 hrs); Grid square 19 – August - peak count 564 (High tide + 2hrs); Grid square 29 – June – peak count 94 (High tide + 2 hrs). Shelduck monitoring (June – Oct) 2019 – **Population survey data from Count Sector 2 – Peak counts 296 – 770 (17 July – 02 October)** Shelduck monitoring (June – Oct) 2020 – **Population survey data from Count Sector 2 – Peak counts 456 – 838 (07 August – 08 October)** Shelduck monitoring (June – Oct) 2021 – **Population survey data from Count Sector 2 – Peak counts 86 – 1,611 (13 August – 10 October)** Shelduck monitoring (June – Oct) 2022 - **Population survey data from Count Sector 2 – Peak counts 318 – 1,953 (13 July – 12 October)** Shelduck monitoring (June – Oct) 2023 – **Population survey data from Count Sector 2 – Peak counts 214 – 621 (22 August – 03 October)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 - 1,665 Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 - 1,970 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/22 – 942 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/23 – 5,626
	Gadwall	2016 - 2023 intertidal surveys – **No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Dunlin	HPC Intertidal surveys 2016/2017 - **Count sector 5 peak count 56, count sectors 3 and 4 - N/A** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		HPC Intertidal surveys 2020/2021 - **Peak count across all sectors – 420** HPC Intertidal surveys 2021/2022 - **No records** HPC Intertidal surveys 2022/2023 - **Peak count across all sectors – 68** HPB Intertidal surveys 2019/20 - **Monthly peak count (Sectors 1 and 2) - Sep (4)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast - 3 Hinkley Point B Land Management Annual Review 2021 – No birds recorded Hinkley Point B Land Management Annual Review 2022 – No birds recorded Hinkley Point B Land Management Annual Review 2023 – No birds recorded
	Redshank	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **Peak count 3 (across all count sectors)** HPC Intertidal surveys 2020/2021 - **Peak count 3 (across all count sectors)** HPC Intertidal surveys 2021/2022 - **Peak count 3 (across all count sectors)** HPC Intertidal surveys 2022/2023 **- Peak count 9 (across all count sectors)** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Jan (24), Feb (2)** Hinkley Point B Land Management Annual Review 2020 – No birds recorded Hinkley Point B Land Management Annual Review 2021 – No birds recorded Hinkley Point B Land Management Annual Review 2022 – No birds recorded Hinkley Point B Land Management Annual Review 2023 – No birds recorded
	Greater white-fronted goose	HPC Intertidal surveys 2017 – 2023 **– No records** HPB Intertidal surveys 2019/2020 **– No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
Severn Estuary SPA	Eurasian wigeon (Assemblage)	HPC Intertidal surveys - **Baseline maximum mean of peak counts (2007/08 - 08/09) – 351** HPC Intertidal surveys - **Maximum mean of peak counts (2013/14 - 2018/19) – 180** HPC Intertidal surveys 2016/2017 - **Count sector 5 - peak count 8, count sector 4 - peak count 26, count sector 3 - peak count (62)** HPC Intertidal surveys 2017/2018 - **Count sector 5 - peak count 54, count sector 4 - peak count 45** HPC Intertidal surveys 2018/2019 - **Count sector 5 - peak count 42, count sector 4 - peak count 40** HPC Intertidal surveys 2019/2020 – **Peak count across all sectors - 16**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		HPC Intertidal surveys 2020/2021 - **Peak count across all sectors – 16** HPC Intertidal surveys 2021/2022 - **Peak count across all sectors - 14** HPC Intertidal surveys 2022/2023 **- Peak count across all sectors - 59** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Nov (26), Dec (75), Jan (19), Feb (29), Mar (37)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 - 340 Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 339 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/22- 396 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/23- 343
	Teal (w) (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 — **Count sector 5 – no records, count sector 4 - peak count 1** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **Peak Count - 1** HPC Intertidal surveys 2022/2023 – **Peak count - 6** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Oct (3), Nov (3), Dec (3), Jan (11)** Hinkley Point B Land Management Annual Review 2020 – **No birds recorded** Hinkley Point B Land Management Annual Review 2021 – **No birds recorded** Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/22- 1 Hinkley Point B Land Management Annual Review 2023 – **No birds recorded along coast**
	Northern pintail (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 peak count 210, count sector 4 peak count 21** HPC Intertidal surveys 2017/2018 - **Count sector 5 peak count 12, count sector 4 – no records** HPC Intertidal surveys 2018/2019 - **Count sector 5 peak count 44, count sector 4 peak count 3** HPC Intertidal surveys 2019/2020 – **Peak count across all sectors - 60** HPC Intertidal surveys 2020/2021 - **Peak count across all sectors – 60** HPC Intertidal surveys 2021/2022 – **Peak Count across all sectors – 96** HPC Intertidal surveys 2022/2023 – **Peak Count across all sectors – 54**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Sep (59), Oct (28), Nov (270), Dec (61), Jan (9), Feb (13), Mar (15)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 - 234 Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 615 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/22- 414 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/23- 942
	Mallard (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 - peak count 9, count sector 4 - no records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 - **Count sector 5 - peak count 16, count sector - 4 peak count 18** HPC Intertidal surveys 2019/2020 – **Peak count across all sectors - 25** HPC Intertidal surveys 2020/2021 - **Peak count across all sectors – 4** HPC Intertidal surveys 2021/2022 – **Peak Count across all sectors – 14** HPC Intertidal surveys 2022/2023 – **Peak Count across all sectors – 21** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Sep (47), Oct (30), Nov (17), Dec (44), Jan (30), Feb (12), Mar (2)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 - 143 Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 76 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/22- 204 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/23- 144
	Shoveler (Assemblage)	HPC Intertidal surveys – 2020 – 2023 **- No Records** HPB Intertidal surveys 2019/2020 **– No records** Hinkley Point B Land Management Annual Review 2020 – 2021 and 2023: No records Hinkley Point B Land Management Annual Review 2022: Annual count along coast during 2021/22- 480
	Grey plover (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 - peak count 4, count sector 4 - peak count 13** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 - **Peak count across all sectors - 8** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **Peak Count across all sectors – 4**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) – No records** Hinkley Point B Land Management Annual Review 2020 – **Annual count along coast during 2019/20 – No records** Hinkley Point B Land Management Annual Review 2021 – **Annual count along coast during 2020/21 – 1** Hinkley Point B Land Management Annual Review 2022 – **Annual count along coast during 2021/2022 – No records** Hinkley Point B Land Management Annual Review 2023 – **Annual count along coast during 2022/2023 – No records**
	Northern lapwing (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 – **Monthly peak count (Sectors 1 and 2) - Dec (79)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 – No records Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 1 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 – No records Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – No records
	Whimbrel (p) (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		HPC Intertidal surveys 2021/2022 – **No records** HPB Intertidal surveys 2019/2020 - monthly peak count (Sectors 1 and 2) – **No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Curlew (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 - peak count 7, count sector 4 - peak count 15, count sector 3 - peak count (2)** HPC Intertidal surveys 2017/2018 - **Count sector 5 - peak count 4, count sector 4 - peak count 8, count sector 3 - peak count (1)** HPC Intertidal surveys 2018/2019 - **Count sector 5 - peak count 2, count sector 4 - peak count 6, count sector 3 - peak count (1)** HPC Intertidal surveys 2019/2020 – P**eak count across all sectors - 26** HPC Intertidal surveys 2020/2021 - P**eak count across all sectors - 15** HPC Intertidal surveys 2021/2022 – P**eak count across all sectors - 15** HPC Intertidal surveys 2022/2023 – P**eak count across all sectors - 20** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Sep (62), Oct (14), Nov (7), Dec (7), Jan (14, Feb (10), Mar (10)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 – 46 Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 146 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 – 111 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – 94
	Spotted redshank (w) (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 – **No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records

Site designation	Qualifying feature	Summary of available data for all qualifying features
	Ringed plover (Assemblage)	HPC Intertidal surveys 2016/2017 - C**ount sector 5 and count sector 4 N/A, count sector 3 peak count 1** HPC Intertidal surveys 2017/2018 - **Count sector 5 peak count 0, count sector 4 peak count 2, count sector 3 peak count 1** HPC Intertidal surveys 2018/2019 - **count sector 5 peak count 3, count sector 4 peak count 6** HPC Intertidal surveys 2019/2020 – **Peak count across all sectors - 26** HPC Intertidal surveys 2020/2021 - **Peak count across all sectors – 2** HPC Intertidal surveys 2021/2022 – **Peak count across all sectors – 9** HPC Intertidal surveys 2022/2023 – **Peak count across all sectors – 6** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Oct (14)** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Lesser black-backed gull (b) (Assemblage)	Breeding bird surveys 2019 - **20 pairs recorded nesting within the Proposed Works Area.** Breeding bird surveys 2021 - **7 pairs recorded nesting within the Proposed Works Area.** Breeding bird surveys 2022 - **6 pairs recorded nesting within the Proposed Works Area.** Hinkley Point B Nesting Gull Population Surveys – HPB - 20 pairs (2019), 7 (2021), 6 pairs (2022) and 6 pairs (2023).
	Herring gull (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 - **Peak count sector 5 - 40, peak count sector 4 - 36, peak count sector 3 (86)** HPC Intertidal surveys 2018/2019 - **Peak count sector 5 - 73, peak count sector 4 - 93, peak count sector 3 (53)** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Sep (37), Nov (172), Dec (246), Jan (190)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 – 263

Site designation	Qualifying feature	Summary of available data for all qualifying features
		Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 674 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 – 267 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – 552 Hinkley Point B Nesting Gull Population Surveys – HPB - 186 pairs (2020); 191 (2021); 189 (2022) and 185 (2023).
	Knot (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 – **No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Black-headed gull (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 - peak count 6, count sector 4 - peak count 18, count sector 3 - peak count (14)** HPC Intertidal surveys 2017/2018 - **Count sector 5 - peak count 9, count sector 4 - peak count 10, count sector 3 - peak count (3)** HPC Intertidal surveys 2018/2019 - **Count sector 5 - peak count 12, count sector 4 - peak count 13, count sector 3 - peak count (2)** HPC Intertidal surveys 2019/2020 – **Previous reports included gull species however these were omitted from recording in 2021 as they are not listed on the SPA, SSSI or Ramsar citations as important wintering species.** HPC Intertidal surveys 2020/2021 – **As above** HPC Intertidal surveys 2021/2022 – **As above** HPC Intertidal surveys 2022/2023 – **As above** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Sep (254), Oct (102)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 – 252 Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 604 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 –294

Site designation	Qualifying feature	Summary of available data for all qualifying features
		Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – 730
	Black-tailed godwit (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 – **No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Pochard (w) (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 – **No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Tufted duck (w) (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 – **No records** HPC Intertidal surveys 2018/2019 – **No records** HPC Intertidal surveys 2019/2020 – **No records** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 – **No records**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Oystercatcher (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 - peak count 4, count sector 4 peak count 13, count sector 3 peak count (30)** HPC Intertidal surveys 2017/2018 - **Count sector 5 - peak count 5, count sector 4 peak count 29, count sector 3 peak count (27)** HPC Intertidal surveys 2018/2019 - **Count sector 5 - peak count 37, count sector 4 peak count 28, count sector 3 peak count (10)** HPC Intertidal surveys 2019/2020 – **Peak count across all sectors - 65** HPC Intertidal surveys 2020/2021 - **Peak count across all sectors – 36** HPC Intertidal surveys 2021/2022 – **Peak count across all sectors – 44** HPC Intertidal surveys 2022/2023 – **Peak count across all sectors – 61** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Sep (68), Oct (47), Nov (26), Dec (48), Jan (29), Feb (27), Marc (30)** Hinkley Point B Land Management Annual Review 2020 – **Annual count along coast during 2019/20 – 149** Hinkley Point B Land Management Annual Review 2021 – **Annual count along coast during 2020/21 – 166** Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 – 121 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – 133
	Turnstone (Assemblage)	HPC Intertidal surveys 2016/2017 – **No records** HPC Intertidal surveys 2017/2018 - **Count sector 3 - peak count 1** HPC Intertidal surveys 2018/2019 - **Count sector 5 - peak count 1, count sector 4 – no records** HPC Intertidal surveys 2019/2020 – P**eak count across all sectors - 20** HPC Intertidal surveys 2020/2021 - P**eak count across all sectors – 15** HPC Intertidal surveys 2021/2022 – **Peak count across all sectors – 15** HPC Intertidal surveys 2022/2023 – **Peak count across all sectors – 20** HPB Intertidal surveys 2019/2020 – **Monthly peak count (Sectors 1 and 2) - Sep (25), Oct (1), Nov (1), Dec (4), Jan (1), Feb (5), Mar (1)** Hinkley Point B Land Management Annual Review 2020 – **Annual count along coast during 2019/20 – 1**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		Hinkley Point B Land Management Annual Review 2021 – **Annual count along coast during 2020/21 – No records** Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 – 4 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – 1
	Dark-bellied brent goose (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 peak count 2, count sector 4 peak count 2** HPC Intertidal surveys 2017/2018 - **Count sector 5 - peak count N/A, count sector 4 - peak count 4, count sector 3 - peak count 4** HPC Intertidal surveys 2018/2019 - **Count sector 3 - peak count 6** HPC Intertidal surveys 2019/2020 – **Peak count across all sectors - 8** HPC Intertidal surveys 2020/2021 – **No records** HPC Intertidal surveys 2021/2022 – **No records** HPC Intertidal surveys 2022/2023 – **No records** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Oct (9), Dec (26), Jan (39), Feb (114), Mar (52)** Hinkley Point B Land Management Annual Review 2020 – **Annual count along coast during 2019/20 – 210** Hinkley Point B Land Management Annual Review 2021 – **Annual count along coast during 2020/21 – 187** Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 – 118 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – 202
	Light-bellied brent goose (Assemblage)	HPC Intertidal surveys 2016/2017 - C**ount sector 5 - peak count 6, count sector 4 - peak count 31** HPC Intertidal surveys 2017/2018 - **Count sector 5 - peak count 1, count sector 4 – peak count 17, count sector 4 - peak count 23** HPC Intertidal surveys 2018/2019 - **Count sector 5 – no record, count sector 4 - peak count 6, count sector 3 - peak count 12** HPC Intertidal surveys 2019/2020 - **Peak count across all sectors – 41** HPC Intertidal surveys 2020/2021 - **Peak count across all sectors – 51** HPC Intertidal surveys 2021/2022 – **Peak count across all sectors – 76** HPC Intertidal surveys 2022/2023 – **Peak count across all sectors – 43**

Site designation	Qualifying feature	Summary of available data for all qualifying features
		HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) – 1**
	Little egret (Assemblage)	HPC Intertidal surveys 2016/2017 - **Count sector 5 - peak count 5, count sector 4 - peak count 1** HPC Intertidal surveys 2017/2018 - **Count sector 5 - peak count 0, count sector 4 - peak count 6, count sector 3 - peak count 1** HPC Intertidal surveys 2018/2019 - **Count sector 5 - peak count 3, count sector 4 - peak count 6, count sector 3 - peak count 2** HPC Intertidal surveys 2019/2020 – **Peak count across all sectors – 2** HPC Intertidal surveys 2021/2022 – **Peak count across all sectors – 4** HPC Intertidal surveys 2022/2023 – **Peak count across all sectors – 5** HPB Intertidal surveys 2019/2020 - **Monthly peak count (Sectors 1 and 2) - Sep (9), Oct (7), Nov (3), Jan (1)** Hinkley Point B Land Management Annual Review 2020 – Annual count along coast during 2019/20 – 4 Hinkley Point B Land Management Annual Review 2021 – Annual count along coast during 2020/21 – 8 Hinkley Point B Land Management Annual Review 2022 – Annual count along coast during 2021/2022 – 8 Hinkley Point B Land Management Annual Review 2023 – Annual count along coast during 2022/2023 – 10
Severn Estuary Ramsar	Bewick's swan (w)	**See Severn Estuary SPA**
	European white fronted goose (w)	**See Severn Estuary SPA**
	Dunlin (w/p)	**See Severn Estuary SPA**
	Redshank (w/p)	**See Severn Estuary SPA**
	Shelduck (w)	**See Severn Estuary SPA**
	Gadwall (w)	**See Severn Estuary SPA**

Site designation	Qualifying feature	Summary of available data for all qualifying features
	Ringed plover (w/p)	**See Severn Estuary SPA**
	Teal (w)	**See Severn Estuary SPA**
	Pintail (w)	**See Severn Estuary SPA**
	Curlew (w)	**See Severn Estuary SPA**
	Grey plover (w)	**See Severn Estuary SPA**
	Spotted redshank (w)	**See Severn Estuary SPA**
	Wigeon (w)	**See Severn Estuary SPA**
	Lesser black-backed gull (b)	Breeding bird surveys 2019 - **20 pairs** Breeding bird surveys 2021 - **7 pairs** Breeding bird surveys 2022 - **6 pairs**
Somerset Levels and Moors SPA/Ramsar	Bewick's swan	**See Severn Estuary SPA**
	Teal	**See Severn Estuary SPA**
	Golden plover	HPC Intertidal surveys – 2017 – 2022 **- Species infrequently recorded in the Survey Area** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Northern lapwing	**See Severn Estuary SPA**
Somerset Levels and Moors SPA/Ramsar	Gadwall (Assemblage)	**See Severn Estuary SPA**
	Snipe (Assemblage)	HPC Intertidal surveys – 2016 – 2023 **- Species infrequently recorded in the Survey Area** HPB Intertidal surveys 2019/2020 **– No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Whimbrel (Assemblage)	**See Severn Estuary SPA**

Site designation	Qualifying feature	Summary of available data for all qualifying features
	Mute swan (Assemblage)	HPC Intertidal surveys – 2016 – 2023 **- Species infrequently recorded in the Survey Area** HPB Intertidal surveys 2019/2020 **– No records** Hinkley Point B Land Management Annual Review 2020 to 2023: No records
	Wigeon (Assemblage)	**See Severn Estuary SPA**
	Shoveler (Assemblage)	HPC Intertidal surveys – 2016 – 2023 **- Species infrequently recorded in the Survey Area** HPB Intertidal surveys 2019/2020 **– No records**
	Pintail (Assemblage)	**See Severn Estuary SPA**

X:\UK\DCEMA100-ATT5\ATT5-FS7-Shared2\Projects\808125 HNB & HPB EIADR\Deliver Stage\D Design_Technical\Drawings\ArcGIS\Hinkley Point B\MXD\808125-WOOD-XX-XX-FG-OE-00005_S2_C03.mxd Originator: UKJXP782

315000 320000 325000 330000

155000 150000 145000

N

Berrow Flats
Bridgwater Bay
Brean
Berrow
Burnham-On-Sea
Lilstock
Kilton
East Quantoxhead
Kilve
Town's End
Stringston
Dyche
Knighton
Burton Shurton
Wick
Stogursey
Cockwood
Stockland Bristol
Combwich
Coultings
Pawlett
Walpole
West Huntspill
A39

Key

- Indicative Dismantling Works Area ("Works Area")
- Nuclear Site Licence Boundary ("The Site")
- Bird monitoring survey area
- Inter-tidal survey sector
- Observation point (1-6)

Original Transect Route Lines - 2012

- 1
- 2
- 3
- 4
- 5
- 6

Revised Transect Route Lines - 2014

- 1
- 2
- 3
- 4
- 5

Note:
Observation points 1, 4 and 5 only were used in 2016 and 2017.

The following grid squares are not visible from OPs 1, 4 and 5: 1-2, 11-12, 21-22, 31-34, 39-44 .

0 500 1,000 1,500 2,000 2,500 3,000 3,500 m

Scale at A3: 1:65,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 1: Screening

Figure 3B.1
Ornithological survey areas

February 2025

808125-WOOD-XX-XX-FG-OE-00005_S2_C03

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Appendix C

Projects and plans considered within the in-combination assessment

Appendix C
Projects and plans considered within the in-combination assessment

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
HPA	Somerset	n/a Hinkley Point A Decommissioning	n/a	Hinkley Point, Somerset, STA5 1YA	ST 211 460	Hinkley Point A decommissioning. This process is being managed by the Nuclear Decommissioning Authority subsidiary, Magnox Ltd. The station was fuel free by 2005. The turbine hall was demolished in 2019. The site is now focused on the safe and secure retrieval, packaging and storing of its legacy waste. Priorities for the site include completing the commissioning of the plant required to process, treat, encapsulate, and store intermediate level waste on site until a UK geological disposal facility becomes available.	Decommissioning works commenced	Yes	Yes	In	Yes spatial and temporal overlap
1	Secretary of State for Department of Energy	EN010001 Hinkley Point C New Nuclear Power Station Granted DCO and	Original Application submitted 2011	Site to the west of TA5 1UD	ST 21043 45928	Proposal for a nuclear power station with two nuclear reactors capable of	Under construction. Unit 1 due to complete end of the decade	Yes	Yes	In	Yes spatial and temporal overlap

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
	and Net Zero	Non-Material Change				generating a total of up to 3,260MW of electricity at Hinkley Point C and subsequent non-material or material amendments.					
2	Somerset West and Taunton Council	3/39/20/003	January 2020	Land to the west of Williton, off Priest Street, Williton	ST 07556 40944	Outline application (with all matters reserved) for the erection of up to 350 dwellings (comprising a mix of dwelling sizes and types and affordable housing), approximately 1,000sqm of flexible uses within Use class E (limited to offices, R&D and light industrial), vehicle access, public open space, sports and recreational facilities, footpaths, cycle ways, enhancements to the Barrows scheduled monument including information boards, landscaping and associated works.	Granted Permission February 2024. Construction not commenced	No	Potentially	Out	No – due to distance unlikely to share receptors with the Proposed Works
3	Sedgemoor District Council	11/19/00003	January 2019	Land to the East of, Isleport Lane, Highbridge, Somerset	ST 32894 47536	Outline application with some matters reserved, for residential development of up to 248no. dwellings (Use Class C3),	Granted Permission Feb 2022 Under construction. Due to complete in advance of	No	Potentially	Out	No – due to distance unlikely to share receptors with the Proposed Works

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						community uses/local shop (D1/A1), public open space and green infrastructure, new vehicle access points from Isleport Lane and associated engineering, drainage, landscape and infrastructure works; Access to be determined and all other matters reserved.	Proposed Works commencing.				
4	Sedgemoor District Council	52/19/00001	January 2019	Land At, Brue Farm, Huntspill Road, Highbridge, Somerset, TA9 3DE	ST 31739 46940	Hybrid (full and outline) application for the erection of 171 dwellings together with associated infrastructure, including provision of roundabout and public open space and seeking outline permission with all matters reserved for the erection of a primary school.	Granted Permission April 2021 Under construction. Due to complete in advance of Proposed Works commencing	No	No	Out	No – due to distance unlikely to share receptors with the Proposed Works nor temporal overlap
5	Sedgemoor District Council	28/22/00003	July 2022	Mill Farm Caravan Park, Watery Lane, Fiddington, Bridgwater, Somerset, TA5 1JQ	ST 21964 40884	Development of 58 no. additional touring caravan pitches. Continued use of existing 53 no. touring caravan pitches in Home Meadow for use by HPC workers until 31st December 2025. Erection of	Granted Permission March 2023	No	No	Out	No –permission for use to continue to December 2025 (finished before Proposed Works commence).

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						welfare block and relocation of trampoline block adjacent to proposed welfare block. Repositioning of MUGA (previously approved through application reference 28/20/00006).					
6	Sedgemoor District Council	13/19/00023	March 2019	Combwich Wharf, Land To The South Of, Estuary Park, Combwich, Bridgwater, Somerset, TA5	ST 26040 41758	Construction of temporary laydown area for abnormal indivisible loads adjacent to the existing Combwich Wharf access road, including construction of hardstanding, erection of fencing, gates, lighting, CCTV cameras, mobile welfare facilities, landscaping, earthworks and all other associated works in connection with construction of HPC power station.	Granted Permission July 2019	No	No	Out	No – implemented prior to commencement of Proposed Works
7	Sedgemoor District Council	23/19/00002	March 2019	Land To The South Of, Quantock Road, Bridgwater, Somerset	ST 28466 37016	Hybrid (full and outline) application. Full application for the erection of 114 dwellings, formation of signal-controlled access off Quantock Road with associated infrastructure,	Under consideration	Yes – construction traffic	Yes	In	Overlap with potential construction traffic routes.

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						landscaping and open space (phase 1). Outline application with all matters reserved for the erection of up to 240 residential dwellings with associated infrastructure, landscaping and open space (phase 2).					
8	Sedgemoor District Council	23/18/00016	November 2018	Durleigh Reservoir, Enmore Road, Durleigh, Bridgwater, Somerset, TA5 2AW	Formation of new wetlands on land west of Durleigh Water Treatment Works (WTW) and Reservoir. Erection of 2 No. footbridges to maintain access to public rights of way.	Granted Permission March 2019	Granted Permission March 2019	No	No	No	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
9	Sedgemoor District Council	51/19/00003	March 2019	Land at Cokerhurst Farm South of Wembdon Hill & North of, Quantock Road, Bridgwater, Somerset						In	Overlap with potential construction traffic routes.

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10	Sedgemoor District Council	11/22/00017	March 2022	1 Hooper Close, Highbridge, TA9 4JU	ST 327477	Proposed redevelopment of land for 3no. commercial units (use class B2, B8, Eg(i)) and associated works.	Granted Permission May 2022	No	No	Out	No – due to low number of properties proposed considered unlikely to interact with the Proposed Work and would be complete in advance of the Proposed Works.
11	Sedgemoor District Council	13/21/00041	January 2021	The Yeo Valley Organic Company, Cannington, Bridgwater, TA5 2ND	ST 24917 38880	Installation of ground mounted PV (Solar Panels) to provide carbon free electricity.	Granted Permission May 2022	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
12	Sedgemoor District Council	13/23/00032	December 2023	Land to the East of Brymore Way, between Withiel Drive and Chads Hill, Brymore Way, Cannington, Bridgwater, TA5	ST251397	Erection of 160no. dwellings, creation of vehicular, pedestrian and cycle access, public open space, landscaping and associated works	Under consideration	Yes – construction traffic	Yes	In	Overlap with potential construction traffic routes.
13	Sedgemoor District Council	36/23/00011	May 2023	Land At, Cricketer Farm, Cannington Road, Nether Stowey, Bridgwater, TA5 1LL	ST 19580 39908	Erection of 58 dwellings (40% affordable units) with access, landscaping, parking, public open space and associated works.	Under consideration	Yes – construction traffic	Yes	In	Overlap with potential construction traffic routes.
14	Sedgemoor District Council	28/23/00013	November 2023	Mill Farm Caravan Park, Watery Lane, Fiddington,	ST 22018 40822	Change of use to allow all-year round tourism & temporary use, existing caravan storage to	Under consideration	Yes – construction traffic	Yes	In	Overlap with potential construction traffic routes.

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
				Bridgwater, Somerset, TA5 1JQ		45 pitches for temporary use and change of use of agricultural land for storage of 100 caravans.					
15	Sedgemoor District Council	36/22/00024	December 2022	Inwood Farm, Cannington Road, Nether Stowey, Bridgwater, TA5 1HY	ST 20855 39610	Change of use of agricultural field for the provision of caravan pitches and continuation of existing caravan site for use by HPC workers until 31st December 2025. Erection of welfare building and bus shelter. Development of a footpath from site to Nether Stowey village.	Under consideration	Yes – construction traffic	Yes	In	Overlap with potential construction traffic routes.
16	Sedgemoor District Council	36/22/00026	February 2023	Budley Farm, Cannington Road, Nether Stowey, Bridgwater, TA5 1LL	ST 19835 39661	Erection of replacement livestock building to replace existing fire damaged livestock buildings and change of use of existing B2/B8 building to Class E(d) indoor gymnasium. Retention of two storey extension to west elevation of existing dwelling.	Granted Permission May 2023	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
17	Sedgemoor District Council	39/23/00004	July 2023	Combwich Wharf, Land To The South Of, Estuary	ST 26164 42108	Construction of a temporary AIL bypass track within Combwich	Granted Permission November 2023	No	No	Out	No – implemented prior to commencement of Proposed Works

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
				Park, Combwich, Bridgwater, Somerset, TA5		construction compound, including the modification of existing, and erection of new gates in connection with the construction of Hinkley Point C Power Station.					
18	Sedgemoor District Council	45/23/00027	January 2024	Swang Farm, Cannington, Bridgwater, TA5 2NJ	ST 23485 38998	Erection of ground mounted south facing solar panels and associated equipment of 2.029MWp installed capacity for the purpose of providing renewable energy to the Cannington Enterprises Manufacturing Plant.	Under Consideration	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
19	Sedgemoor District Council	51/22/00018	July 2018	Model Farm, Waldrons Lane, Wembdon, Bridgwater, TA5 2BA	ST 27568 39274	Change of use of grounds/gardens, including the provision of a pond to be used for public visits, together with the creation of a car park and erection of gardeners shed/ticket office.	Under Consideration	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
20	Sedgemoor District Council	51/22/00035	February 2023	Land to the North West of, Waldrons Lane, Wembdon, Bridgwater	ST 28569 40395	Change of use of agricultural land to dog training, including the erection of training shed, equipment store, fencing, parking provisions and landscaping.	Granted Permission May 2023	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works

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21	Sedgemoor District Council	52/23/00010	January 2024	4 Laburnum Lodges, Sloway Lane, West Huntspill, Highbridge, Somerset, TA9 3RJ	ST 30212 45247	Change of use of the site for accommodation of Hinkley Point workers for minimum period of 5 years thereafter reversion to holiday accommodation use only.	Under Consideration	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
22	Sedgemoor District Council	41/23/00010	August 2023	Land At, Bristol Road, Pawlett, Bridgwater, Somerset, TA6	ST 30164 42908	Erection of new convenience store and 6no. smaller commerical units, with associated access, parking and landscaping.	Under Consideration	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
23	Secretary of State for Department of Energy and Net Zero	EN010074 The West Somerset Tidal Lagoon at pre application stage	n/a	Culvercliff in Minehead to Lilstock, West Somerset	ST 16507 45499	Tidal Lagoon and associated electricity generating infrastructure with a generating capacity of circa 2.8GW per annum. A continuous breakwater wall spanning from Culvercliff in Minehead to Lilstock (approximately 21 km long).	Pre-application stage	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
24	Secretary of State for Department of Energy and Net Zero	EN010102 Hinkley Point C New Nuclear Power Station Material Change	n/a	Site to the west of TA5 1UD	ST 21043 45928	Removal of requirement to install Acoustic Fish Deterrent system (associated with cooling water intake heads) amendments to the Interim Spent Fuel Store and Meteorological Mast,	Pre-application stage	Yes	Yes	Yes	Yes due to potential temporal and spatial overlaps

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						addition of new Hinkley Point Substation and Sluice Gate Storage Racks.					
25	MMO	MLA/2023/00149/1	March 2023	Site to the North of Lilstock	ST 15963 49407	Cefas (on behalf of NNB GenCo (EDF energy)) manage, collect and analyse data from a waverider buoy which is located offshore of the Hinkley Point A, B and C (HPA, HPB, HPC) Nuclear power stations. The waverider buoy provides crucial information about the wave dynamics of the site and is an input into modelling sediment transport and coastal erosion. The information gathered has been historically valuable and is essential for monitoring the site going forwards.	Decided March 2024. Operation ongoing monitoring.	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
26	MMO	MLA/2017/00113/2	April 2017	Site to the North of Hinkley Point B	ST 18743 51107	NNB GenCo (HPC) Ltyd has a Development Consent Order and Marine Licence to build and operate a twin EPR nuclear power station at Hinkley Point, near	Complete	No	No	Out	This development forms part of baseline

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						Bridgwater in Somerset. The site will be protected from the sea by a seawall, which will be a mass concrete structure and have rock armour placed at the toe to prevent erosion and undercutting. This application is for a single-point mooring for delivery of the rock armour.					
27	MMO	MLA/2014/00262/2	2014 (and subsequent variations)	Site to the North of Hinkley Point B	ST 21184 46388	A seawall was built around the nuclear power station during its construction in the 1960's to protect it from flooding. The seawall is periodically inspected to ensure that it remains effective. The inspection in 2013 concluded that the integrity of the sea defences is impaired by the profile of the beach in front of the seawall The build-up of sand and cobbles along the base of the wall have blocked surface water drains and changed the profile of the wall. In order to reinstate the original profile of the	Complete	No	No	Out	This development forms part of the baseline

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						seawall at Hinkley Point and to ensure that the nuclear power station is protected from flooding in line with the Station's Safety Case as required by the Office for Nuclear Regulation (ONR), EDF Energy propose to remove the built up material and to refurbish the flap valves associated with the drains along the seawall fronting Hinkley Point A and Hinkley Point B. The area where material has been removed would be re-graded to an earlier beach slope. The 'removed' material would be spread across and on similar beach material located to the east of Hinkley Point B.					
28	MMO	MLA/2016/00426	2016	Site to the North of Hinkley Point B	ST 20987 46273	Application - Maintenance of existing works. Drumscreens	Complete	No	No	Out	These works are complete and form part of baseline
29	MMO	MLA/2016/00408	2016	Site to the North of Hinkley Point B	ST 21210 46285	Seal Pit (Syphon recovery chamber) - Hinkley Point B Nuclear Power Station - routine	Complete	No	No	Out	These works are complete and form part of baseline

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						marine activities licence					
30	Sedgemoor District Council	52/23/00002 Granted Permission	January 2023	Land At, Brue Farm, Huntspill Road, Highbridge, Somerset, TA9 3DE	ST 31552 46766	Variations of Condition 3 of Planning Permission 52/21/00016 (Variations of Conditions 3, 21, 28, 32 of Planning Permission 52/19/00001 (Hybrid (full and outline) application for the erection of up to 171 dwellings together with associated infrastructure, including provision of roundabout and public open space and seeking outline permission with all matters reserved for the erection of a primary school.) to reduce number of plots to 167 and associated layout changes) to replace screen walls with timber fencing.	Granted March 2023	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
31	Sedgemoor District Council	11/23/00025 Granted Permission	March 2023	41 The Esplanade, Burnham On Sea, Somerset, TA8 2AQ	ST 30366 49469	Change of use of existing guest house to 13no. self-contained residential units, with the erection of two storey rear (East) extension on site of existing store (to be	Granted December 2023	No	Yes	Out	Due due to distance unlikely to share receptors with the Proposed Works

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						demolished) and associated works.					
32	Sedgemoor District Council	11/23/00101 Under Consideration	October 2023	Beaufort House, 7 Rectory Road, Burnham On Sea, Somerset, TA8 2BY	ST 30665 49973	Demolition of buildings and the erection of 11no. new residential units in association to existing care home (revised scheme).	Not decided	No	Yes	Out	Due to distance unlikely to share receptors with the Proposed Works
33	Sedgemoor District Council	11/23/00124 Under Consideration	December 2023	19 Oxford Street, Burnham On Sea, Somerset, TA8 1LG	ST 30719 48845	Erection of 70 bed. care home on site of existing (to be demolished) including parking provision and associated works.	Not decided	No	Yes	Out	No – due to distance unlikely to share receptors with the Proposed Works
34	Sedgemoor District Council	Planning Allocation D33 in Sedgemoor Local Plan 2011 - 2032	n/a	n/a	n/a	Formal and Informal Recreational Outdoor Spaces Areas include: Steart Marshes WWT & EA Nether Stowey Playing Field Fiddington playing field Otterhampton Primary School Combwich Common	Allocation	No	No	Out	Due to the nature of the works proposed, it is considered unlikely this development will interact with the Proposed Works
35	Somerset Council	Environment Agency and Somerset Council Bridgwater Tidal Barrier	n/a	A Tidal Barrier structure on the River Parrett next to Express Park, Bridgwater		The Scheme will reduce tidal flood risk to 11,300 homes and 1,500 businesses. The whole scheme comprises of: A Tidal Barrier structure on the	In 2024, construction will begin on the temporary by-pass channel and barrier foundations. Construction of the western access track (to be known	Yes	Yes	In	River Parret links to Severn Estuary National Network Sites

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						River Parrett next to Express Park, Bridgwater. A substantial programme of works to improve existing downstream riverside flood banks and construct new secondary flood banks. Improved fish and eel passage at 12 upstream sites on both the rivers Parrett and Tone.	as Barrier Way) is near completion. It is anticipated that it will likely take 4 to 6 years to complete all elements of the scheme				
36	Sedgemore District Council	Gravity Local Development Order	n/a	Gravity Enterprise Zone, which is located near Puriton, just off Junction 23 of the M5, previously known as the former Royal Ordnance Factory.		Gravity Enterprise Zone, which is located near Puriton, just off Junction 23 of the M5, previously known as the former Royal Ordnance Factory.	LDO made	Yes	Yes	Out	Too great a distance to Exmoor & Quantock Oakwoods (SAC). Unlikely to combine with the Proposed Works to create an in-combination effed
37	SoS	Xlinks	21 November 2024	Landfall at Cornborough Range. All onshore-infrastructure within Torridge District Council		UK elements of the above described Project i.e. the HVDC transmission infrastructure within UK waters and onshore, the onshore infrastructure required to convert HVDC to High Voltage	Accepted for examination	No	Yes	Out	Whilst linkage to Severn Estuary, this development is located over 80km from the Proposed Work and works are unlikely to interact such that an in-combination effect would occur.

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						Alternating Current (HVAC) and the onshore HVAC transmission infrastructure required to deliver the electricity to the national grid. The Proposed Development also includes improvements and accommodation works to local roads that will aid its construction and operatio					
38	SoS	A417 Missing Link	June 2021	Cirencester and Gloucester		A new stretch of dual carriageway on the A417 between Cirencester and Gloucester	Granted 2022	No	Yes	Out	Temporal overlap 2027. Whilst linkage to Severn Estuary, this development is located over 80km from the Proposed Work and works are unlikely to interact such that an in-combination effect would occur on Severn Estuary
39	SoS	M5 Junction 10 Improvements Scheme	December 2023	Gloucester		The M5 Junction 10 Improvements Scheme includes the following: (1) Improvements to Junction 10 on the M5; (2) A new road linking Junction 10 to west Cheltenham; (3) Widening of the A4019, east of Junction 10; and (4) Provision of separate, dedicated footways and cycle	Examination	No	Yes	Out	Temporal overlap 2027. Whilst linkage to Severn Estuary, this development is located over 80km from the Proposed Work and works are unlikely to interact such that an in-combination effect would occur on Severn Estuary

ID	Planning Authority	Application Reference	Date of Application	Address	National Grid Reference	Description of Development	Application Status in December 2024	Spatial link to the Proposed Works	Temporal link to the Proposed Works	Screen in or out of the assessment	Justification
						lanes for non-motorised traffic along the local roads within scheme limits.					
40	MMO	MLA/2023/00113	14 March 2023	Offshore Devonshire coast		White Cross Offshore Windfarm is a proposed floating offshore windfarm located in the Celtic Sea with a capacity of up to 100MW	Submitted	No	Unlikely	Out	Sufficient distance (over 80km) considered unlikely to , to interact such that an in-combination effect would occur.

Stage 2

Report to Inform Appropriate Assessment

CONTENTS

TABLES

FIGURES

1 APPRAISAL OF POTENTIAL AEOI (PROPOSED WORKS ALONE)

1.1 INTRODUCTION

1.1.1 At Stage 1: Screening, the Applicant has concluded that there is the potential for likely significant effects (LSE) on designated sites and qualifying features to exist, and an Appropriate Assessment (AA) by the Competent Authority (i.e. the Office for Nuclear Regulation; ONR) is required. Therefore, the assessment progresses to Stage 2, AA. To support the Competent Authority in making its assessment, this document, a Report to Inform Appropriate Assessment (RIAA), has been prepared.

1.1.2 This second stage of the HRA involves undertaking an assessment of the potential Adverse Effects on the Integrity (AEoI) of the designated sites and interest features that have been screened into the assessment in view of the site's conservation objectives.

1.1.3 Where there are potential adverse effects, a review of mitigation options is carried out and mitigation measures are identified with a view to avoiding or minimising the effects. The potential effects on interest features of designated sites that have been screened into the AA (see **Section 4** of **Stage 1: Screening**) have been reviewed and are presented in this section.

1.1.4 This assessment has been carried out with due consideration of the nature and scale of the Proposed Works, the geographic location of the Works relative to the interest features of designated sites and the ecology, behaviour and sensitivities of the interest features to these environmental pressures/changes.

1.1.5 This RIAA uses the list of defined pressures for the marine environment outlined in the Marine Pressures-Activities Database (PAD) by JNCC[1]. 'Pressure' is defined as the mechanism through which an activity impacts the marine environment. A list of pressures was formally agreed by the OSPAR Intercessional Correspondence group on Cumulative Effects (ICG-C) and incorporated in the PAD for use in the UK.

1.1.6 Reference has also been made to Conservation Advice Packages or Advice on Operations for Designated Sites produced by Natural England and Natural Resources Wales under Regulation 33 of the Conservation (Natural Habitats, &c.) Regulations 1994. Conservation Advice Packages provide recommendations regarding specific interest features and support habitats and provide an indication of sensitivity, exposure and vulnerability to operations. Where Conservation Advice Packages are referred to, a description of sensitivity, exposure and vulnerability has been provided as described below:

- Sensitivity – The intolerance of a habitat, community or individual (or individual colony) of a species to damage, or death, from an external factor and the time taken for its subsequent recovery;

[1] JNCC. (2022). *Marine Pressures-Activities Database (PAD) v.1.5*. [Online]. Available at: https://hub.jncc.gov.uk/assets/97447f16-9f38-49ff-a3af-56d437fd1951 (Accessed January 2025)

- Exposure – The relative exposure of the interest features or their component supporting habitats to the effects of broad categories of operations, resulting from human activities; and
- Vulnerability – The exposure of a habitat, community or individual (or individual colony) of a species to an external factor to which it is sensitive.

1.1.7 Where Conservation Advice Packages are dated or specific habitat information is available, this RIAA has also been informed by the Marine Life Information Network (MarLIN), specifically the Marine Evidence based Sensitivity Assessment (MarESA). MarESA examines the biology or ecology of a feature (species or habitat) and provides evidence of the effect of a given pressure on the feature, considering the likely sensitivity of the feature to the pressure(s) in question. When discussing sensitivity of features, MarESA uses the following terms:

- Resistance – Indicates whether a feature can absorb disturbance or stress without changing character;
- Resilience – The ability of a feature to recover from disturbance; and
- Sensitivity – The likelihood of change when a pressure is applied to a feature is a function of the ability of the feature to tolerate or resist change (resistance) and its ability to recover from impact (resilience). The resistance and resilience scores are combined to provide an overall sensitivity.

1.2 APPRAISAL OF POTENTIAL AEOI ALONE FOR INTERTIDAL AND SUBTIDAL HABITATS

1.2.1 This section considers potential AEoI in relation to Annex I intertidal and benthic habitats that are qualifying features of designated sites potentially affected by the Proposed Works.

SEVERN ESTUARY/ MÔR HAFREN SAC

Summary of Screening Outcomes

1.2.2 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Severn Estuary/ Môr Hafren SAC:

- H1130 Estuaries (An overarching habitat complex comprising of habitats communities[2], some of which are additionally qualifying features in their own right);
- H1140 Mudflats and Sandflats Not Covered by Seawater at Low Tide;
- H1110 Sandbanks which are Slightly Covered by Sea Water all the Time; and
- H1170 Reefs.

1.2.3 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways:

- Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion; and
- Smothering and siltation rate changes (depth of vertical sediment overburden).

[2] Subtidal sandbanks, intertidal mudflats and sandflats, Atlantic saltmeadows, reefs of *Sabellaria alveolata*, hard substrate habitat notable communities

Conservation Objectives

1.2.4 The conservation objectives for qualifying features for the Severn Estuary/ Môr Hafren SAC are[3]:

'Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats and habitats of qualifying species;*
- *The structure and function (including typical species) of qualifying natural habitats;*
- *The structure and function of the habitats of qualifying species;*
- *The supporting processes on which qualifying natural habitats, and the habitats of qualifying species rely;*
- *The populations of qualifying species; and*
- *The distribution of qualifying species within the site'.*

1.2.5 Regulation 33 Conservation Advice[4] for the SAC sets out Natural England's and Natural Resources Wales' advice as to the conservation objectives for the Severn Estuary / Môr Hafren SAC to ensure favourable condition for each of the interest features. These are set out below:

Estuaries

1.2.6 The conservation objective for the "estuaries" feature of the Severn Estuary SAC is to maintain the feature in favourable condition, as defined below:

The feature will be considered to be in favourable condition when, subject to natural processes , each of the following conditions are met

i. the total extent of the estuary is maintained;

ii. the characteristic physical form (tidal prism/cross sectional area) and flow (tidal regime) of the estuary is maintained;

iii. the characteristic range and relative proportions of sediment sizes and sediment budget within the site is maintained;

iv. the extent, variety and spatial distribution of estuarine habitat communities within the site is maintained;

v. the extent, variety, spatial distribution and community composition of hard substrate habitats and their notable communities is maintained;

vi. the abundance of the notable estuarine species assemblages is maintained or increased;

[3] Natural England. (2014). European Site Conservation Objectives for Severn Estuary SAC (UK0013030). [Online]. Available at: https://publications.naturalengland.org.uk/publication/6081105098702848 (Accessed December 2024)
[4] Natural England. (2012). Severn Estuary/ Môr Hafren European Marine Site Regulation 33 Conservation Advice Package. [Online]. Available at: https://publications.naturalengland.org.uk/publication/3184206?category=3212324 (Accessed December 2024)

vii. *the physico-chemical characteristics of the water column support the ecological objectives described above;*

viii. *toxic contaminants in water column and sediment are below levels which would pose a risk to the ecological objectives described above.*

ix. *Airborne nutrient and contaminant loads are below levels which would pose a risk to the ecological objectives described above*

Mudflats and Sandflats Not Covered by Seawater at Low Tide

The conservation objective for "mudflats and sandflats" feature of the Severn Estuary SAC is to maintain the feature in favourable condition, as defined below:

The feature will be considered to be in favourable condition when, subject to natural processes , each of the following conditions are met:

i. *The total extent of the mudflats and sandflats feature is maintained;*

ii. *the variety and extent of individual mudflats and sandflats communities within the site is maintained;*

iii. *the distribution of individual mudflats and sandflats communities within the site is maintained;*

iv. *the community composition of the mudflats and sandflats feature within the site is maintained;*

v. *the topography of the intertidal flats and the morphology (dynamic processes of sediment movement and channel migration across the flats) are maintained.*

Sandbanks which are Slightly Covered by Sea Water all the Time

The conservation objective for the "subtidal sandbanks" feature of the Severn Estuary SAC is to maintain the feature in favourable condition, as defined below:

The feature will be considered to be in favourable condition when, subject to natural processes , each of the following conditions are met:

i. *the total extent of the subtidal sandbanks within the site is maintained;*

ii. *the extent and distribution of the individual subtidal sandbank communities within the site is maintained;*

iii. *the community composition of the subtidal sandbank feature within the site is maintained;*

iv. *the variety and distribution of sediment types across the subtidal sandbank feature is maintained;*

v. *the gross morphology (depth, distribution and profile) of the subtidal sandbank feature within the site is maintained.*

Reefs

The conservation objective for the "reefs" feature of the Severn Estuary SAC is to maintain the feature in a favourable condition, as defined below:

The feature will be considered to be in favourable condition when, subject to natural processes , each of the following conditions are met:

i. the total extent and distribution of Sabellaria reef is maintained;

ii. the community composition of the Sabellaria reef is maintained;

iii. the full range of different age structures of Sabellaria reef are present;

iv. the physical and ecological processes necessary to support Sabellaria reef are maintained.

Assessment of Effects

1.2.7 The Marine Habitat Mapping Survey (2020) or the Intertidal Validation Survey (2022) (herein collectively referred to as the 'marine surveys') identified the following qualifying features and sub-features of the Severn Estuary / Môr Hafren SAC shown in **Table 1-1**.

Table 1-1 – Qualifying Features and Sub-Features of the Severn Estuary / Môr Hafren SAC Identified within the HPB Marine Surveys

Qualifying Feature	Sub-Feature	Community	Biotope Code	Biotope Name	Within Works Area
Subtidal sandbanks which are covered by seawater all the time	Sublittoral sands and muddy sands	*Nephtys cirrosa* and *Macoma balthica* in variable salinity infralittoral mobile sand	SS.SMu.ISaMu.NhomLim	*Nephtys cirrosa* and *Macoma.balthica* in variable salinity infralittoral mobile sand	Yes
	Sublittoral cohesive mud and sandy mud communities	*Nephtys hombergii* and *Tubificoides* spp. in variable salinity infralittoral soft mud	SS.SMu.SMuVS.Nhom.Tubi	*Nephtys hombergii* and *Tubificoides* spp. in variable salinity infralittoral soft mud	No
		Nephtys hombergii and *Macoma balthica* in infralittoral sandy mud	LS.LMu.MEst.NhomLimStr	*Nephtys hombergii, Macoma balthica* and *Streblospio shrubsolii* in littoral sandy mud	No
Mudflats and sandflats not covered by seawater at low tide	Intertidal muddy sand communities	*Macoma balthica* and *Arenicola marina* in muddy sand shores (LMS.MS.MacAre)	LS.LSa.MuSa.MacAre	*Macoma balthica* and *Arenicola marina* in littoral muddy sand	No
Reefs	N/A	Sabellaria alveolata on variable salinity sublittoral mixed sediment	SS.SBR.PoR.SalvMx	Sabellaria alveolata on variable salinity sublittoral mixed sediment	Yes

Qualifying Feature	Sub-Feature	Community	Biotope Code	Biotope Name	Within Works Area
		Sabellaria alveolata reefs on sand abraded eulittoral rock	LS.LBR.Sab.Salv	Sabellaria alveolata reefs on sand abraded eulittoral rock	Yes
Estuaries	Reefs of *Sabellaria alveolata*	Sabellaria alveolata on variable salinity sublittoral mixed sediment	SS.SBR.PoR.SalvMx	Sabellaria alveolata on variable salinity sublittoral mixed sediment	Yes
		Sabellaria alveolata reefs on sand abraded eulittoral rock	LS.LBR.Sab.Salv	Sabellaria alveolata reefs on sand abraded eulittoral rock	Yes
	Hard substrate habitat notable communities	*Corrallina officinalis and coralline crusts in shallow eulittoral rockpools*	LR.Rkp.Cor	LR.FLR.Rkp.Cor.Cor	No
		Sabellaria alveolata reefs on sand abraded eulittoral rock	LS.LBR.Sab.Salv	Sabellaria alveolata reefs on sand abraded eulittoral rock	Yes

1.2.8 This section has also been informed by the latest condition assessment of the Severn Estuary SAC completed by Natural Resources Wales in 2018[5] and summarised in **Table 1-2**.

Table 1-2 – Summary of Qualifying Feature Condition Assessment

Qualifying Feature	Condition Assessment
Estuaries	Unfavourable
Mudflats and Sandflats Not Covered by Seawater at Low Tide	Unfavourable
Sandbanks which are Slightly Covered by Sea Water all the Time	Favourable
Reefs	Unknown

Penetration or disturbance of the substratum subsurface, including abrasion / disturbance of the surface of the substratum or seabed

1.2.9 This section addresses the potential for AEoI from effects associated with the abrasion / disturbance of the surface of the substratum or seabed and penetration or disturbance of the substratum subsurface, specifically related to the dismantling works, the use of jack-up barges and anchors from vessels. Only qualifying features or sub-features within the direct Works Area have been considered as there will be no interaction with this pressure for qualifying features outside the direct Works Area.

1.2.10 During decommissioning, offshore and/or intertidal works, notably the CW dismantling and AEDL/STPL installation, may result in disturbance to four qualifying feature habitats of the Severn Estuary/ Môr Hafren SAC which are assessed individually below.

Sandbanks which are Slightly Covered by Sea Water all the Time

1.2.11 The marine surveys did not identify any known sandbanks; however, they did identify one sub-feature of sandbanks within the Works Area. Habitat mapping indicates the biotope ***Nephtys cirrosa* and *Macoma balthica* in variable salinity infralittoral mobile sand (SS.SMu.ISaMu.NhomLim)** covers the majority of the CW dismantling Works Area. The Severn Estuary / Môr Hafren SAC EMS Regulation 33 Conservation Advice states that subtidal sandbanks have a low sensitivity, low exposure and low vulnerability to this pressure[6]. **Table 1-3** below shows the resistance, resilience and sensitivity of this biotope.

[5] Natural Resources Wales. (2018). Severn Estuary / Môr Hafren Special Area of Conservation Indicative site level feature condition assessments 2018. [Online]. Available at: https://naturalresources.wales/media/686277/eng-report-235-severn-estuary-sac-indicative-site-level-feature-condition-2018.pdf (Accessed January 2025)

[6] Natural England (2009). Severn Estuary/ Môr Hafren SAC European Marine Site Conservation Advice Package. [Online]. Available at: https://publications.naturalengland.org.uk/publication/3184206 (Accessed January 2025)

Table 1-3 - Resistance, resilience and sensitivity of *Nephtys cirrosa* and *Macoma balthica* in variable salinity infralittoral mobile sand to abrasion / disturbance and penetration of the surface of the substratum or seabed[7]

Pressure	Resistance	Resilience	Sensitivity
Abrasion/disturbance of the surface of the seabed	Low	Medium	Medium
Penetration or disturbance to the substrate below the seabed	Low	Low	High

1.2.12 The biotope identified is considered to have a low resistance to this pressure, however resistance to this pressure varies according to the activity, with activities such as trawling and dredging having the greatest impact. The burrowing and tunnelling traits of characterising species of this biotope mean they have some resistance to this pressure[7]. Research has shown that *Nephtys hombergii* is perhaps more affected by this pressure with several studies showing reduced abundance in the presence of where fishing activity, bait digging and cockle harvesting took place[7]. Boat moorings have also demonstrable impacts on benthic communities in close proximity. Fine sediments displayed the least disturbance from moorings, suggesting a smaller impact to this specific biotope compared to other biotopes[7].

1.2.13 It is important to consider the extent and duration of this pressure. There is approximately 11,690m^2 of this biotope located within the Works Area; however, the footprint directly affected by the Proposed Works will be limited to anchorage placement and the feet of the two barges required to facilitate the dismantling of the CW Intake Structure; the Excavator Barge (a Jack Up Barge (JuB)) and the Crane Barge (Flat-Top Barge). There is no overlap with this biotope and the AEDL and STPL Works Area, therefore these activities are not considered further. Based on the assumption that the Excavator Barge will need to be repositioned approximately three times, and the Crane Barge is to be repositioned five times, this will result in a disturbance footprint of approximately 16m^2. For the purposes of this assessment, it has been assumed that approximately 20 ten-tonne anchor deployments will be required in the Works Area equating to approximately 80 m^2 of potential disturbance from anchors to the seabed. The proposed CW dismantling works will therefore take place over a small spatial scale, equating to approximately 0.85% of the total area of habitat within the Works Area. The Severn Estuary / Môr Hafren SAC EMS Regulation 33 Conservation Advice states the overall area of the Severn Estuary Ramsar Site, SPA and SAC is approximately 73,715.4 hectares, with roughly two thirds of that subtidal habitats (including stable sandbanks and shifting sediments of gravel, sand and mud), equating to approximately 48,652

[7] Ashley, M., Budd, G.C., Tillin, H.M. and Watson, A. (2023). *Nephtys hombergii* and *Macoma balthica* in infralittoral sandy mud. In Tyler-Walters H. and Hiscock K. (eds) *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [Online]. Available from: https://www.marlin.ac.uk/habitat/detail/173 (Accessed January 2025)

hectares. In the context of the wider subtidal habitats in the Severn Estuary, the Proposed Works are limited.

1.2.14 When considering the favourable condition status and in light of the conservation objectives, the Proposed Works will not affect the total extent of subtidal sandbanks within the Works Area as the Proposed Works are temporary and of limited spatial extent. The extent, distribution and composition of individual subtidal sandbank communities within the Works Area may be temporarily altered on a very local scale by the Proposed Works, however it is anticipated that they will recover swiftly. Communities inhabiting mobile substrates are pre-adapted to disturbance (e.g. from storm events) and are able to rapidly re-colonise previously disturbed areas. The Proposed Works will not influence the variety and distribution of sediment types within the Works Area and will not influence the gross morphology of features. Furthermore, the removal of infrastructure may be covered by subtidal sand over time based on natural tidal action.

1.2.15 There is, therefore, no potential for an AEoI to the conservation objectives on subtidal sandbanks of the Severn Estuary / Môr Hafren SAC associated with penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion during the Proposed Works alone.

Reefs

1.2.16 The marine surveys identified extensive subtidal and intertidal *Sabellaria alveolata* reef. An area of *S. alveolata* reef spanned the intertidal within the central region of the survey area, covering an area of approximately 220,105m^2. Approximately 4,166m^2 of the *S.alveolata* reef was located within the AEDL and STPL Works Area. In the subtidal, two areas of *S. alveolata* reef were identified covering a total area of approximately 256,420m^2 within the survey area, with approximately 3,321m^2 located within the CW intake dismantling Works Area. The Severn Estuary / Môr Hafren SAC Regulation 33 Conservation Advice states that reefs have a moderate sensitivity, low exposure and low vulnerability to penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion / disturbance of the surface of the substratum or seabed[8]. Two biotopes have been recorded in the Severn Estuary, ***S. alveolata* on variable salinity sublittoral mixed sediment** and ***S.alveolata* reefs on sand abraded eulittoral rock**. Both biotopes have been recorded in the marine survey area and within the Works Area. **Table 1-4** below shows the resistance, resilience and sensitivity of this biotope.

[8] Natural England (2009). Severn Estuary/ Môr Hafren SAC European Marine Site Conservation Advice Package. [Online]. Available at: https://publications.naturalengland.org.uk/publication/3184206 (Accessed January 2025)

Table 1-4 – Resistance, resilience and sensitivity of *S. alveolata* on variable salinity sublittoral mixed sediment and *S.alveolata* reefs on sand-abraded eulittoral rock to abrasion / disturbance and penetration of the surface of the substratum or seabed[9][10]

Pressure	Resistance	Resilience	Sensitivity
Abrasion/disturbance of the surface of the seabed	Medium	High	Low
Penetration or disturbance to the substrate below the seabed	Low	Medium	Medium

1.2.17 Impacts of surface abrasion from fishing trawls and trampling have been investigated on subtidal and intertidal *S.alveolata* reefs which demonstrated swift recovery rates. Traces of damage from beam trawling had disappeared within four to five days following disturbance and within 23 days for light trampling. Where areas of reef experienced more severe damage, recovery took longer but with visible signs of recovery after 23 days. For deeper penetration of the seabed, recovery is likely to take place between 2-10 years when considering the time required for larval recruitment in order for reefs to recover. However, small, localised areas of repair are evident within months.

1.2.18 There is approximately 3,321m^2 of *S.alveolata* reef present within the CW intake dismantling works area and approximately 4,166m^2 of *S.alveolata* reef within the AEDL/STPL Works Area. Despite this, only a very small proportion of *S.alveolata* reef within the Works Area will be impacted. Penetration, disturbance and abrasion of the seabed will be spatially limited to the footprint described above in **paragraph 1.2.13**. Therefore, disturbance to *S.alveolata* reef within the AEDL/STPL will be limited to a single disturbance event of approximately 2m^2 from the JUB feet. Based on a single disturbance event and the small footprint, it is considered that *S.alveolata* reef can swiftly recover. In relation to the CW intake dismantling, there is the potential for multiple disturbances associated with mechanical dismantling of the CW Intake Structure and the repositioning of the JUB and Flat-Top Barge and deployment of anchors and anchor chains within the Works Area. Should areas of *S.alveolata* reef be impacted in the same location on multiple occasions, this will impact the ability for the habitat to recover. In order to reduce the impacts of the CW intake dismantling on *S.alveolata* reef, the Applicant has committed to the following mitigation measures:

- A pre-works survey will be undertaken to determine any changes in extent and distribution of habitats since the completion of the marine ecological surveys. This will also include

[9] Tillin, H.M., Tyler-Walters, H., & Watson, A., (2024). *Sabellaria alveolata* on variable salinity sublittoral mixed sediment. In Tyler-Walters H. *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [Online]. Available from: https://www.marlin.ac.uk/habitat/detail/1012 (Accessed January 2025)
[10] Tillin, H.M., Jackson, A., Garrard, S.L., & Watson, A., 2024. Sabellaria alveolata reefs on sand-abraded eulittoral rock. In Tyler-Walters H. and Hiscock K. (eds) Marine Life Information Network: Biology and Sensitivity Key Information Reviews. [Online] Available from: https://www.marlin.ac.uk/habitat/detail/351 (Accessed January 2025)

consideration of aspects such as tube height to determine 'reefiness'. Where feasible, the Applicant will explore the designation of anchor exclusion zones based on the results of this to avoid planned anchor placements on *S.alveolata* reef wherever possible.

- Positioning of the JUBs or Flat-Top Barge (Excavator Barge and Crane Barge) should avoid *S.alveolata* reef wherever possible. The repositioning of the Excavator Barge and Crane Barge should be limited to as few movements as technically feasible to complete the Proposed Works.
- Where the complete avoidance of *S.alveolata* reef is not possible, deployment of the JUBs and anchors should be limited to low quality reef structures wherever possible.

1.2.19 When considering the above in the context of the conservation objectives, the extent and distribution of *S.alveolata* reef may be temporarily impacted by the Proposed Works; however, impacts are either of a singular event, or mitigation has been proposed to minimise the number of disturbance events. It is considered that based on the limited spatial extent of the Proposed Works, *S.alveolata* reef will recover quickly through regrowth and colonisation by adult tube building worms within adjacent *S.alveolata* reef. The community composition and age structure of the *S.alveolata* reef will experience temporary damage within the direct footprint of disturbance. However as stated above, this is anticipated to recover quickly. The physical and ecological processes to support *S.alveolata* reef (particularly the abundance of suitable coarse sediments and abundance of food) are considered to be unaffected. Larval supply of *Saballeria* may be temporarily affected through the loss of, and damage to, tube building worms within the direct footprint, however this is anticipated to recover quickly through larval supply from the adjacent reef.

1.2.20 There is, therefore, no AEoI to the conservation objectives for reef of the Severn Estuary / Môr Hafren SAC associated with penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion during the Proposed Works alone.

Estuaries

1.2.21 The Estuaries feature includes, inter alia, five habitats namely subtidal sandbanks, intertidal mudflats and sandflats, Atlantic salt meadows, *S.alveolata* reefs and hard substrate habitat notable communities. Subtidal sandbanks, intertidal mudflats and sandflats, *S.alveolata* reefs and hard substate habitat notable communities (specifically *Corallina officinalis* and coralline crusts in shallow eulittoral rockpools) were identified in the survey area. Of these, only *Sabellaria* reefs and subtidal sandbanks were identified within the Works Area. Therefore, it is only these habitats that have been considered in relation to penetration or disturbance of the substratum subsurface, including abrasion / disturbance of the surface of the substratum or seabed resulting from the Proposed Works. These habitats have been assessed in their own right against their relevant conservation objectives in the sections above.

1.2.22 Based on the conclusions for these habitat communities above, there is no potential for AEoI to the conservation objectives of the estuaries feature of the Severn Estuary / Môr Hafren SAC associated with penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion during the Proposed Works alone.

Siltation rate changes, including smothering (depth of vertical sediment overburden)

1.2.23 This impact relates to the altering of the natural rates of siltation and the subsequent settling out of sediments in the water column and including light and heavy siltation rate changes (a benchmark of up to 5cm and 30cm respectively). Sensitive habitats and habitat communities can be adversely impacted by the redeposition of mobilised sediment through smothering.

1.2.24 This section focuses particularly on dismantling the CW intake structure, which has the greatest potential to suspend sediment into the water column as a result of mechanical breaking, use of vessel thrusters and deployment of JUB feet as well as anchors. The AEDL and STPL works will be predominantly contained within the existing CW Outfall Channel and is therefore unlikely to generate significant volumes of suspended sediment. Sediment suspension may occur as a result of the deployment of the JUB legs.

1.2.25 It is recognised that sediment may be mobilised on multiple occasions associated with dismantling around each side of the CW intake (particularly cutting and removal of material) and the need to reposition marine vessels, equipment and anchor deployment. Despite this, the combined volume of sediment and subsequent deposition of sediment is not considered to be of significance. In addition, the sediment is predominantly sand, mud and gravel. Sand and gravel is unlikely to enter suspension and predominantly be redeposited very close to the point of origin, whereas finer muds are likely to disperse over a greater distance. It should be noted that activities will not be constant and ongoing tidal action is anticipated to disperse finer sediment mobilised during activities over considerable distances, as the tidal ellipse extends in the order of 20km on a spring tide, with an excursion (the net horizontal distance over which water moves during one tidal cycle) of 1-2 km. The tidal energy of the Seven Estuary and background suspended sediment levels are high; therefore, any habitats and/or species present are likely to be accustomed to higher suspended sediment concentrations.

1.2.26 Based on the Proposed Works and the particle size analysis of sediments in the Works Area, it is anticipated that suspended sediment changes and siltation impacts would be more akin to the light benchmark of approximately 5cm sediment deposition. Habitats present within immediate proximity (a few metres) may experience greater levels of deposition as sediment is mobilised or mechanically moved during the Proposed Works, with the volume of suspended sediment depositing reducing with distance from the Proposed Works. It is likely given the dynamic nature of the Severn Estuary that localised changes in sediment topology will be affected by tidal action. The levels of suspended sediment mobilised as a result of the Proposed Works are considered to be well within the natural variability experienced by habitats in the Severn Estuary.

Mudflats and Sandflats Not Covered by Seawater at Low Tide

1.2.27 The marine surveys identified mudflat and sandflat habitat interspersed within, and fringing, a narrow rock platform within the intertidal zone immediately north of Hinkley Point B Power Station. Biotope mapping identified the sub-feature ***Macoma balthica* and *Arenicola marina* in littoral muddy sand (LS.LSa.MuSa.MacAre)** located primarily within the western extent of the survey area and interspersed between rock platforms extending along the intertidal and to the east of the survey area. This biotope was not located within the Works Area but is located within the proposed ZOI for the mobilisation of sediment resulting from the Proposed Works.

1.2.28 This qualifying feature has an ‘Unfavourable’ condition status primarily due to coastal squeeze resulting in habitat loss, chemical failures and ecological failure (saltmarsh only) under the Water

Framework Directive, however the typical species was assessed as 'Favourable'[11]. The Regulation 33 Conservation Advice[4] indicates that this qualifying feature has a 'moderate vulnerability' to changes in suspended sediment and smothering, however notes that an increase in suspended sediment is unlikely to be an issue unless it leads to smothering. The biotope LS.LSa.MuSa.MacAre occurs in extensive intertidal flats and the characterising species the lugworm *Arenicola marina* and Baltic tellin *Macoma balthica* burrow in the sediment to depths of 40cm and 5-6cm respectively[12]. **Table 1-5** outlines the sensitivity of this biotope to smothering and siltation rate changes.

Table 1-5 - Resistance, resilience and sensitivity of *Macoma balthica and Arenicola marina in littoral muddy sand* to smothering and siltation rate changes[12]

Pressure	Resistance	Resilience	Sensitivity
Smothering and siltation rate changes (light)	High	High	Not Sensitive
Smothering and siltation rate changes (heavy)	Low	Medium	Medium

1.2.29 This biotope is not sensitive to light siltation. For heavier siltation, the biotope has medium sensitivity based on the differing tolerances and responses of its key constituent species. *A.marina* may experience reduced abundance, as deposition reduces the effective irrigation of their deeper burrows. Though *M.balthica* does not burrow very deeply, it responds opportunistically to this pressure and is considered robust. Such opportunistic species are likely to exploit the change in nutrients and quickly colonise the sediment[12]. Recovery of this biotope as a result of this impact is anticipated to range between 2-10 years, however this is heavily dependent on the volume of sediment mobilised and frequency of suspension/deposition events.

1.2.30 Given the distance of LS.LSa.MuSa.MacAre biotope from the Proposed Works and the small quantity of suspended sediment that will be mobilised, existing concentrations of suspended sediment and high tidal action there is limited potential for suspended sediment deposition and smothering of this qualifying feature. When considering the conservation objectives, the total extent, variety, distribution and community composition will not be impacted by siltation rate changes, including smothering (depth of vertical sediment overburden). Based on the high resistance and resilience, and low sensitivity of these habitats, and considering the conservation objectives of the *mudflats and sandflats not covered by seawater at low tide* feature of the Severn Estuary / Môr

[11] Natural Resources Wales. (2018). Severn Estuary / Môr Hafren Special Area of Conservation Indicative site level feature condition assessments 2018. [Online]. Available at: https://naturalresources.wales/media/686277/eng-report-235-severn-estuary-sac-indicative-site-level-feature-condition-2018.pdf (Accessed January 2025)

[12] Ashley, M., Tillin, H.M., Williams, E., Tyler-Walters, H., Lloyd, K.A., & Watson, A., (2024). *Macoma balthica* and *Arenicola marina* in littoral muddy sand. In Tyler-Walters H. *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [Online]. Available from: https://www.marlin.ac.uk/habitat/detail/1087 (Accessed January 2025)

Hafren SAC, there is no potential for AEoI from siltation rate changes, including smothering during the Proposed Works alone.

Sandbanks which are Slightly Covered by Sea Water all the Time

1.2.31 As discussed in **paragraph 1.2.11**, no sandbanks were identified in the marine surveys, however the subfeature biotope ***Nephtys cirrosa* and *Macoma balthica* in variable salinity infralittoral mobile sand (SS.SMu.ISaMu.NhomLim)** was present. This qualifying feature has a 'Favourable' condition status with respect to extent and distribution, structure and function and typical species[11]. The Regulation 33 Conservation Advice[4] indicates this qualifying feature has a moderate vulnerability to this impact with an increase in sedimentation unlikely to cause problems unless it leads to smothering. The biotope (SS.SMu.ISaMu.NhomLim) is often found on the mid and lower shore and is thus likely to experience tidal redistribution of fine sediment. The characterising species *Nephtys hombergii, Aphelochaeta marioni, Streblospio shrubsolii* and *Tubificoides benedii* burrow in the sediment to depths of 15cm and are expected to be well established to these conditions[13]. **Table 1-6** outlines the sensitivity of this biotope to smothering and siltation rate changes.

Table 1-6 - Resistance, resilience and sensitivity of *Nephtys cirrosa and Macoma balthica in variable salinity infralittoral mobile sand* to smothering and siltation rate changes[12]

Pressure	Resistance	Resilience	Sensitivity
Smothering and siltation rate changes (light)	High	High	Not Sensitive
Smothering and siltation rate changes (heavy)	Medium	Medium	Medium

1.2.32 This biotope is considered not sensitive to light siltation rate changes, based on a single discrete event. For heavy siltation rate changes, this biotope has a medium sensitivity based on the differing tolerances of the characterising species. However, research suggests these species are generally resistant to this impact due to their mobility within the sediment[12]. As previously stated, species such as *M.balthica* respond opportunistically to such pressures. Recovery of this biotope as a result of this impact is anticipated to range between 2-10 years, depending on the quantity of sediment mobilised and frequency of occurrence.

1.2.33 Based on the presence of a sub-feature of this qualifying feature within the Works Area, there is the potential for direct impacts resulting from the mobilisation of suspended sediment and subsequent deposition. This biotope may experience heavier siltation and smothering in the immediate footprint surrounding the CW intake as a result of mechanical dismantling. Particle size analysis of sediment

[13] Ashley, M., Budd, G.C., Tillin, H.M. & Watson, A., 2023. *Nephtys hombergii* and *Macoma balthica* in infralittoral sandy mud. In Tyler-Walters H. and Hiscock K. (eds) *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [Online]. Available from: https://www.marlin.ac.uk/habitat/detail/173 (Accessed January 2025)

within the Works Area for the CW dismantling demonstrated that 68.48% of the sediment comprised sand, 31.08% mud and 0.44% gravel. The majority of the sediment will therefore likely fall out of suspension within several metres of the CW intake, with the remainder being naturally dispersed by the tide.

1.2.34 When considering the conservation objectives, the total extent of subtidal sandbanks is not considered to be affected as sands and gravels will re-deposit locally and finer sediments will be mobilised over a larger distance, but remain part of the sediment budget for these features in the Severn Estuary. There will thus be no loss of sediment required to form these habitats, and the variety and distribution of sediment types will not be significantly affected. There may be localised temporary changes to communities present within immediate proximity of the CW intake dismantling where sediment deposition may be of a greater depth, however the biotope present is considered to be robust to this pressure. There may be highly localised changes to the gross morphology of this biotope immediately adjacent to the CW dismantling works. However, this will be very localised based on the nature of the Proposed Works and considered within the natural variability experienced by this feature based on its mobility in response to the large tidal movements within the Severn Estuary.

1.2.35 Based on the favourable condition status and attributes of the *sandbanks which are slightly covered by seawater all the time* feature of the Severn Estuary / Môr Hafren SAC, there is no potential for AEoI from siltation rate changes, including smothering during the Proposed Works alone.

Reefs

1.2.36 The reefs qualifying feature has an 'Unknown' condition status based on the lack of sampling data[11]. The Regulation 33 Conservation Advice[4] indicates this qualifying feature has a 'Moderate' vulnerability to changes in suspended sediment with reduced availability of sand, essential for tube building, could lead to reduced development of reeds and decline of colonies. The advice also notes that an increase in suspended sediment is unlikely to cause problems unless it leads to smothering of the reef. Sensitivity data for the specific biotopes identified within the marine surveys is presented in **Table 1-7.**

Table 1-7 - Resistance, resilience and sensitivity of *S. alveolata* on variable salinity sublittoral mixed sediment *S. alveolata* on variable salinity sublittoral mixed sediment and *S.alveolata* reefs on sand-abraded eulittoral rock to smothering and siltation rate changes[10]

Pressure	Resistance	Resilience	Sensitivity
Smothering and siltation rate changes (light)	High	High	Not Sensitive
Smothering and siltation rate changes (heavy)	Low	Medium	Medium

1.2.37 Sensitivity data suggest this specific biotope is considered not sensitive to light smothering and siltation rate changes. This is based on research that shows *S.alveolata* survived short-term burial for days and even weeks resulting from storms that altered sand levels up to two metres and

unaffected by smothering with faeces and pseudofaeces from intensive mussel cultivation[14]. Changes in siltation rate associated with altered flows will unfavourably alter long-term habitat suitability for this species. For heavier siltation, this biotope has a medium sensitivity. Natural events such as storms are likely to result in episodic burial by coarse sediments which are subsequently removed by wave action and tides. The degree of mortality experienced depends on several factors, including length of burial. An overburden of 30cm is considered to potentially lead to some mortality if larger areas are impacted, however the depth of sedimentation resulting from the Proposed Works is not anticipated to reach this benchmark. Therefore, no significant mortality of *S.alveolata* reef is anticipated.

1.2.38 When considering the nature of the Proposed Works in the context of the above, the volumes of and levels of sediment are considered to be within the natural variability experienced by this biotope. Mobilised suspended sediment is likely to deposit within several metres of the CW dismantling works which has the potential to overlap with *S. alveolata* reef. Despite this, the mobilisation of suspended sediment will be episodic (based on the cutting and removal of material and the repositioning of the JUBs to dismantle the CW intake) as the Proposed Works proceed, however, the volume and depth of sediment deposited will be limited. In addition, this biotope is shown to be not sensitive to lighter changes in siltation rate. Smothering and sediment disturbance from the Proposed Works is likely to be within the boundaries experienced by *S.alveolata* reef from tidal action and storms at worst. Considering the above in the context of the conservation objectives, the Proposed Works will not have an adverse impact on the total extent and distribution, community composition, range of age structures and physical and ecological processes the reef features.

1.2.39 There is no potential for AEoI to the conservation objectives of the reef feature of the Severn Estuary / Môr Hafren SAC associated with siltation rate changes, including smothering during the Proposed Works alone.

Estuaries

1.2.40 The habitat communities that are designated in their own right within the Severn Estuary / Môr Hafren SAC and were identified within the survey area have been assessed in the preceding sections. There is one habitat community (hard substate habitat notable communities) within the Estuaries qualifying feature that is to be assessed for this pressure.

1.2.41 The biotope **Coralline crusts and *Corallina officinalis* in shallow eulittoral rockpools** (**LR.FLR.Rkp.Cor.Cor**) was identified within the intertidal zone to the west of the AEDL and STPL Works Area. The Regulation 33 Conservation Advice[4] suggests that the Estuaries qualifying feature has a high vulnerability to smothering and moderate vulnerability to changes in suspended sediment. Sensitivity data for the specific biotope identified within the marine surveys is presented in **Table 1-8.**

Table 1-8 - Resistance, resilience and sensitivity of Coralline crusts and *Corallina officinalis* in shallow eulittoral rockpools to smothering and siltation rate changes[14].

Pressure	Resistance	Resilience	Sensitivity
Smothering and siltation rate changes (light)	Low	Medium	Medium
Smothering and siltation rate changes (heavy)	Low	Medium	Medium

1.2.42 Sensitivity data suggests the specific biotope identified has a medium sensitivity to light and heavy siltation rate changes and smothering and is more influenced by length of exposure to the impact. The effects of siltation on this biotope are dependent on local conditions such as whether tide pools are flushed rapidly in wave exposed environments or whether sediment remains in-situ which increases exposure. In addition, the characterising species have differing sensitivities, for example, limpets are considered most sensitive as suspended sediment changes could affect grazing. With greater sediment deposition, the risk of complete burial of algal turf increases which may result in the loss of some photosynthetic corallines over time, and subsequent impacts to grazers.

1.2.43 Given the distance of this biotope from the Proposed Works and the small volume of suspended sediment likely to be mobilised, there is limited potential for suspended sediment deposition and smothering to interact with this qualifying feature. When considering the conservation objectives, there is no potential for AEoI to the conservation objectives of the *mudflats and sandflats not covered by seawater at low tide* feature of the Severn Estuary / Môr Hafren SAC associated with siltation rate changes, including smothering during the Proposed Works alone.

SEVERN ESTUARY/ MÔR HAFREN RAMSAR SITE

Summary of Screening Outcomes

1.2.44 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Severn Estuary/ Môr Hafren Ramsar site:

- Estuaries (An overarching habitat complex comprising several habitats[15], which are also qualifying features in their own right).

1.2.45 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all interest features listed above:

[14] Tillin, H.M. & Budd, G., (2018). Coralline crusts and *Corallina officinalis* in shallow eulittoral rockpools. In Tyler-Walters H. *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [Online]. Available from: https://www.marlin.ac.uk/habitat/detail/1183 (Accessed January 2025)
[15] Subtidal sandbanks, intertidal mudflats and sandflats, Atlantic saltmeadows, reefs of *Sabellaria alveolata*, hard substrate habitat notable communities

- Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion; and
- Siltation rate changes, including smothering (depth of vertical sediment overburden).

Conservation Objectives

1.2.46 The conservation objectives for qualifying interest features for the Severn Estuary/ Môr Hafren Ramsar Site are the same for the SAC 'Estuaries' feature described in **paragraphs 1.2.4 and 1.2.5**.

Assessment of Effects

1.2.47 The assessment of this interest feature has been considered as part of the *estuaries* feature of the Severn Estuary / Môr Hafren SAC above. The assessment concluded no AEoI to this feature.

1.3 APPRAISAL OF POTENTIAL AEOI ALONE FOR MARINE MAMMALS

1.3.1 This section considers potential AEoI to designated sites for marine mammals resulting from the Proposed Works. Specifically, it considers designated sites for harbour porpoise and grey seal based on the requirement to consider Marine Mammal Management Units (MMMU) for these species. MMMUs are considered to be the relevant spatial scales for marine mammal species that represent the best scientific understanding of the structure of populations and any ecological differences within such populations.

1.3.2 In accordance with Natural Resources Wales Position Statement[16], an AA should be carried out on the closest site to the proposed plan or project location first for harbour porpoise and grey seal. Should the AA determine no AEoI at the closest site, the same conclusion will then apply to all other, more distant, sites for the qualifying feature. If AEoI cannot be ruled out, a sequential/iterative assessment should be carried out considering the next closest site.

BRISTOL CHANNEL APPROACHES / DYNESFEYDD MÔR HAFREN SAC

Summary of Screening Outcomes

1.3.3 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC:

- Harbour porpoise (*Phocoena phocoena).*

1.3.4 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all interest features listed above:

- Underwater noise changes; and
- Changes to supporting habitat and prey availability.

[16] Natural Resources Wales. (2022). NRW's position on the use of Marine Mammal Management Units for screening and assessment in Habitats Regulations Assessments for Special Areas of Conservation with marine mammal features. [Online]. Available at: https://cdn.cyfoethnaturiol.cymru/media/695250/ps006-mmmus-in-hra-position-statement-may22.pdf (Accessed January 2025)

Conservation Objectives

1.3.5 The conservation objectives[17] for harbour porpoise within the Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC are:

'*To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters*

In the context of natural change, this will be achieved by ensuring that:

1. *Harbour porpoise is a viable component of the site;*
2. *There is no significant disturbance of the species; and*
3. *The condition of supporting habitats and processes, and the availability of prey is maintained*.'

Assessment of Effects

Underwater Noise Changes

1.3.6 The Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC site is recognised as an area with predicted persistent high densities of harbour porpoise during the winter season (October to March inclusive)[18,19].

1.3.7 The Proposed Works, in particular the use of vessels, plant and equipment to demolish the CW intake are likely to generate underwater noise. There are two types of underwater noise that can be generated:

- impulsive - short duration and with a rapid onset[20] (such as mechanical breaking); and
- continuous - long lasting sounds that are lower intensity and more constant (such as vessel noise) and do not have pulse characteristics.

1.3.8 The use of a long reach excavator equipped with a bucket, shears and hydraulic breaker associated with the dismantling of the CW Intake has the potential to generate impulsive noise. Vessels, including JUBs, tug/multi-cat, safety boats and service barges employed throughout the works are likely to generate continuous noise.

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[17] JNCC, Natural England and NRW. (2019). Harbour porpoise (*Phocoena phocoena*) Special Area of Conservation: Bristol Channel Approaches / Dynesfeydd Môr Hafren Conservation Objectives and Advice on Operations. [Online]. Available at: https://data.jncc.gov.uk/data/505b3bab-a974-41e5-991c-c29ef3e01c0a/BCA-ConsAdvice.pdf (Accessed December 2024)

[18] JNCC. (2015). SAC Selection Assessment: Bristol Channel Approaches / Dynesfeydd Môr Hafren. [Online]. Available at: http://jncc.defra.gov.uk/pdf/BristolChannelApproachesSelectionAssessmentDocument.pdf (Accessed December 2024)

[19] JNCC, Natural England and DAERA. (2020). Guidance for assessing the significance of noise disturbance against Conservation Objectives of harbour porpoise SACs. [Online]. Available at: https://assets.publishing.service.gov.uk/media/5ed7ba3c86650c76ab17fcc5/SACNoiseGuidanceJune2020.pdf (Accessed December 2024)

[20] OSPAR. (2024). Distribution of Reported Impulsive Sounds in the Sea. [Online]. Available at: https://oap.ospar.org/en/ospar-assessments/committee-assessments/human-activities/noise/the-distribution-of-reported-impulsive-sounds-in-sea/ (Accessed December 2024)

1.3.9 To inform the assessment of effects underwater noise modelling has been undertaken within the results presented in an Underwater Noise Assessment – Technical Note (**Appendix 9C** of the **ES**). The underwater noise modelling has considered the above activities and their potential to result in the following effects:

- physical/physiological effects (e.g., mortality, non-recoverable injury, permanent threshold shift (PTS) in hearing, temporary threshold shift (TTS) in hearing, recoverable injury); or
- behavioural responses (e.g., stress, changes in movements, migration, feeding, breeding, displacement, disturbance).

1.3.10 Consideration has been given to the different functional hearing groups for marine mammals that may be present, namely very-high frequency cetaceans (porpoise), high frequency cetaceans (dolphins) and phocid carnivores in water (seals)[21]. Harbour porpoises are considered one of the most sensitive species of marine mammals in relation to underwater noise[22].

1.3.11 The assessment of noise disturbance has considered NRW's position statement[23] and follows the recommendation that the assessment of underwater noise is based on fixed thresholds. These are presented below.

Table 1-9 Marine mammal auditory thresholds[24]

Marine Mammal FHG	Impulsive Noise			Non-impulsive Noise		
	PTS Onset	TTS Onset	Onset of Behavioural Response	PTS Onset	TTS Onset	Onset of Behavioural Response
Very high frequency cetaceans (VHF)	155 dB SEL_{cum}	140 dB SEL_{cum}	160 dB SPL_{rms}	173 dB SEL_{cum}	153 dB SEL_{cum}	120 dB SPL_{rms}
High-frequency cetaceans (HF)	185 dB SEL_{cum}	170 dB SEL_{cum}		198 dB SEL_{cum}	178 dB SEL_{cum}	
Phocid carnivores in water (PCW)	185 dB SEL_{cum}	170 dB SEL_{cum}		201 dB SEL_{cum}	181 dB SEL_{cum}	

SPL_{rms} is referenced in dB re 1µPa, and SEL_{cum} is referenced in dB re 1µPa^{2}s.

[21] Southall *et al*. (2019). Marine Mammal Noise Exposure Criteria : Updated Scientific Recommendations for Residual Hearing Effects. *Aquatic Mammals*, 45(2), 125-232, doi: 10.1578/AM.45.2.2019.125

[22] Tougaard, J., Wright, A.J. and Madsen, P.T. (2015). Cetacean noise criteria revisited in the light of proposed exposure limits for harbour porpoises. *Marine Pollution Bulletin*, Vol. 90, Issues 1-2, pp 196-208

[23] NRW. (2023). NRW's Position on Assessing Behavioural Disturbance of Harbour Porpoise (*Phocoena phocoena*) from underwater noise. [Online]/ Available at: https://naturalresources.wales/media/696755/ps017-nrws-position-on-assessing-behavioural-disturbance-of-harbour-porpoise-phocoena-phocoena-from-underwater-noise-30.pdf (Accessed December 2024)

[24] Southall, B.L., Finneran, J.J., Reichmuth, C., Nachtigall, P.E., Ketten, D.R., Bowles, A.E., Ellison, W.T., Nowacek, D.P. and Tyack, P.L. (2019). Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects. Aquatic Mammals, 45(2), p.125.

1.3.12 Underwater noise modelling has predicted impact ranges associated with noise sources for the Proposed Works. Where specific noise levels were not available from specific sources, proxy source levels were obtained from publicly available information for similar noise sources. The results of the underwater noise modelling have been summarised in the **Table 1-10** below for very high-frequency cetaceans. It should be noted that the impact ranges presented in **Table 1-10** are highly precautionary assuming that marine mammal receptors are stationary for the duration of noise exposure. In reality, marine mammals will be in transit and are likely to move away from noise sources. Predicted impact ranges are also presented visually in **Table 1-10** for very high frequency cetaceans and phocid pinnipeds in water.

Table 1-10 - Predicted Impact Ranges from the Proposed Works for Very-High Frequency Cetaceans

Underwater Noise Effects	Proposed Works Activity Impact Ranges (m)			
	Rock Breaking: DTH Hammer (impulsive)	Rock Breaking: Xcentric Ripper Tool (impulsive)	Tug (non-impulsive)	Jack-Up Barge (non-impulsive)
PTS Onset	736	2	7	2
TTS Onset	5,065	30	96	30
Onset of Behavioural Response	60	252	800	252

1.3.13 Disturbance of harbour porpoise in SACs is defined through the spatial and temporal thresholds outlined in the Conservation Objectives. Noise disturbance within a SAC from a plan/project, individually or in combination is considered significant if it excludes harbour porpoise from more than:

1. 20% of the relevant area of the site in any given day; or
2. An average of 10% of the relevant area of the site over a season.

1.3.14 The Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC (the closest site designated for harbour porpoise) is located approximately 90km north west of the Proposed Works, therefore there is no direct overlap with predicted impact ranges and the designated site itself. It is therefore concluded that the Proposed Works will not result in significant noise disturbance within the Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC, as the predicted ensonified area (taken as the worst case 5,065 m radius within which TTS due to impulsive noise may occur) will not overlap the SAC at all.

1.3.15 Harbour porpoise is a highly mobile species, able to travel 100s of km in a short period of time and form large wide-ranging populations with highly variable numbers of animals spatially and temporally. There is thus the potential for individuals from this designated site to be present outwith the site boundary and within the impact ranges presented above.

1.3.16 Somerset Wildlife Trust undertook marine mammal surveys of a period of five years (2014 - 2018) at several locations along the coastline of North Somerset including Hurlstone Point, Blue Anchor Bay,

Watchet Harbour and Brean Down as well as recording casual sightings from Porlock Weir/Bay, Hurlstone Point, Selworthy Sands, Minehead, Stolford, River Parrett and Brean Down[25]. The data shows that harbour porpoise are most commonly sighted in the months of July, October, November and December with the majority of sightings off Hurlstone Point (approximately 45km from the Proposed Works but were not present in high numbers). There were nine sightings of harbour porpoise in the River Parrett over this period including a sighting of one individual travelling as far up as Bridgwater in 2015. Such low numbers recorded suggests this is not an area of importance for the species. Further, given the small area over which behavioural response is predicted (maximum range of 800 m, arising from noise generated by tugs) and that noise generated would be within a six-hour operational window, there is no predicted significant behavioural effect on the individual porpoises that may range outwith the SAC and approach the area of the Proposed Works.

1.3.17 The proposed AEDL & STPL and CW intake dismantling are scheduled over two separate discrete periods. The AEDL & STPL works are scheduled to commence in Q4 2026 (lasting approximately two months), and the CW intake dismantling is scheduled for 2029.The AEDL & STPL will coincide with the winter season for harbour porpoise in the Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC, therefore taking a precautionary approach, it has been assumed that harbour porpoise are likely to be present in greater numbers compared to the rest of the year, although as described above, these numbers are still low.

1.3.18 With respect to informing the HRA, NRW recommends considering the wider population of porpoises within an MMMU; in this case the Irish and Celtic Seas MMMU. The most recent available population estimate for porpoises in this MMMU, based on SCANS IV survey data[26] is 26,870 individuals (95% limits 17,745-41,536). With this in mind, the number of individuals that might be affected by the proposed works represents an insignificant proportion of this wider population, thus no AEoI are predicted.

Changes to Supporting Habitat and Prey Availability

1.3.19 Harbour porpoise mainly feed on small fish from demersal and pelagic habitats with the most commonly encountered prey types in the North-East Atlantic including the following species[27]:

- gadoids such as Atlantic cod (*Gadus morhua*) and whiting (*Merlangius merlangus*);
- clupeids including sprat (*Sprattus sprattus*) and herring (*Clupea harengus*);
- sandeels (*Ammodytidae*); and

[25] Somerset Wildlife Trust (2020). Somerset Sea Watching – 5 Year Report 2014 – 2018. [Online]. Available at: https://www.somersetwildlife.org/sites/default/files/2020-01/SomersetSeaWatch5YearsV2.pdf (Accessed December 2024)
[26] Gilles, A, Authier, M, Ramirez-Martinez, NC, Araújo, H, Blanchard, A, Carlström, J, Eira, C, Dorémus, G, FernándezMaldonado, C, Geelhoed, SCV, Kyhn, L, Laran, S, Nachtsheim, D, Panigada, S, Pigeault, R, Sequeira, M, Sveegaard, S, Taylor, NL, Owen, K, Saavedra, C, Vázquez-Bonales, JA, Unger, B, Hammond, PS (2023). Estimates of cetacean abundance in European Atlantic waters in summer 2022 from the SCANS-IV aerial and shipboard surveys. Final report published 29 September 2023. 64 pp. https://tinyurl.com/3ynt6swa
[27] ASCOBANS. (2021). The Feeding Ecology of the Harbour Porpoise *Phocoena phocoena* L. in a Changing Environment. [Online]. Available at: https://www.ascobans.org/sites/default/files/document/ascobans_nsg9_inf3.4_feeding-ecology-hp-changing-environment.pdf (Accessed January 2025)

- gobies (*Gobiidae*).

1.3.20 All of these species are found within the Severn Estuary and there is the potential for the Proposed Works to have indirect effects on marine mammals. Potential impacts to qualifying intertidal and subtidal habitat features and fish have been assessed in **Section 1.2** and **Section 1.4** of this report respectively.

1.3.21 Harbour porpoises exploit a range of prey items and forage widely across large distances, as described above. The Underwater Noise Technical Note concluded an impact range of 433m from source in relation to the CW intake dismantling for high-sensitivity hearing fish (such as sprat and herring). The impact range resulting in a behavioural response (i.e. swimming away from the noise source) may be greater than this but is still considered localised in comparison to the wider Seven Estuary. For fish species where the swim bladder is not involved in hearing or that have no swim bladder, the impact ranges are reduced. Given that impacts to prey availability will be highly localised, only a small area will be affected when compared to the available foraging habitat within the Severn Estuary (itself not considered a vital foraging ground for harbour porpoise). In addition, should prey affected by the Proposed Works be temporarily displaced from the ZOIs, marine mammals are capable of following prey when foraging. The fish communities found are characteristic of the fish assemblage within the Seven Estuary. It is therefore reasonable to assume that due to the highly mobile nature of harbour porpoise that there will be similar prey availability in the wider Severn Estuary.

1.3.22 Considering the above against the conservation objectives, there will be no significant disturbance to harbour porpoise and the availability of prey will be maintained. There is no potential for AEoI to the conservation objectives of harbour porpoise of the Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC associated with changes to supporting habitat and prey availability during the Proposed Works alone.

NORD BRETAGNE DH SCI

Summary of Screening Outcomes

1.3.23 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Nord Bretagne DH SCI:

- Bottlenose dolphin (*Tursiops truncatus)*

1.3.24 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all interest features listed above:

- Underwater noise changes; and
- Changes to supporting habitat and prey availability.

Conservation Objectives

1.3.25 There are no stated conservation objectives for this designated site[28], however for the purposes of this assessment it has been assumed the conservation objective is to maintain or restore the qualifying interests to a favourable condition.

Assessment of Effects

1.3.26 There are two distinct ecotypes of bottlenose dolphin in UK waters, a wide ranging offshore type and an inshore coastal type, more likely to be site faithful[29]. The Offshore Channel, Celtic Sea and South West England MU, covers an area spanning the Proposed Works and extends across the English Channel. There is also the Coastal West Channel inshore population which spans the South and South West of England from west of the Isle of Wight to Padstow on the northern coast of Cornwall within 12 nautical miles of the coastline. There is no clear evidence to suggest whether individuals of bottlenose dolphin recorded in the Seven Estuary are from offshore or inshore populations. With bottlenose dolphin at the nearest designated sites (Cardigan Bay / Bae Ceredigion SAC and Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC) screened out of HRA due to high site fidelity within the Irish Sea, the next nearest designated site for bottlenose dolphin to be assessed is the Nord Bretagne DH SCI. Regardless of the population individuals in the Severn Estuary belong to, consideration has been given to this species and potential AEoI on the nearest designated site resulting from the Proposed Works.

Underwater Noise Changes

1.3.27 The Underwater Noise Technical Note considered impacts of the Proposed Works to high frequency cetaceans (which includes bottlenose dolphin). The assessment can be found in **Appendix 9C** of the **ES** with a summary provided in **paragraphs 1.3.6 - 1.3.12**.

1.3.28 The results of the Underwater Noise Technical Note have been summarised in the **Table 1-11** below for high frequency cetaceans. It should be noted that the impact ranges presented in **Table 1-11** are highly precautionary assuming that marine mammal receptors are stationary for the duration of noise exposure, however in reality marine mammals will be in transit and are likely to move away from noise sources.

[28] European Environment Agency. (2024). Nature 2000 – Standard Data Form Nord Bretagne DH SCI. [Online]. Available at: https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=FR2502022 (Accessed January 2025)
[29] JNCC. (2023). Review of Management Unit boundaries for cetaceans in UK waters. [Online]. Available at: https://data.jncc.gov.uk/data/b48b8332-349f-4358-b080-b4506384f4f7/jncc-report-734.pdf (Accessed January 2025)

Table 1-11 - Predicted Impact Ranges from the Proposed Works for high frequency cetaceans

Underwater Noise Effects	Proposed Works Activity Impact Ranges (m)			
	Rock Breaking: DTH Hammer (impulsive)	Rock Breaking: Xcentric Ripper Tool (impulsive)	Tug (non-impulsive)	Jack-Up Barge (non-impulsive)
PTS Onset	39	PTS threshold not met	1	PTS threshold not met
TTS Onset	268	3	10	3
Onset of Behavioural Response	60	252	800	252

1.3.29 The Nord Bretagne DH SCI (the closest site screened in designated for bottlenose dolphin) is located approximately 164km from the Proposed Works, therefore there is no direct overlap with predicted impact ranges and the designated site itself. It is therefore concluded that the Proposed Works will not result in significant noise disturbance within the Nord Bretagne DH SCI, as the predicted ensonified area (taken as the worst case 800m) will not overlap the SCI at all. As bottlenose dolphin are highly mobile and can travel extensive distances, there is the potential that individuals could be present within the impact ranges for underwater noise resulting from the Proposed Works. Despite this and while there are records of bottlenose dolphin within the Severn Estuary, these species are considered infrequent visitors in the estuary with only six individuals being recorded between 2014 – 2018 by Somerset Wildlife Trust[25].

1.3.30 Considering the infrequent nature of bottlenose dolphin using the Severn Estuary and subsequent impact ranges, bottlenose dolphin individuals are unlikely to be significantly affected. In addition, the Proposed Works would generate noise intermittently within a six hour operational window in daytime hours, therefore noise generation would not be constant through the Proposed Works. In the context of the conservation objectives, the Proposed Works will not have AEoI on maintaining bottlenose dolphin in a favourable condition for the Nord Bretagne DH SCI.

Changes to Supporting Habitat and Prey Availability

1.3.31 Bottlenose dolphin have extremely adaptable and opportunistic feeding habits, eating the most abundant fish species as well as invertebrates such as crustaceans and shellfish[30]. Diets are considered to vary between offshore and inshore populations, where offshore populations have a greater proportion of pelagic fish species and squid in their diet and inshore populations have a greater proportion of benthic and demersal fish species[30].

[30] Cetacean Research and Rescue Unit. (2025). Bottlenose dolphin. [Online]. Available at: https://crru.org.uk/education/species/bottlenose-dolphin (Accessed January 2025)

1.3.32 Many of the species that form part of bottlenose dolphin diets can be found within the Severn Estuary, therefore there is the potential for the Proposed Works to have indirect effects on this species. Potential impacts to qualifying intertidal and subtidal habitat features and fish have been assessed in **Section 1.2** and **Section 1.4** of this report respectively.

1.3.33 The Underwater Noise Technical Note concluded an impact range for TTS of 433m from source in relation to the CW intake dismantling for all fish hearing groups. Lower impact ranges predicted for the other fish hearing groups. The impact range resulting in a behavioural response (i.e. swimming away from the noise source) may be greater than this but is still considered localised in comparison to the wider Seven Estuary. Considering the infrequent use of the Severn Estuary by bottlenose dolphin, the high number of fish species in the Severn Estuary, general adaptability and opportunistic feeding nature of this species and the localised impact ranges resulting from the Proposed Works, bottlenose dolphin are unlikely to be significantly affected.

1.3.34 In the context of the conservation objectives, the Proposed Works will not have AEoI on maintaining bottlenose dolphin in a favourable condition for the Nord Bretagne DH SCI.

LUNDY SAC

1.3.35 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Lundy SAC:

- Grey seal (*Halichoerus grypus*)

1.3.36 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all interest features listed above:

- Underwater noise changes; and
- Changes to supporting habitat and prey availability.

Conservation Objectives

1.3.37 The conservation objectives[31] for grey seal within the Lundy SAC are:

"Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats and habitats of qualifying species*
- *The structure and function (including typical species) of qualifying natural habitats*
- *The structure and function of the habitats of qualifying species*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely*
- *The populations of qualifying species, and*
- *The distribution of qualifying species within the site."*

[31] Natural England (2018). European Site Conservation Objectives for Lundy Special Are of Conservation Site Code: UK0013114. [Online]. Available at: https://publications.naturalengland.org.uk/publication/6356698386137088 (Accessed January 2025)

Assessment of Effects

Underwater Noise Changes

1.3.38 The Underwater Noise Technical Note considered impacts of the Proposed Works to pinnipeds (including grey seals). The assessment can be found in **Appendix 9C** of the **ES** with a summary provided in **paragraphs 1.3.6 - 1.3.12**.

1.3.39 The results of the Underwater Noise Technical Note have been summarised in the **Table 1-12** below for phocid carnivores. It should be noted that the impact ranges presented in **Table 1-12** are highly precautionary assuming that marine mammal receptors are stationary for the duration of noise exposure, however in reality marine mammals will be in transit and are likely to move away from noise sources.

Table 1-12 - Predicted Impact Ranges from the Proposed Works for phocid carnivores in water

Underwater Noise Effects	Proposed Works Activity Impact Ranges (m)			
	Rock Breaking: DTH Hammer (impulsive)	Rock Breaking: Xcentric Ripper Tool (impulsive)	Tug (non-impulsive)	Jack-Up Barge (non-impulsive)
PTS Onset	377	2	5	5
TTS Onset	2,592	20	63	20
Onset of Behavioural Response	60	252	800	252

1.3.40 The Lundy SAC (the closest site designated for grey seal) is located approximately 105km west of the Proposed Works, therefore there is no direct overlap with predicted impact ranges and the Lundy SAC itself. It is therefore concluded that the Proposed Works will not result in significant noise disturbance within the Lundy SAC, as the predicted ensonified area (taken as the worst case 2,592 m radius within which TTS due to impulsive noise may occur) will not overlap the SAC.

1.3.41 Grey seal are highly mobile species, able to travel large distances and form large, wide-ranging populations with highly variable numbers of animals spatially and temporally. There is thus the potential for individuals from Lundy SAC to be present outwith the site boundary within the impact ranges presented above. With respect to informing the HRA, NRW recommends considering the wider population of grey seal within the OSPAR Region III interim MMMU. There is limited data available on populations within the Severn Estuary, however estimates suggest the population between 2016 – 2021 was estimated to be 69 (95% CI= 57-92) individuals across the South West

and Wales[32]. Considering the distance of Lundy SAC to the Proposed Works, small number of individuals and lack of major haul out sites, the Severn Estuary is likely only used by grey seal for infrequent foraging. With this in mind and considering the temporary nature of the Proposed Works (both limited to daily six hour operational window and duration overall) and the localised impact ranges from underwater noise (relative to the Severn Estuary), the Proposed Works are unlikely to significantly impact grey seal. In the context of the conservation objectives, there is no potential for AEoI to the conservation objectives (particularly the population and distribution of grey seal) of the Lundy SAC associated with underwater noise during the Proposed Works alone.

Changes to Supporting Habitat and Prey Availability

1.3.42 Grey seal are generalist feeders, foraging mainly on the seabed at depths of up to 100m; however, they can feed at all depths found across the UK continental shelf. Prey sources vary, but typically include sandeels, gadoids (cod, whiting, haddock, ling), and flatfish (plaice, sole, flounder and dab). Sandeels tend to be the predominant species in their diet.

1.3.43 Many of these species are found within the Severn Estuary, therefore there is the potential for the Proposed Works to have indirect effects on grey seal prey availability. Potential impacts to qualifying intertidal and subtidal habitat features and fish have been considered in **Sections 1.2** and **Section 1.4** of this report respectively.

1.3.44 Grey seal are generalist feeders with most foraging occurring within 100km of haul out sites. Lundy Island is the main grey seal breeding population within the Severn Estuary; therefore, the Works Area is at the top end of the typical foraging distance from Lundy Island. The Underwater Noise Technical Note concluded an impact range of 433m from source in relation to the CW intake dismantling for high-sensitivity hearing fish (such as sprat and herring). The impact range resulting in a behavioural response (i.e. swimming away from the noise source) may be greater than this but is still considered localised in comparison to the wider Seven Estuary. For fish species where the swim bladder is not involved in hearing or that have no swim bladder, the impact range is further reduced. Given that impacts to prey availability will be highly localised, only a small area will be affected when compared to the available foraging habitat within the Severn Estuary. The fish communities found are characteristic of the fish assemblage within the Seven Estuary. It is therefore reasonable to assume that there will be similar prey availability in the wider Severn Estuary for grey seal.

1.3.45 Considering the above against the conservation objectives, there will be no significant impacts to the extent, distribution, structure and function or populations of grey seal. There is no potential for AEoI to the conservation objectives of grey seal of the Lundy SAC associated with changes to supporting habitat and prey availability during the Proposed Works alone.

[32] Special Committee on Seals. (2022). Scientific Advice on Matters related to the Management of Seal Populations: 2022. [Online]. Available at: https://www.smru.st-andrews.ac.uk/files/2023/09/SCOS-2022.pdf (Accessed January 2025)

REMAINING SITES DESIGNATED FOR MARINE MAMMALS

Harbour Porpoise

1.3.46 An AA was completed for the closest site designated for harbour porpoise (Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC), which concluded no AEoI as a result of the Proposed Works. On this basis it is concluded that there will be no AEoI on all other sites screened into AA within the Celtic and Irish Seas harbour porpoise MMMU, namely:

- West Wales Marine / Gorllewin Cymru Forol SAC;
- North Channel SAC;
- Rockabill to Dalkey Island SAC;
- North Angelsey Marine / Gogledd Môn Forol SAC;
- Blasket Islands SAC;
- Roaringwater Bay and Islands SAC;
- Nord Bretagne DH SCI;
- Ouessant-Molene SCI;
- Mers Celtiques Talus du golfe de Gascogne SCI;
- Côte de Granit rose-Sept-Iles SCI;
- Tregor Goelo SCI;
- Baie de Morlaix SCI;
- Abers – Côte des légendes SCI; and
- Chaussée de Sein SCI.

Bottlenose Dolphin

1.3.47 An AA was completed for the closest site designated for bottlenose dolphin (Nord Bretagne DH SCI), which concluded no AEoI as a result of the Proposed Works. On this basis it is concluded that there will be no AEoI on all other sites screened into AA within the Offshore Channel, Celtic Sea and South West England bottlenose dolphin MMMU, namely:

- Ouessant-Molene SCI ;
- Mers Celtiques Talus du golfe de Gascogne SCI
- Côte de Granit rose-Sept-Iles SCI ; and
- Tregor Goelo SCI.

Grey Seal

1.3.48 An AA was completed for the closest site designated for grey seal (Lundy SAC), which concluded no AEoI. On this basis it is concluded that there will be no AEoI on all other sites screened into AA within the OSPAR Region III interim MMMU for grey seal, namely:

- Pembrokeshire Marine / Sir Benfro Forol SAC;
- Cardigan Bay / Bae Ceredigion SAC;
- Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC;
- Blasket Islands SAC;
- Roaringwater Bay and Islands SAC;
- Ouessant-Molene SCI;
- Chaussée de Sein SCI;
- North Rona SAC;
- Monach Islands SAC;

- Horn Head and Rineclevan SAC;
- Slieve Tooey/Tormore Island/Loughros Beg Bay SAC;
- Inishkea Islands SAC;
- Duvillaun Islands SAC;
- Inishbofin and Inishsark SAC;
- Slyne Head Islands SAC;
- Roringwater Bay and Islands SAC;
- Isles of Scilly Complex SAC;
- The Maidens SAC; and
- Treshnish Isles SAC.

1.4 APPRAISAL OF POTENTIAL AEOI ALONE FOR FISH

SEVERN ESTUARY / MÔR HAFREN SAC

Summary of Screening Outcomes

1.4.1 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Severn Estuary / Môr Hafren SAC:

- Assemblage of fish species (a sub-feature of the SAC interest feature 1: Estuaries)
- SAC interest feature 6: river lamprey;
- SAC interest feature 7: sea lamprey; and
- SAC interest feature 7: twaite shad.

1.4.2 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all interest features listed above:

- underwater noise changes;
- barrier to species movement; and
- changes to supporting habitat and prey availability.

Conservation Objectives

1.4.3 The conservation objectives for the 'assemblage of fish species' are the same as those prescribed for the 'estuaries' sub feature of the Severn Estuary / Môr Hafren SAC.

1.4.4 The conservation objectives[4] for each qualifying feature within the Severn Estuary / Môr Hafren SAC are:

'*The conservation objective for the river lamprey/sea lamprey/twaite shad feature of the Severn Estuary SAC is to maintain the feature in a favourable condition, as defined below:*

The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met:

i. The migratory passage of both adult and juvenile river lamprey/sea lamprey/twaite shad through the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality;

ii. The size of the river lamprey/sea lamprey/twaite shad population in the Severn Estuary and the rivers which drain into it, is at least maintained as is at a level that is sustainable in the long term

iii. The abundance of prey species forming the river lamprey/sea lamprey/twaite shad food resource within the estuary, is maintained

iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above'.

Assessment of Effects

1.4.5 The Severn Estuary is used by over 100 species of fish for a variety of purposes such as feeding, spawning, nursery areas and as a migration route for diadromous species. Some fish species spend their entire lives within the estuary environment, while other species are more transitory and use the estuary for one or more functions depending on their life stage. A review of fish species within the Severn Estuary identified the following that are dependent on the Seven

1.4.6 Estuary in some form[33]. These species together are considered to form the 'assemblage of fish species' sub feature within the Severn Estuary / Môr Hafren SAC:

- Allis shad;
- Atlantic salmon;
- Bib (pout);
- Big-scale sand smelt
- Black goby;
- Brown / sea trout;
- Common goby;
- Dover sole
- European eel;
- Five-bearded rockling;
- Flounder;
- Herring;
- Nilssons pipefish;
- Northern rockling
- Pollack;
- Poor cod
- River lamprey;
- Sand goby;
- Sea bass;
- Sea lamprey
- Sea snail;
- Sprat;
- Thin-lipped grey mullet;
- Three-spined stickleback;
- Twaite shad;
- Whiting;

1.4.7 This section considers potential AEoI on both the assemblage of fish species sub-feature under SAC interest feature 1: Estuaries and river lamprey, sea lamprey and twaite shad which are features of the SAC in their own right.

Underwater Noise Changes

1.4.8 As discussed in **paragraphs 1.3.7** to **1.3.9**, the Proposed Works have the potential to generate underwater noise. An Underwater Noise Assessment (**Appendix 9C** of the **ES**) has considered underwater noise impacts to fish.

1.4.9 Consideration has been given to different fish hearing groups outlined by Popper et al. 2014[34] comprising:

- fish with no swim bladder that rely on particle motion detection for hearing;

[33] Bird, D. (2008). The biology and conservation of the fish assemblage of the Severn Estuary.
[34] Popper, A. N., Hawkins, A. D., Fay, R. R., Mann, D., Bartol, S., Carlson, T. J., Coombs, S., Ellison W. T., Gentry, R., Halvorsen, M. B., Lokkebor, S., Rogers, P., Southall, B. L., Zeddies, D. G. & Tavolga, W. N. (2014). ASA S3/SC1.4 TR-2014 Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report Prepared by ANSI-Accredited Standards Committee S3/SC1 and Registered with ANSI. Springer.

- fish with swim bladders where the swim bladder is not involved in hearing thus detect primarily particle motion not sound pressure);
- fish where the swim bladder is involved in hearing and are sensitive to sound pressure; and
- eggs and larvae.

1.4.10 The species that are qualifying features of the Severn Estuary SAC have been categorised based on which hearing group the fall within and are shown in **Table 1-13**.

Table 1-13 – Fish Species of the Severn Estuary SAC and Corresponding Hearing Groups

Fish Hearing Group	Severn Estuary SAC Species
No swim bladder	Sea lamprey, river lamprey, European eel, bib (pout), common goby, sand goby, black goby, big-scale sand smelt, sea snail, flounder, dover sole
Swim bladder not involved in hearing	Atlantic salmon, brown / sea trout, whiting, pollack, sea bass, thin-lipped grey mullet, three-spined stickleback,
Swim bladder is involved in hearing	Twaite shad, Allis shad, sprat, herring, Atlantic cod

1.4.11 Underwater noise modelling has predicted impact ranges associated with noise sources for the Proposed Works. Where specific noise levels were not available from specific sources, proxy source levels were obtained from publicly available information for similar noise sources.

1.4.12 The results of the underwater noise modelling for the worst-case impulsive noise have been summarised in the **Table 1-14** below for all fish hearing groups. The results are also presented visually in **Figure 1.3** for mortality, recoverable injury and TTS.

Table 1-14 - Predicted Impact Ranges from Mechanical Breaking Activity for Fish Hearing Groups

Fish Hearing Group	Impairment Response	Impact Range *(m)*
No swim bladder *(particle motion detection)*	*Mortality*	6
	Recoverable Injury	9
	TTS	433
	*Behavioural response**	(**N**) High (**I**) Moderate (**F**) Low
Swim bladder not involved in hearing *(particle motion detection)*	*Mortality*	20
	Recoverable Injury	49
	TTS	433
	*Behavioural response**	(**N**) High

Fish Hearing Group	Impairment Response	Impact Range *(m)*
		(**I**) Moderate (**F**) Low
Swim bladder involved in hearing *(primarily pressure detection)*	*Mortality*	29
	Recoverable Injury	49
	TTS	433
	*Behavioural response**	(**N**) High (**I**) High (**F**) Moderate
Eggs and larvae	*Mortality*	20
	Recoverable Injury	-
	TTS	-
	*Behavioural response**	(**N**) Moderate (**I**) Moderate (**F**) Low

* Where insufficient data exist to make a recommendation for guidelines a subjective approach is adopted in which the relative risk of an effect is placed in order of rank at three distances from the source – near (**N**), intermediate (**I**), and far (**F**). While it would not be appropriate to ascribe distances to effects because of the many variables in making such decisions, "near" might be considered to be in the tens of meters from the source, "intermediate" in the hundreds of meters, and "far" in the thousands of meters.

1.4.13 The results for the remaining activities are presented in **Table 1-15**.

Table 1-15 - Predicted Impact Ranges from Proposed Work Activities for the swim bladder involved in hearing group

Impairment Response	Proposed Work Activity Impact Ranges (m)*		
	Rock Breaking[35]: Xcentric Ripper	Tug	Jack-Up Barge
Recoverable Injury	-	1	-
TTS Impact Range	2	6	2

[35] Rock breaking is taken as a precautionary analogue for the Proposed Works to dismantle the CW Intake Structure.

Impairment Response	Proposed Work Activity Impact Ranges (m)*		
	Rock Breaking[35]: Xcentric Ripper	Tug	Jack-Up Barge
Behavioural response	(**N**) High (**I**) High (**F**) Moderate	(**N**) High (**I**) Moderate (**F**) Low	(**N**) High (**I**) Moderate (**F**) Low

* - Denotes where hearing thresholds were not reached

1.4.14 Physical impacts including mortality and injury are only anticipated for fish with swim bladders involved in hearing and which are sensitive to sound pressure. No such impacts are anticipated for species which lack swim bladders.

1.4.15 The potential impact ranges to species where the swim bladder is involved in hearing arising from impulsive noise are spatially limited to 29m for mortality, 49m for recoverable injury and 433m for TTS. For behavioural responses or disturbance, there is insufficient data to determine impact distances, however based on the approach in the underwater noise assessment, a 'high' risk of behavioural response within the tens to hundreds of metres and a 'moderate' risk in the thousands of metres.

1.4.16 This is considered the worst-case scenario for the Proposed Works. Impact ranges for other activities such as the use of a tug or jack-up barge are even more spatially limited, with a worst-case impact range for recoverable injury being 1m through the use of a tug. Sound levels for non-impulsive rock breaking and jack-up barge do not reach hearing thresholds for the most sensitive fish hearing group. It is important to note that impact ranges from the underwater noise modelling are highly precautionary assuming that fish receptors are stationary for the duration of noise exposure. In reality, fish would move away from the noise source and therefore reduce the real term exposures and likelihood of mortality, recoverable injury and TTS.

1.4.17 The installation of the AEDL and STPL, and dismantling of the CW intake, are scheduled to be undertaken over two separate discrete periods. The AEDL and STPL works are scheduled to commence in Q4 2026 lasting approximately two months and the CW intake dismantling is scheduled for 2029. Not all fish species within the assemblage will be present all year round within the Severn Estuary, however it has been assumed for the purposes of this AA, that most of these species could be present. However, even if individuals do not move away from noise sources, the spatial range of impact is limited and based on highly precautionary impact ranges. Furthermore, activities required for the Proposed Works will be temporary in nature. For example, hydraulic breaking activities and use of JUB and marine vessels are limited to a six-hour operational window during daylight hours. During this time, marine vessels and equipment will not be operating constantly. Considering the temporary nature of the works, limited spatial scale of impact ranges and when considering the relevant conservation objectives for the 'estuaries' assemblage of fish sub-feature, there will be no AEoI to the abundance of the notable estuarine species assemblages.

1.4.18 In the context of the specific conservation objectives for river lamprey, sea lamprey and twaite shad, there will be no AEoI on the size of their populations within the Severn Estuary as a result of underwater noise changes resulting from the Proposed Works.

Barrier to Species Movement

1.4.19 This pressure refers to the physical obstruction of species movements including local movements and regional/global migrations[36]. It includes up-river movements or movements across open waters. **Table 1-16** outlines the known seasonal migration windows for qualifying fish species within the Severn Estuary SAC.

Table 1-16 – Migration Windows for Fish Qualifying Features of the Severn Estuary SAC

Qualifying Species	Migration Window
Sea lamprey	May - July[37][38]
River lamprey	(September-November)[39]
Twaite shad	April - July[40][41]

1.4.20 The installation of the AEDL and STPL is scheduled to occur in Q4 2026 which is unlikely to overlap with the seasonal migration windows for sea lamprey and twaite shad, however, may with river lamprey. Sea lamprey and river lamprey both migrate at night, however the Proposed Works will be limited a 6-hour operational window during the day. Therefore, the Proposed Works will not act as a barrier to species movement for these species and have not been considered further.

1.4.21 The CW intake dismantling are scheduled to occur in 2029, however at the time of writing, no further detail on timings was available. Adopting the precautionary principle and for the purposes of this AA, it has been assumed that the CW intake dismantling works may coincide with the migration window for twaite shad identified in **Table 1-16.**

1.4.22 Underwater noise resulting from the Proposed Works has the potential to influence fish migration. As described above, the results of the Underwater Noise Assessment suggest that hearing specialist species (such as twaite shad and allis shad) may experience mortality impacts at 29m, recoverable injury at 49m, TTS at 433m and a 'high' risk of behavioural response within the tens to

[36] MarLIN. (2025). *MarESA pressures and benchmarks*. [Online]. Available at: https://www.marlin.ac.uk/sensitivity/SNCB-benchmarks#toc_barrier-to-species-movement (Accessed January 2025)
[37] Davies, P., Britton, J. R., Nunn, A. D., Dodd, J. R., Bainger, C., Velterop, R., & Bolland, J. D. (2021). Cumulative impacts of habitat fragmentation and the environmental factors affecting upstream migration in the threatened sea lamprey, *Petromyzon marinus*. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 31(9), 2560–2574. https://doi.org/10.1002/aqc.3625
[38] Natural Resources Wales. (2024). World Fish Migration Day – Sea lamprey. [Online]. Available at: https://naturalresources.wales/about-us/news-and-blogs/blogs/4r4l-world-fish-migration-day-25-may-2024/?lang=en#:~:text=Sea%20lamprey%20are%20anadromous%2C%20meaning,getting%20to%20suitable%20spawning%20grounds. (Accessed January 2025)
[39] Unlocking the Severn. (2021). Focus on Lampreys. [Online]. Available at: https://unlockingthesevern.co.uk/2021/10/25/focus-onlampreys/ (Accessed January 2025)
[40] Maitland, P.S. and Hatton-Ellis, T.W. (2003). *Ecology of the Allis and Twaite Shad*. Conserving Natura 2000 Rivers Ecology Series No. 3. English Nature, Peterborough.
[41] Hillman, R. (2003). *The Distribution, Biology and Ecology of Shad in South-West England*. [Online]. Available at: https://assets.publishing.service.gov.uk/media/5a7c723340f0b62aff6c1b96/sw1-047-tr-e-e.pdf (Accessed December 2024)

hundreds of metres and 'moderate' risk of behavioural response in the thousands of metres. While the Proposed Works have the potential to overlap with the twaite shad migration window, they will be temporary in nature and the predicted impacts from underwater noise are spatially limited and largely contained within the immediate footprint of the Proposed Works. The area affected represents an insignificant proportion of the Severn Estuary and therefore will not impact migration pathways of twaite shad with the majority of the Severn Estuary available for species to migrate. Furthermore, the Proposed Works will be temporary over a few months and activities will not be constant throughout the duration of the Proposed Works.

1.4.23 Considering the above in relation to the conservation objectives for sea lamprey, river lamprey and twaite shad, the migratory passage of fish species through the Severn Estuary will not be obstructed, the population size will be maintained. There will be no AEoI on sea lamprey, river lamprey and twaite shad within the Severn Estuary SAC resulting from a barrier to species movement.

Changes to Supporting Habitat and Prey Availability

1.4.24 The Proposed Works will result in temporary habitat loss and disturbance to intertidal and subtidal habitats which may also have indirect impacts on prey availability for fish. The Advice on Operations[4] for the Severn Estuary identifies the following estuarine habitat communities as supporting habitat for qualifying fish species:

- subtidal sandbanks;
- intertidal mudflats and sandflats;
- Atlantic saltmeadows; and
- reefs of *Sabellaria alveolate*.

1.4.25 The wider fish assemblage comprises of over 100 different species, therefore the key prey species for each species have not been considered specifically. However, recognising the importance of the estuaries feature as supporting habitat, potential AEoI will be considered in the context of the impacts to supporting habitats presented in **Section 1.2**.

1.4.26 The Hinkley Point C Shadow HRA has characterised representative fish species of the assemblage into feeding guilds. This was primarily focussed on particular species associated with impingement effects, however provides a useful data of fish species in the Severn Estuary. This has been reproduced in relation to some of the relevant species in **Table 1-17**.

Table 1-17 – HPB Impingement monitoring fish species and feeding guilds

Species	Feeding Guild*
Allis shad	Z
Atlantic herring	Z
Atlantic salmon	P
Bib (pout)	B
Brown / sea trout	P
Common sea snail	B
Dover sole	B
European eel	P

Species	Feeding Guild*
European flounder	B
European sea bass	P
Five-bearded rockling	B
Poor cod	B
River lamprey	P
Sand goby	B
Sea lamprey	P
Sprat	Z
Thin-lipped grey mullet	D
Twaite shad	Z
Whiting	N/A

* Z = Zooplankton, P = Piscivorous feeding, B = Benthic invertebrate feeding, D = Detritus feeding

1.4.27 Additionally, the Regulation 33 Conservation Advice outlines key prey species for the individual qualifying fish species which is presented in **Table 1-18**.

Table 1-18 – Key Prey Species for Qualifying Fish Species within the Severn Estuary Ramsar Site

Qualifying Species	Key Prey Species
Sea lamprey	European eel, Atlantic cod and haddock
River lamprey	Sea trout, allis shad, twaite shad, herring, sprat, flounder, small gadoids and pout
Twaite shad	Small crustaceans (mysids and copepods), small fish (sprats and anchovies) and fish eggs

1.4.28 **Section 1.2** has considered the potential for AEoI to the above habitats where relevant and concluded there would be no AEoI to qualifying habitats due to the Proposed Works alone. Impacts to habitats (and the prey species they support) within and in proximity to the Works Area are small scale and temporary. The Proposed Works are likely to have a greater impact to fish species that are benthic feeders due to localised impacts to habitats. However, considering the wider availability of similar habitats throughout the Severn Estuary and the multiple key prey species of fish, it is considered that there will be no AEoI to the SAC from impacts to the abundance of prey species forming the principal food resources for the fish assemblage or sea lamprey, river lamprey and twaite shad as a result of the Proposed Works.

SEVERN ESTUARY RAMSAR SITE

Summary of Screening Outcomes

1.4.29 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Severn Estuary Ramsar Site:

- Ramsar Criterion 1: Estuaries – specifically ‘Notable estuarine species assemblages’ including :

- Migratory species:
  - river and sea lamprey, and twaite shad and allis shad;
  - sea trout, salmon and eel;
- Estuarine species:
  - species typically occurring and breeding in estuaries
  - marine species occurring in large numbers in estuaries
- Marine species:
  - predominantly marine species occurring infrequently in the Severn

- Ramsar Criterion 4: 'Assemblage of migratory fish species' defined as:
  - Species which are designated features of the Severn Estuary SAC and for which individual conservation objectives have been written:
    - sea lamprey (*Petromyzon marinus*);
    - river lamprey (*Lampetra fluviatilis*); and
    - twaite shad (*Alosa fallax*).
  - Other migratory species in the assemblage:
    - Atlantic salmon (*Salmo salar*);
    - sea trout (*Salmo trutta*);
    - allis shad (*Alosa alosa*); and
    - European eel (*Anguilla Anguilla*).
- Ramsar Criterion 8: Fish assemblage of the whole estuarine and river system

1.4.30 The potential for LSE to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all interest features listed above:

- Underwater noise changes;
- Barrier to species movement; and
- Changes to supporting habitat and prey availability.

Conservation Objectives

The conservation objectives for the 'notable estuarine species assemblages feature' under Ramsar Criterion 1 and Criterion 8 are the same as those prescribed for the 'estuaries – notable species assemblage' sub feature of the Severn Estuary / Môr Hafren SAC outlined in **paragraph 1.2.6**.

The conservation objectives[11] for 'assemblage of migratory fish species' within the Severn Estuary Ramsar Site are:

'The feature will be considered to be in favourable condition when, subject to natural processes , each of the following conditions are met:

i. the migratory passage of both adults and juveniles of the assemblage of migratory fish species through the Severn Estuary between the Bristol Channel and any of their

spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality;

ii. the size of the populations of the assemblage species in the Severn Estuary and the rivers which drain into it, is at least maintained and is at a level that is sustainable in the long term;

iii. the abundance of prey species forming the principle food resources for the assemblage species within the estuary, is maintained.

iv. toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above.'

Assessment of Effects

Underwater Noise Changes

1.4.31 An assessment of underwater noise impacts to fish is available in **Appendix 9C** of the **ES** and is summarised in the context of qualifying fish features of the Severn Estuary/ Môr Hafren SAC in **paragraphs 1.4.8** to **1.4.18**. It is recognised that the Severn Estuary Ramsar includes qualifying features beyond those presented for the Severn Estuary / Môr Hafren SAC. However, the assessment is considered applicable here, with the underwater noise assessment considering noise impacts across the different fish hearing groups. Considering the temporary nature of the works, limited spatial scale of impact ranges and when considering the conservation objectives, there will be no AEoI to notable estuarine species assemblages or the assemblage of migratory fish species as a result of underwater noise changes from the Proposed Works.

Barrier to Species Movement

1.4.32 **Table 1-19** outlines the known seasonal migration windows for qualifying fish species within the Severn Estuary Ramsar Site. Consideration of sea lamprey, river lamprey and twaite shad has been provided in relation to the Severn Estuary / Môr Hafren SAC and the assessment findings are considered to apply here. These species are therefore not considered further here.

Table 1-19 – Migration Windows for Qualifying Fish Features of the Severn Estuary SAC

Qualifying Species	Migration Window
Atlantic salmon	November - December[42]
Sea trout	April – Autumn
Allis shad	April - June[40] [41].
European eel	February – June (Peak May – June)[43]

[42] Unlocking the Severn. (2025). *Atlantic Salmon*. [Online]. Available at: https://unlockingthesevern.co.uk/our-river/atlantic-salmon/ (Accessed January 2025)

[43] Boardman, R.M., Pinder, A.C., Piper, A.T. et al. Variability in the duration and timing of the estuarine to freshwater transition of critically endangered European eel *Anguilla anguilla*. *Aquat Sci* 86, 18 (2024). https://doi.org/10.1007/s00027-023-01033-y

1.4.33 The CW intake dismantling is scheduled to occur in 2029 which is likely to overlap with the seasonal migration windows for Atlantic salmon. The AEDL and STPL are scheduled to occur in Q4 2026, with a more detailed programme of works to be developed as part of future detailed design. Adopting the precautionary principle and for the purposes of this AA, it has been assumed that the AEDL/STPL works may coincide with key migratory windows for some species identified in **Table 1-19**.

1.4.34 Potential LSE for fish species that have the potential to influence migration concerns underwater noise resulting from the Proposed Works. As described above, the results of the Underwater Noise Assessment suggest that hearing specialist species (such as allis shad) may experience impacts mortality impacts at 29m, recoverable injury at 49m, TTS at 433m and 'high' risk of behavioural response within tens to hundreds of metres and 'medium' behavioural response in the thousands of metres). While the Proposed Works have the potential to overlap with key seasonal migration windows, the predicted impacts from underwater noise are spatially limited and largely contained within the immediate footprint of the Proposed Works. The area affected represents an insignificant proportion of the Severn Estuary and therefore will not impact migration of these species. Furthermore, the Proposed Works will be temporary and undertaken over a few months and activities will not be constant throughout the duration of the Proposed Works.

1.4.35 Considering the above in relation to the conservation objectives for the Severn Estuary Ramsar site, movement and migratory passage of fish species through the Severn Estuary will not be obstructed. There will be no AEoI on notable estuarine fish species assemblages or the assemblage of migratory fish species within the Severn Estuary Ramsar site resulting from a barrier to species movement.

Changes to Supporting Habitat and Prey Availability

1.4.36 **Section 2.2** has considered the potential for AEoI to supporting habitats where relevant and concluded there would be no AEoI to qualifying habitats due to the Proposed Works alone. **Paragraphs 1.4.24** to **1.4.28** consider the potential for AEoI on the wider fish assemblage and sea lamprey, river lamprey and twaite shad in relation to the Severn Estuary / Môr Hafren SAC, therefore these species have not been covered here.

1.4.37 The Advice on Operations[4] for the Severn Estuary Ramsar site outlines key prey species for each qualifying fish species which is presented in **Table 1-18**.

Table 1-20 – Key Prey Species for Qualifying Fish Species within the Severn Estuary Ramsar Site

Qualifying Species	Key Prey Species
Atlantic salmon	Herring, sprat, sand eel, mackerel, gadoids, crustaceans (euphausiid shrimps, prawns, gammarid amphipods and crabs)
Sea trout	Sprat, herring, sandeels, crustaceans (amphipods, gammarids and decapods)
Allis shad	Small crustaceans (mysids and copepods), small fish (sprats and anchovies) and fish eggs
European eel	Benthic crustaceans and small fish

1.4.38 When considering the scale and duration of impacts to habitats within and in proximity to the Works Area and the wider availability of similar habitats and prey species occurring throughout the Severn Estuary, impacts to supporting habitats and prey availability for fish are considered very limited. There will be no AEoI on the abundance of the notable estuarine species assemblages and on the abundance of prey species forming the principal food resources for the assemblage species as a result of the Proposed Works.

REMAINING SITES DESIGNATED FOR FISH

1.4.39 An AA was completed for the closest site designated for Annex II fish species (Severn Estuary Ramsar Site and SAC) which concluded no AEoI. On this basis it is concluded that there will be no AEoI on all other sites screened in to AA for Annex II migratory fish qualifying features including:

- River Usk / Afon Wsyg SAC;
- River Wye / Afon Gwy SAC;
- River Axe SAC;
- River Avon SAC;
- Pembrokeshire Marine / Sir Benfro Forol SAC;
- Cardigan Bay / Bae Ceredigion SAC;
- Plymouth Sound and Estuaries SAC;
- Carmarthen Bay and Estuaries/ Bae Caerfyrddin ac Aberoedd SAC;
- Afon Tywi/ River Tywi SAC;
- River Itchen SAC;
- Afonydd Cleddau / Cleddau River SAC;
- Slaney River Valley SAC;
- Lower River Suir SAC;
- River Barrow and River Nore SAC;
- Blackwater River (Cork/Waterford) SAC; and
- River Boyne and River Blackwater SAC.

1.5 APPRAISAL OF POTENTIAL AEOI ALONE FOR BIRDS

INTRODUCTION

1.5.1 This section considers potential LSE identified during Stage 1: Screening in relation to ornithological features that are qualifying features of designated sites potentially affected by the Proposed Works.

ASSESSMENT OF EFFECTS: SEVERN ESTUARY SPA

Summary of Screening Outcomes

1.5.2 The potential for LSE to result from the Proposed Works acting alone has been identified for the following interest features of the Severn Estuary SPA:

- Dunlin (wintering);
- Shelduck (wintering);
- Redshank (wintering); and

- Waterbird assemblage (wintering/passage)[44].

1.5.3 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all qualifying features listed above:

- Visual disturbance;
- Above water noise; and
- Loss of or alteration to supporting habitat.

Conservation Objectives

1.5.4 The conservation objectives for qualifying features for the Severn Estuary SPA are[45]:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*[46]

1.5.5 Supplementary Advice[47] for the SAC sets out Natural England's and Natural Resources Wales advice as to the conservation objectives for Severn Estuary SPA to ensure favourable condition for each of the interest features. These are set out below:

Dunlin

1.5.6 The interest feature dunlin will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met:

(i) The 5 year peak mean population size for the wintering dunlin population is no less than 41,683 individuals (i.e. the 5 year peak mean between 1988/9 - 1992/3);

(ii) The extent of saltmarsh and associated strandlines is maintained;

(iii) The extent of intertidal mudflats and sandflats is maintained;

(iv) The extent of hard substrate habitats is maintained;

[44] Waterbird assemblage includes: Eurasian wigeon (w), teal (w), mallard (w), shoveler (w), grey plover (w), lapwing (w), whimbrel (p), curlew (w), spotted redshank (w), ringed plover (w/p), herring gull (w), knot (w), black-headed gull (w), black-tailed godwit (w), pochard (w), turnstone (w), tufted duck (w), oystercatcher (w), dark-bellied brent goose (w), light-bellied brent goose (w), little egret (w)

[45] Natural England. (2014). European Site Conservation Objectives for Severn Estuary SAC (UK0013030). [Online]. Available at: https://publications.naturalengland.org.uk/publication/6081105098702848 (Accessed December 2024)

[46] Natural England (2019). European Site Conservation Objectives for Severn Estuary Special Protection Area Site Code: UK9015022

[47] Natural England. (2012). Severn Estuary/ Môr Hafren European Marine Site Regulation 33 Conservation Advice Package. [Online]. Available at: https://publications.naturalengland.org.uk/publication/3184206?category=3212324 (Accessed December 2024)

(v) The extent of vegetation with a sward height of <10 cm is maintained throughout the saltmarsh;

(vi) The abundance and macro-distribution of suitable invertebrates in intertidal mudflats and sandflats is maintained;

(vii) The abundance and macro-distribution of suitable invertebrates in hard substrate habitats is maintained;

(viii) Unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; and

(ix) Aggregations of dunlin at feeding or roosting sites are not subject to significant disturbance.

Redshank

1.5.7 The interest feature redshank will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met:

(i) the 5 year peak mean population size for the wintering redshank population is no less than 2,013 individuals (i.e. the 5 year peak mean between 1988/9 - 1992/3);

(ii) the extent of saltmarsh and associated strandlines is maintained;

(iii) the extent of intertidal mudflats and sandflats is maintained;

(iv) the extent of hard substrate habitats is maintained;

(v) the extent of vegetation with a sward height of <10 cm is maintained throughout the saltmarsh;

(vi) the abundance and macro-distribution of suitable invertebrates in intertidal mudflats and sandflats is maintained;

(vii) the abundance and macro-distribution of suitable invertebrates in hard substrate habitats is maintained;

(viii) unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; and

(ix) aggregations of redshank at feeding or roosting sites are not subject to significant disturbance.

Shelduck

1.5.8 The interest feature shelduck will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met:

(i) the 5 year peak mean population size for the wintering shelduck population is no less than 2,892 individuals (i.e. the 5 year peak mean between 1988/9 - 1992/3);

(ii) the extent of saltmarsh is maintained;

(iii) the extent of intertidal mudflats and sandflats is maintained;

(iv) the extent of hard substrate habitats is maintained;

(v) the abundance and macro-distribution of suitable invertebrates in intertidal mudflats and sandflats is maintained;

(vi) unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; and

(vii) aggregations of shelduck at feeding or roosting sites are not subject to significant disturbance.

Relevant embedded design and mitigation measures

1.5.9 Embedded measures designed to protect birds (and relevant to the qualifying features assessed in this HRA) and which are captured in the EMP include the following:

- A Suitably Qualified Experienced Professional (SQEP) (Ornithologist) will monitor the Proposed Works and ensure that all environmental measures relevant to birds are delivered and ensure compliance with the relevant legislation.
- Noise emissions control: selection of plant, and engineered noise control, where required, to control any noise emissions in accordance with good practice.
- In advance of site works (including preparatory investigations/enabling works), the SQEP will brief the Principal Contractor on the sensitive ecological features that are on/near the Site and the Principal Contractor will ensure all site staff/personnel are aware of the precautionary working practices set out in the EMP.
- Seasonal restrictions of works in the marine environment (July – September) to avoid sensitive period for moulting shelduck.

Effects on Dunlin

Visual disturbance

1.5.10 Dunlin are known to be a species that is relatively insensitive to visual disturbance and can habituate to works (Burton et. al, 2002[48]; Cutts, Hemingway and Spencer (2013)). In the context of the Proposed Works in the marine environment, activities which may cause visual disturbance include the works to install the AEDL and STPL in the existing CW Outfall Channel and the dismantling of the CW Intake Structure. In the context of the AEDL / STPL installation, visual disturbance may occur due to the presence and movement of plant and personnel associated with the JUB, providing a working platform at single, fixed location for up to two months during the overwintering period (Q4 2026). During the dismantling of the CW Intake Structure, in 2029, two JUBs will be on site for up to four months. The presence of the JUBs and operational excavator and crane, in addition to the transit of limited supporting vessel between the Works Area and the relevant port location (such as Avonmouth) may cause visual disturbance to dunlin within the Works Area. However, Cutts, Hemingway and Spencer (2013) state that dunlin can be approached as close as 50-90m before flushing and are concluded to be very tolerant of moderate and high-level visual disturbance. Furthermore, it is considered by Cutts, Hemingway and Spencer (2013), that only dunlin within 75m should be considered when commencing works.

1.5.11 Low numbers of dunlin (peak count of 56) were recorded during HPC 2016/17 and peak count of 4 were recorded during HPB intertidal surveys in 2019/20. There were no records for the species

[48] Burton, N.H.K., Armitage, M.J.S., Musgrove, A.J. & Rehfisch, M.M. 2002a. Impacts of man-made landscape features on numbers of estuarine waterbirds at low tide. Environ. Manage. 30: 857–864.

during 2017/18, 2018/19 or 2019/2020 in HPC surveys. However, there was a peak count of 420 in the 2020/21 surveys, (although dunlin were again absent in 2021/22), a peak of 68 in 2022/23 and a peak of 95 in 2023/24. Dunlin were not recorded utilising the high tide roost at Hinkley Point although 150 - 200 were recorded as using the roost at nearby Stolford (Woodward et al. 2016).

1.5.12 It is important to note that the Proposed Works will take place in an area subject to continual activity from the Hinkley Point Complex (HPC construction, HPB defueling and HPA decommissioning). While the scale and duration of the Proposed Works in the marine environment are considered to be limited. On no occasions did any dunlin peak counts exceed one percent of the GB overwintering population threshold or indeed one percent of the cited SPA population. The peak count in 2020/21 did however approach one percent (0.94%) of the SPA population.

1.5.13 Considering, the low level of usage of the Works Area by dunlin, their tolerance to visual disturbance and embedded measures, there is considered to be no potential for an AEoI of the SPA in regard to this qualifying feature.

Above water noise

1.5.14 Dunlin are not known to be highly sensitive to noise stimuli and Cutts, Hemingway and Spencer (2013) consider that a level of 72dB is acceptable for this species at the bird (with caution applied above 60dB). This translates to 102 – 107dB at source, with caution applied above 92dB. Baseline noise predictions are detailed in **Chapter 15: Noise and Vibration** of the **Environmental Statement**, taking account of marine and onshore works, Receptor location 6 is the closest location to habitat potentially utilised by dunlin. At Receptor location 6 noise outputs are considered not likely to exceed 71dB.

1.5.15 Considering this and the low level is usage of the Works Area by dunlin, in addition to their low sensitivity to noise disturbance, there is considered to be no potential for an AEOI of the SPA in regard to this qualifying feature.

Loss of or alteration to supporting habitat

1.5.16 No loss or alteration of intertidal or functionally linked habitat to the SPA will occur as part of the Proposed Works. There is therefore considered to be no potential for an AEoI on the SPA in regard to dunlin.

Effects on Redshank

Visual disturbance

1.5.17 Redshank are known to be a species that is relatively insensitive to visual disturbance and can habituate to works. In the context of the Proposed Works in the marine environment, activities which may cause visual disturbance include the works to install the AEDL and STPL in the existing CW Outfall Channel and the dismantling of the CW Intake Structure. In the context of the AEDL / STPL installation, visual disturbance may occur due to the presence and movement of plant and personnel associated with the JUB, providing a working platform at single, fixed location for up to two months during the overwintering period (Q4 2026). During the dismantling of the CW Intake Structure, in 2029, two JUBs will be on site for up to 4 months. The presence of the JUBs and operational excavator and crane, in addition to the transit of limited supporting vessel between the Works Area and the relevant port location (such as Avonmouth) may cause visual disturbance to redshank within the Works Area. However, Cutts, Hemingway and Spencer (2013) state that redshank can allow approach as close as 70-115m before flushing and are concluded to be very tolerant of moderate

and high-level visual disturbance. Furthermore, it is considered by Cutts, Hemingway and Spencer (2013), that redshank only closer than 50m (plant) and 75m (workers) should be considered when commencing works.

1.5.18 Redshank were absent in the HPC Intertidal Birds Survey Area in all surveys between 2016 and 2019. Small numbers were recorded thereafter, with peak counts of three birds in each of 2019/2020, 2020/2021 and 2021/2022. A peak count of nine birds was recorded in 2022/2023; no peak counts of redshank approached one percent of the SPA cited population. A small number of redshank were recorded as using the high tide roost at Hinkley Point (20 birds) with similar numbers at nearby Stolford (Woodward et al., 2016). It is important to note that the Proposed Works will take place in an area subject to continual activity from the Hinkley Point Complex (HPC construction, HPB defueling and HPA decommissioning). While the scale and duration of the Proposed Works in the marine environment are considered to be limited. Considering, the low level of usage of the Works Area by redshank, their tolerance to visual disturbance and embedded measures, there is considered to be no potential for an AEoI of the SPA in regard to this qualifying feature.

Above water noise

1.5.19 In contrast to redshanks known response to visual disturbance, they are considered highly sensitive to noise disturbance (Cutts, Hemingway and Spencer, 2013). It is considered that noise outputs of up to 70dB are acceptable, with a source noise threshold of 100-105dB.

1.5.20 Baseline noise predictions are detailed in **Chapter 15: Noise and Vibration** of the **Environmental Statement** where noise outputs are considered not to exceed 71dB at Receptor location 6, where taking account of onshore and marine works, this is the closest location assessed to habitat potentially utilised by redshank. Despite redshanks sensitivity to noise, there is a consistent low level of usage of the Works Area by the species, while noise predictions are unlikely to exceed published thresholds. Therefore, there is considered to be no potential for an AEoI of the SPA in regard to this qualifying feature.

Loss of or alteration to supporting habitat.

1.5.21 No loss or alteration intertidal or functionally linked habitat to the SPA will occur as part of the Proposed Works. There is considered to be no potential for an AEoI of the SPA in regard to redshank.

Effects on Shelduck

Visual disturbance

1.5.22 Shelduck are considered to be a wary species and highly sensitive to visual disturbance and have been noted to not approach construction works within 300m while being affected by disturbance at up to 500m (Cutts, Hemingway and Spencer, 2013).

1.5.23 Distribution surveys have showed that the spread of shelduck around high tide has remained broadly consistent across survey years (2016 – 2023), with birds primarily concentrated around Fenning Island, Stert Island and Stert Point (the ‘core roost areas’).Smaller numbers of shelduck were found to use the high tide roost at Hinkley Point (Woodward et al., 2016). Disturbance surveys have identified that the core roost area continues to be the most sensitive area for moulting shelduck (when most birds that roost there are flightless). In light of the distance between the Proposed Works Area and these core roost areas (~5.5km at the nearest point), no impact pathways are considered evident.

1.5.24 However, monitoring has also identified a smaller but still significant secondary concentration off Hinkley Point where counts have exceeded the 1% SPA threshold in grid squares within 500m of the Proposed Works Area (between 2016 – 2019; no focal disturbance/distribution surveys were undertaken after this point), in addition to population data recorded between 2016 and 2023. Over the survey periods referenced, recorded peak counts were attributed to birds aggregating on the water over two hours either side of the high tide period. These rafting birds did not tend to remain in the same areas for long periods (i.e. they do not use energy to remain in a stationary position against the tide) and were not recorded foraging. Early monitoring surveys documented within the HPC Report to Inform Habitats Regulations Assessment (RIHRA) in July and August 2011 (the core moult period), demonstrated that the majority of shelduck activity recorded was generally 500-800 m from the mean low water mark (MLW). The majority of flocks numbered less than 100 individuals. It was also noted that shelduck could swim against the tide for considerable distances (i.e. up to 500 m), which suggests that moulting (flightless) shelduck retain the ability to position themselves within the tidal waters of the estuary.

1.5.25 It is relevant to note that the Proposed Works in the marine environment would be undertaken outside the sensitive moulting period (July – September), therefore avoiding the period when aggregations of 'flightless' rafting birds have been recorded. It is also of relevance that birds on open water are less likely to be disturbed by activities on land than they would be from water-based activities, particularly in this instance where large expanses of open water are available (Goodship and Furness, 2022[49]).

1.5.26 Collectively, the low level of visual disturbance effects (in light of the fact that most birds have been recorded 500 – 800m from MLW) associated with onshore works is likely to be influenced by the presence locally of alternative roosting areas within the existing home ranges. Where alternative areas are limited, the significance of visual disturbance effects is likely to be increased. However, given the extensive area of open water utilised by roosting birds at high tide, this is unlikely to be the case.

1.5.27 If rafting shelduck were present within 500m of the onshore decommissioning works (and temporarily disturbed by the activities), they would be able to move away from the areas of disturbance with little energetic expenditure. Moreover, an extensive area of open water would be available which birds displaced from any area of disturbance could relocate to. Given that birds would not have to move very far to avoid further disturbance it is unlikely that their energy expenditure would be of sufficient significance to have a detrimental effect on their longer-term survival.

1.5.28 Given the temporary nature of the Proposed Works, the avoidance of potentially disturbing works during sensitive July to September period, and with the ability for dispersal to alternative roosting locations on open water, any low-level visual disturbance effects would not result in any sustained

[49] Goodship, N.M. and Furness, R.W. (MacArthur Green) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

loss of resource or contribute to significant energy expenditure for this species and therefore there is no potential for an AEOI of the SPA in regard to shelduck.

Above water noise

1.5.29 Shelduck are moderately sensitive to noise disturbance, with effects considered likely from 72 dB upward and works noise required to create a high level of disturbance at 150m range would be 115-120dB at source (increasing to 125-130dB at 500m) (Cutts, Hemingway and Spencer 2013).

1.5.30 The key activities during the decommissioning works that could cause disturbance to shelduck feeding or roosting on the intertidal habitat/open water are the demolition of the Intake Structure, installation of the new AEDL and STPL.

1.5.31 Baseline noise predictions are detailed in **Chapter 15: Noise and Vibration** of the **Environmental Statement** where noise outputs are considered not to exceed 71dB at Receptor location 6, where taking account of onshore and marine works, which is the closest location assessed to habitat potentially utilised by shelduck.

1.5.32 If rafting shelduck were present within 500m of the onshore decommissioning works (in the unlikely event that shelduck are disturbed based on the noise predictions highlighted above), they would be able to move away from the areas of disturbance with little energetic expenditure. Moreover, an extensive area of open water would be available which birds displaced from any area of disturbance could relocate to. Given that birds would not have to move very far to avoid further disturbance it is unlikely that their energy expenditure would be of sufficient significance to have a detrimental effect on their longer-term survival.

1.5.33 Given the temporary nature of the Proposed Works, the avoidance of potentially disturbing works during the sensitive July to September period, and with the ability for dispersal to alternative roosting locations on open water, noise disturbance effects would not result in any sustained loss of resource or contribute to significant energy expenditure for this species and therefore there is no potential for an AEOI of the SPA in regard to shelduck.

Loss of or alteration to supporting habitat

1.5.34 No loss or alteration intertidal or functionally linked habitat to the SPA will occur as part of the Project. There is considered to be no potential for an AEOI of the SPA in regard to shelduck.

Effects on Waterbird Assemblage

Visual disturbance

1.5.35 The waterbird assemblage qualifying feature of the Severn Estuary SPA includes a variety of species with differing sensitivities to visual disturbance. It is however noted that several species (whimbrel, knot, black-tailed godwit, pochard, tufted duck) included in the assemblage were unrecorded throughout the extensive survey coverage. Shoveler was also not recorded during HPB Baseline Surveys (2019/2020), HPC intertidal surveys (2020 – 2023) or surveys to inform HPB LMARs (2020 – 2021 and 2023). This species was recorded by LMAR monitoring, in a single year (2021/22), indicating only intermittent and irregular presence of this species along the coast at HPB.

1.5.36 Dark-bellied and light-bellied brent Geese (*Branta bernicla bernicla* and *Branta bernicla hrota* respectively) are highly sensitive to moderate and high level disturbance and both subspecies occurred in relatively low numbers during surveys. Dark-bellied brent goose peaked at 114 individuals during the HPB surveys in 2019/2020, with 210 reported in the HPB Land Management

Review Annual Review for 2020. At HPC numbers were substantially lower with a peak count of just eight between 2016 and 2020, no records between 2020/2021 and 2022/2023. A single light-bellied brent goose was seen in the HPB surveys of 2019/2020 although this subspecies was more prolific in the HPC surveys with the highest counts being 51 in 2020/2021 and 76 in 2021/2022. These counts exceed 1% of the GB population, with the threshold being 34.

1.5.37 Given the temporary nature of the Proposed Works, and with the ability for dispersal to alternative location, any low-level visual disturbance effects on brent geese would not result in any sustained loss of resource or contribute to significant energy expenditure. Therefore, despite the two counts that surpassed 1% of the GB population of light-bellied brent goose at HPC, there is considered to be no potential for an AEOI of the SPA. This conclusion applies to all other assemblage feature components, which either have lower sensitivity to disturbance than brent goose and/or were recorded in similarly low numbers during survey.

Above water noise

1.5.38 Brent geese are again considered to be the most sensitive of the species listed on the SPA assemblage criterion. At 100m range works noise required to create high level disturbance would be 110-115 dB at source increasing the 120-125dB at 300m (Cutts, Hemingway and Spencer 2013).

1.5.39 Baseline noise predictions are detailed in **Chapter 15: Noise and Vibration** of the **Environmental Statement** where noise outputs are considered not to exceed 71dB at Receptor location 6 which is the closest location assessed to habitat potentially utilised by the waterbird assemblage.

1.5.40 Given the temporary nature of the Proposed Works, and with the ability for dispersal to alternative locations, noise disturbance effects would not result in any sustained loss of resource or contribute to significant energy expenditure for this species and therefore there is no potential for an AEOI of the SPA in regard to brent geese. This conclusion applies to all other assemblage feature components, which either have lower sensitivity to disturbance than brent goose and/or were recorded in similarly low numbers during survey.

Loss of or alteration to supporting habitat

1.5.41 No loss or alteration intertidal or functionally linked habitat to the SPA will occur as part of the Project. There is considered to be no potential for an AEOI of the SPA in regard to the waterbird assemblage.

ASSESSMENT OF EFFECTS: SEVERN ESTUARY RAMSAR

Summary of screening outcomes

1.5.42 Additional qualifying features to those included for the Severn Estuary SPA for which a potential LSE is concluded at screening are the following:

- Ringed plover;
- Pintail; and
- Teal.

1.5.43 The potential for LSEs to result from the Proposed Works acting alone includes the following identified effect pathways, which apply to all qualifying features listed above:

- Visual disturbance;
- Above water noise; and

- Loss of or alteration to supporting habitat.

Conservation Objectives

1.5.44 The conservation objectives for the Ramsar site are considered to be the same as those presented above for the Severn Estuary SPA.

Relevant embedded design and mitigation measures

1.5.45 Embedded measures design to protect birds (and relevant to the qualifying features assessed in this HRA) and to be captured in the EMP include the following:

- A SQEP (Ornithologist) will monitor the Proposed Works and ensure that all environmental measures relevant to birds are delivered and ensure compliance with the relevant legislation.
- Noise emissions control: selection of plant, and engineered noise control, where required, to control any noise emissions in accordance with good practice.
- In advance of site works (including preparatory investigations/enabling works), the SQEP will brief the Principal Contractor on the sensitive ecological features that are on/near the Site and the Principal Contractor will ensure all site staff/personnel are aware of the precautionary working practices set out in the EMP.

Effects on ringed plover

Visual disturbance

1.5.46 Ringed plover are considered to be a highly tolerant species, allowing close approach to 30-50m before flushing (Cutts, Hemingway and Spencer 2013). In the context of the Proposed Works in the marine environment, activities which may cause visual disturbance including the works to install the AEDL and STPL in the existing CW Outfall Channel and the dismantling of the CW Intake Structure. In the context of the AEDL / STPL installation, visual disturbance may occur due to the presence and movement of plant and personnel associated with the JUB, providing a working platform at single, fixed location for up to two months during the overwintering period (Q4 2026). During the dismantling of the CW Intake Structure, in 2029, two JUBs will be on site for up to four months. The presence of the JUBs and operational excavator and crane, in addition to the transit of limited supporting vessel between the Works Area and the relevant port location (such as Avonmouth) may cause visual disturbance to ringed plover within the Works Area. Low numbers of ringed plover were recorded during the survey coverage (max mean peak count of between 1 and 26) were recorded during intertidal surveys between 2016 – 2023. The peak count of 26 does however represent 3.5% of the Ramsar sited population. Similar numbers of ringed plover (20-30 individuals) were recorded using the high tide roost Hinkley Point by Woodward et al. (2016).

1.5.47 It is considered that there is a low level of usage of the Works Area by ringed plover, with the peak count of 26 an outlier, and all other annual peak counts being under 10 birds. Further considering ringed plovers tolerance to visual disturbance and the application of embedded measures and the temporary nature of works, it is unlikely to result in any sustained loss of resource. There is therefore considered to be no potential for an AEoI of the Ramsar site in regard to this qualifying feature.

Above water noise

1.5.48 Ringed plover are not considered to be sensitive to noise disturbance and can habituate rapidly. A noise level of 75 dB is considered acceptable at the bird (with caution above 60dB); they will forage

close to plant works and a source noise threshold of 107-122dB is suggested by Cutts, Hemingway and Spencer (2013).

1.5.49 Baseline noise predictions are detailed in **Chapter 15: Noise and Vibration** of the **Environmental Statement** where noise outputs are considered not to exceed 71dB at Receptor location 6 which is the closest location assessed to habitat potentially utilised by ringed plover.

1.5.50 Considering the low level of usage of the Works Area by ringed plover, their tolerance of noise disturbance and the application of embedded measures and the temporary nature of works, it is unlikely to result in any sustained loss of resource. There is therefore considered to be no potential for an AEOI of the Ramsar site in regard to this qualifying feature.

Loss of or alteration to supporting habitat

1.5.51 No loss or alteration intertidal or functionally linked habitat to the Ramsar site will occur as part of the Project. There is considered to be no potential for an AEOI of the Ramsar site in regard to ringed plover.

Effects on pintail

Visual disturbance

1.5.52 Pintail are not included in Cutts, Hemingway and Spencer (2013), however Goodship and Furness (2022) discuss that pintails are known to tolerate some human presence. For example, at a study site in Iberia, this species feeds in rice paddies at night and commutes to an adjacent reservoir to roost during the day (Parejo *et al*., 2019). In comparison to other species of dabbling duck, pintail in some situations may have a higher tolerance of human disturbance; a study in a national park in south-eastern Virginia, which has a high level of human recreational disturbance, indicated that out of seven species of dabbling ducks pintail was the least sensitive to disturbance (Pease *et al*., 2005).

1.5.53 Pintail numbers have fluctuated over the past 7 years of survey relevant to the Project, with generally low numbers recorded annually during intertidal surveys: HPB Intertidal surveys 2017/18 - peak count 12; HPB Intertidal surveys 2018/2019 - peak count 44, HPC Intertidal surveys 2019/2020 – peak count (all sectors) 16; and HPC Intertidal surveys 2020/2021 - peak count (all sectors) – 60. HPC Intertidal surveys 2021/22- peak count (all sectors) of 96, HPC Intertidal surveys 2022/23- peak count (all sectors) of 54.

1.5.54 Two instances of larger peak counts were recorded during HPB Intertidal surveys 2016/2017 - Count sector 5 peak count 210; and HPB Intertidal surveys 2019/20 - 270 birds in November 2019 (recorded within Sector 2). Both of these counts exceeded the one percent GB overwintering population threshold (200) and also represent 27.8 and 35.7 % respectively of the cited Ramsar population. However, records were of incidental single observations rather than regular or sustained periods of utilisation. Over the period, numbers of birds utilising the Study Areas have been found to fluctuate during different tidal phases and across the survey period. Indeed, 60-120 pintail were recorded as part of high tide roost identification at Hinkley Point (Woodward et al., 2016).

1.5.55 It is important to note that the Proposed Works will take place in an area subject to continual activity from the Hinkley Point Complex (HPC construction, HPB defueling and HPA decommissioning).

1.5.56 Given the temporary nature of the Proposed Works, the ability for dispersal to alternative locations on open water, any low-level visual disturbance effects would not result in any sustained loss of

resource or contribute to significant energy expenditure for this species. Therefore, there is no potential for an AEOI of the Ramsar site in regard to pintail.

Above water noise

1.5.57 Although pintail are not included in Cutts, Hemingway and Spencer (2013), they are considered by Goodship and Furness (2022) to be at least moderately tolerant of disturbance.

1.5.58 Baseline noise predictions are detailed in **Chapter 15: Noise and Vibration** of the **Environmental Statement** where noise outputs are considered not to exceed 71dB at Receptor location 6 which is the closest location assessed to habitat potentially utilised by pintail.

1.5.59 Considering the low-moderate level of usage of the Works Area by pintail, their tolerance of noise disturbance and the application of embedded measures and the temporary nature of works, it is unlikely to result in any sustained loss of resource. There is therefore considered to be no potential for an AEOI of the Ramsar site in regard to this qualifying feature.

Loss of or alteration to supporting habitat

1.5.60 No loss or alteration intertidal or functionally linked habitat to the Ramsar site will occur as part of the Project. There is considered to be no potential for an AEOI of the Ramsar site in regard to pintail.

Effects on teal

Visual disturbance

1.5.61 Teal are not included in Cutts, Hemingway and Spencer (2013) or Goodship and Furness (2022). Teal is however considered likely to react to disturbance in a similar way to closely related species like mallard and pintail and are therefore considered to be tolerant of human pressure to some degree. Cutts, Hemingway and Spencer (2013) consider mallard to be tolerant of moderate or high levels of human disturbance but state that consideration should be given to disturbance activities within 200m. The only notable aggregation of teal recorded in all relevant surveys refers to the cumulative ‘annual counts’ over 6 survey visits to support HPB LMARs between October and March, which recorded 52 teal on the ‘East Pond’ in 2020/21, 178 in 2021/22 and 298 in 2022/2023. The East Pond is approximately 100 m east of the Sewage Treatment Plant, and more than 200 m south of the next closest area of dismantling within the Works Area.

1.5.62 It is important to note that the Proposed Works will take place in an area subject to continual activity from the Hinkley Point Complex (HPC construction, HPB defueling and HPA decommissioning).

1.5.63 Therefore, the ability for dispersal to alternative locations (habitat SPA is immediately adjacent to the East Pond), any low-level visual disturbance effects would not result in any sustained loss of resource or contribute to significant energy expenditure for this species. Therefore, there is no potential for an AEOI of the Ramsar site in regard to teal.

Above water noise

1.5.64 Although teal are not included in Cutts, Hemingway and Spencer (2013), or Goodship and Furness (2022) they are considered to be at least moderately tolerant of disturbance based on information available for related species.

1.5.65 Baseline noise predictions are detailed in **Chapter 15: Noise and Vibration** of the **Environmental Statement** where noise outputs are considered not to exceed 66dB at Receptor location 7 which is the closest location assessed to habitat utilised by teal.

1.5.66 Considering the low level of usage of the Works Area by teal which is almost entirely limited to the 'East Pond', their tolerance of noise disturbance and the application of embedded measures, it is unlikely to result in any sustained loss of resource. There is therefore considered to be no potential for an AEOI of the Ramsar site in regard to this qualifying feature.

Loss of or alteration to supporting habitat

1.5.67 No loss or alteration intertidal or functionally linked habitat to the Ramsar site will occur as part of the Project. There is considered to be no potential for an AEOI of the Ramsar site in regard to teal.

2 APPRAISAL OF POTENTIAL AEOI (PROPOSED WORKS IN COMBINATION)

2.1 INTRODUCTION

2.1.1 Where the potential for LSE on a relevant site has been identified, there is a requirement to consider whether they will adversely affect the integrity of the site in combination with relevant plans and projects. During the Stage 1 Screening, the following plans and projects were identified with the potential to have LSE in-combination with the Proposed Works:

- Hinkley Point C New Nuclear Power Station Granted DCO and Non-Material Change; and
- Bridgwater Tidal Barrier.

2.1.2 No AEoI were identified from the Proposed Works alone, however it is recognised that effects in-combination with other plans and projects could have the potential to result in AEoI to the designates sites identified. The following sections present the in-combination assessment of the identified projects above.

2.2 HINKLEY POINT C

2.2.1 Due to the proximity of Hinkley Point C (HPC) to the Proposed Works and their location within the Severn Estuary / Môr Hafren SAC, SPA and Ramsar site, a consideration of potential AEoI in-combination is appropriate. This in-combination assessment considers both the ongoing construction and future operation of Hinkley Point C and the proposed DCO non-material changes currently being developed.

2.2.2 This in-combination assessment has been informed by relevant information where available including:

- HPC Environmental Statement (October 2011);
- HPC Project Report to Inform Habitats Regulations Assessment (October 2011);
- HPC Material Change Application - Preliminary Environmental Information Report (December 2023); and
- HPC Material Change Application - Shadow Habitats Regulations Assessment (December 2023).

2.2.3 It is acknowledged that HPC has been subject to various variations and amendments since its original submission, therefore the findings of the original ES and HRA may have changed. Further, it is also acknowledged that the HPC Material Change Applications are in progress and therefore the conclusions of these could change. However, this was the most up-to-date information available on the DCO Material Change at the time of writing.

The Proposed Works have the potential to overlap with the following:

- Dismantling of the temporary jetty required for the construction of HPC (herein the ‘HPC temporary construction jetty’);
- Operation of HPC.

Temporary Construction Jetty

2.2.4 The temporary construction jetty is approximately 1.5km west of the CW Intake Structure for HPB and is anticipated to be dismantled towards the end of the decade. The original marine licence and HRA (L/2012/00244/5)[50] indicates that the operational use of this jetty would cease on 31st Dec 2025; the jetty would then be decommissioned as soon as reasonably practicable. The exact timings of the dismantling works are unknown, however there is a possibility that it could overlap with the works to dismantle the CW intake and the installation of the AEDL and STPL.

2.2.5 There are limited details in relation to the activities required for the dismantling of the HPC temporary construction jetty, however decommissioning is estimated to take 12 months, plus a further 24 months for site reinstatement. The Environmental Statement suggests it will involve vehicle access from the landward side and marine operations (including vessels). It also states that it is not feasible to remove the steel tubular piles supporting the HPC temporary construction jetty and therefore they are likely to be cut at rock head / seabed level. In the intertidal area, the remaining section of piles and internal void will be in-filled with grout and where holes/restoration is visible, a natural stone slab will be placed into the concrete plug.

2.2.6 The Habitats Regulations Assessment completed by the MMO[51] for the temporary construction jetty considered the potential for likely significant effects during the decommissioning stage for the following designated sites and qualifying features:

- Severn Estuary SAC:
  - Estuaries;
  - Reefs; and
  - Migratory fish species.
- Severn Estuary SPA:
  - Regularly occurring migratory bird species and assemblage of waterfowl.
- Severn Estuary Ramsar:
  - Estuaries;
  - Assemblage of migratory fish species; and
  - Internationally important populations of waterfowl.
- Exmoor and Quantocks Oakwoods SAC:
  - Barbastelles.

[50] HPC applied to the MMO for a Harbour Empowerment Order (HEO) and the licences required to enable construction of a temporary jetty to enable the delivery by sea of bulk materials, such as aggregate and cement, to be used in the construction of HPC, prior to an application to the Secretary of State for development consent for HPC. The DCO included the same temporary jetty development consented by the MMO as part of the associated development for HPC. It should be noted that the MMO's decision on the jetty was independent of the DCO application.
[51] MMO. (2012). Hinkley Point C – Jetty Development – Record of Habitats Regulations Assessment.

2.2.7 The MMO determined that, with certain conditions, such as the implementation of the same mitigation requirements implemented for construction for example the non-breeding bird monitoring and mitigation scheme, there would be no adverse effect on the integrity of a European or Ramsar site from the jetty development either alone or in-combination with other plans and projects. The Department of Energy and Climate Change also came to the same conclusions for the wider HPC development consent order application and associated development[52].

2.2.8 Considering the conclusions of the MMO's HRA, the distance of the temporary construction jetty from the Proposed Works and the temporary and highly localised nature of impacts from the Proposed Works in isolation (as described in Section 1.2 and Section 1.4 of this RIAA), no AEoI are anticipated (i.e. no increase in potential AEoI beyond that of HPC in isolation).

Operation of HPC (including the DCO Material Change)

2.2.9 HPC is scheduled to begin commercial operation around the end of the decade, with EDF confirming that Unit 1 may be operational in 2029, 2030 or 2031[53]. Unit 2 is anticipated to commence operation closely following Unit 1. Based on the uncertainty surrounding the timescales on the operation of HPC, there is the potential for it to overlap with the CW intake dismantling for HPB. There will be no overlap with the AEDL and STPL works, therefore this aspect of the Proposed Works has not been considered further. As there is a chance that the HPC operation will overlap with CW intake dismantling in 2029, the potential for in-combination effects has been considered below.

2.2.10 The abstraction of cooling water for use at HPC is the primary pathway that has the potential to result in in-combination effects with the Proposed Works. Abstraction of cooling water has the potential to result in impingement and entrainment of migratory fish and species comprises of the estuarine fish assemblage of the Severn Estuary. HPC includes a fish return and recovery system which aims to reduce this potential impact to fish species.

2.2.11 The proposals within the latest DCO material change for HPC include the following:

- removal of the requirement to install an acoustic fish deterrent (AFD) system (using sound to deter certain types of fish from the cooling water system intake heads);
- amendment to the Interim Spent Fuel Store (ISFS) from wet to dry storage of spent fuel and a change in building dimensions;
- replacement of the Access Control Building associated with the ISFS with a new larger Equipment Storage Building;
- relocation and re-design of the meteorological mast resulting in the meteorological station building no longer being required;
- amendment to retain the existing temporary Hinkley Point Substation as a permanent feature to supply electricity to neighbouring Hinkley Point A and Hinkley Point B; and

[52] Department of Energy and Climate Change (2013). Record of the Habitats Regulation Assessment. Available at: Record Of Appropriate Assessment Undertaken Under Regulation 48 Of The Conservation (Natural Habitats &C) Regulations 1994. [Accessed February 2025]
[53] EDF. (2024). Hinkley Point C Update. [Online]. Available at: https://www.edf.fr/en/the-edf-group/dedicated-sections/journalists/all-press-releases/hinkley-point-c-update-1 (Accessed February 2025)

- four new structures (two per Unit of Hinkley Point C) to house sluice gates and lifting beams to be used during outages (i.e. maintenance periods) only.

2.2.12 The HPC DCO Material Change Shadow HRA concluded it was not possible to exclude a risk of an AEoI due to the potential LSE via the fish entrapment pathway (associated with the removal of the AFD requirement) on the following sites and features:

- Severn Estuary SAC:
  - Estuaries feature[54].
- Twaite shad.
- Severn Estuary Ramsar Site:
  - Criterion 4 – Assemblage of migratory fish species.
- River Wye SAC:
  - Atlantic salmon;
  - Twaite shad;
  - Allis shad;
  - River Usk SAC
  - Atlantic salmon;
  - Twaite shad

2.2.13 The Shadow HRA progressed to Stage 3 – Derogations for HPC alone, resulting in the need to meet 3 legal tests: 1. Consider alternative solutions, 2. Consider imperative reasons of overriding public interest and 3. Secure compensatory measures. The Shadow HRA concluded "*that nationally important, urgent and long-term public interest benefits associated with HPC decisively override the predicted risk of adverse effects on site integrity because:*

- *Whilst HPC without an AFD gives rise to an acknowledged risk of an adverse effect on the integrity of four European / Ramsar sites which cannot be excluded beyond reasonable doubt, there is no certainty of any such adverse effect on integrity;*
- *The ecological context relating to the acknowledge risk shows that any impacts are expected to be low level; and*
- *Any impact will not be permanent*."

2.2.14 LSE to the Severn Estuary SAC, Ramsar Site, River Wye SAC and River Usk could not be ruled out for fish entrapment for HPC. Whereas LSE for the Proposed Works relate to underwater noise changes, barrier to species movement and changes in supporting habitat and prey availability. While these are differential impact pathways, they all have the potential to combine and result in impacts to the qualifying fish features of the above designated sites.

2.2.15 Despite the above, the CW intake dismantling works are temporary, spanning approximately four months. Hydraulic breaking activities are limited to a six-hour operational window, during daylight

[54] Subtidal sandbanks, intertidal mudflats and sandflats, Atlantic saltmeadows, reefs of *Sabellaria alveolata*, hard substrate habitat notable communities

hours. During this time, marine vessels and equipment will not be operating constantly. Considering the temporary and highly localised nature of impacts, no AEoI are anticipated (i.e. no increase in potential AEoI beyond that of HPC in isolation).

2.2.16 Consideration has been given to the relevant qualifying features and interests and the Proposed Works in-combination with HPC and it is concluded there is no AEoI alone, or in-combination on the following designated sites of relevance:

- Severn Estuary / Môr Hafren SAC;
- Severn Estuary Ramsar Site;
- River Usk / Afon Wsyg SAC;
- River Wye / Afon Gwy SAC;
- River Axe SAC;
- River Avon SAC;
- Pembrokeshire Marine / Sir Benfro Forol SAC;
- Cardigan Bay / Bae Ceredigion SAC;
- Plymouth Sound and Estuaries SAC;
- Carmarthen Bay and Estuaries/ Bae Caerfyrddin ac Aberoedd SAC;
- Afon Tywi/ River Tywi SAC;
- River Itchen SAC;
- Afonydd Cleddau / Cleddau River SAC;
- Slaney River Valley SAC;
- Lower River Suir SAC;
- River Barrow and River Nore SAC;
- Blackwater River (Cork/Waterford) SAC; and
- River Boyne and River Blackwater SAC.

2.2.17 In respect to Sites designated for bird features, the shadow HRA for HPC could not rule out LSE for:

- Severn Estuary SPA;
- Severn Estuary Ramsar;
- Somerset Levels and Moors SPA;
- Somerset Levels and Moors Ramsar;
- Northern Cardigan Bay SPA;
- Exe Estuary SPA;
- Chesil Beach and the Fleet SPA;
- Skomer, Skokholm and the Seas off Pembrokeshire SPA;
- Poole Harbour SPA;
- Poole Harbour Ramsar;
- Solent and Dorset Coast SPA;
- Upper Nene Valley Gravel Pits SPA;
- Upper Nene Valley Gravel Pits Ramsar;
- Aberdaron Costa and Bardsey Island SPA;
- Grassholm SPA;
- Dee Estuary SPA;
- Dee Estuary Ramsar;

- Solent and Southampton Water SPA;
- Solent and Southampton Water Ramsar;
- Mersey Estuary SPA;
- Mersey Estuary Ramsar;
- Saltee Islands SPA;
- Lambay Island SPA;
- Cliffs of Moher SPA;
- Beara Peninsula SPA;
- Kerry Head SPA;
- Deenish Island and Scariff Island SPA;
- Iveragh Peninsula SPA;
- Puffin Island SPA;
- Skellings SPA;
- Dingle Peninsula SPA;
- West Donegal Coast SPA;
- Blasket Islands SPA;
- Horn Head to Fanad Head SPA;
- Clare Island SPA;
- High Island, Inishshark and Davillaun SPA;
- Tory Island SPA; and
- Duvillaun Islands SPA.

2.2.18 With the exception of Severn Estuary SPA / Ramsar and Somerset Levels SPA / Ramsar the shadow HRA for HPC concluded that LSE cannot be ruled out on the basis of potential effects on piscivorous marine bird species. HPB has no predicted similar effects and therefore will not contribute to any in-combination effect. Similarly, there is considered to be no LSE from HPB on Somerset Levels SPA and Ramsar so that there is no potential for a contribution to an in-combination effect.

2.2.19 The shadow HRA for HPC subsequently concludes that there are no AEoI on features of the Severn Estuary SPA / Ramsar. Through the marine design element of HPC, the only deemed LSE relates to indirect effects of a change in water quality (and not visual disturbance, noise or loss/alteration of habitat). No equivalent effect (to a change in water quality) is predicted for HPB and there will be no contribution to an in-combination effect.

2.3 BRIDGWATER TIDAL BARRIER

2.3.1 The Environment Agency and Somerset Council have jointly developed proposals for a Tidal Barrier Scheme on the River Parrett, to protect Bridgwater and the surrounding communities from flooding.

2.3.2 The Scheme will reduce tidal flood risk to 11,300 homes and 1,500 businesses[55]. The whole scheme comprises of:

- Constructing a tidal barrier on the River Parrett, next to Express Park, Bridgwater
- Improving existing downstream riverside banks and constructing new secondary flood banks
- Improving fish and eel passage at 12 upstream sites on the rivers Parrett and Tone

2.3.3 It is likely to take around 4 to 6 years to complete all elements of the scheme, and construction commenced in 2024.

2.3.4 The key works associated with the proposed Bridgwater Tidal Barrier will be located across the River Parrett between Express Park and Chilton Trinity. This is approximately 4.3 km upstream from the Severn Estuary SPA/Ramsar and 10-15 km upstream from the mouth of the River Parrett, which supports core roosting and loafing habitat of shelduck and other wildfowl and waders. In addition, the scheme includes construction of new secondary flood defences (and raising of existing primary defences) at Chilton Trinity, Pawlett, and Combwich.

2.3.5 The findings of the HRA Process reported by the Environment Agency to support the application for the project[56] included detailed assessment for species identified as being of potential concern, including shelduck and redshank, and progressed to an assessment of the likelihood and significance of the effects on Severn Estuary and Somerset Levels and Moors SPA and Ramsar site qualifying passage and wintering birds. Potential pathways identified related to:

- *'Construction and Operation: Loss of supporting habitat (within the SPA/Ramsar Site boundaries) and loss of land of functional importance (i.e. functional supporting habitat) for passage and wintering birds.*
- *Construction: Noise, lighting and vibration disturbance effects on passage and wintering birds using functional supporting habitat.*
- *Construction: Visual disturbance effects on passage and wintering birds using functional supporting habitat from the presence of construction works and lighting.*
- *Operation: Noise and lighting disturbance effects on passage and wintering birds using functional supporting habitat.*
- *Construction: Pollution events changing the water chemistry of the River Parrett leading to indirect effects on SPA and Ramsar site birds through reduced invertebrate abundance.'*

2.3.6 The assessment concluded that any effects identified were not of a high enough magnitude to cause adverse effects on site integrity. Indeed, several qualifying features (dunlin, ringed plover and pintail) of the Severn Estuary SPA and/ or Ramsar were not considered to occur in numbers that warranted consideration in the assessment. For other qualifying features, the assessment of noise disturbance found that outputs from the scheme would not likely cause any physical displacement. Similarly, the assessment of visual disturbance concluded for all features that there was no prospect of AEoI.

[55] Bridgwater Tidal Barrier
[56] Environment Agency (2019) Bridgwater Tidal Barrier Scheme: Report to Support a Habitats Regulations Assessment. November 2019. Available at: https://sedgemoor-consult.objective.co.uk/file/5556078. Accessed February 2025.

2.3.7 In light of the above identified effect pathways and conclusions, it is considered there is limited ability for effects of the Bridgwater Tidal Barrier to combine with the Proposed Works to combine given the distance between the works (over 10km). In addition, no AEoI on features associated with the Severn Estuary SPA/Ramsar was concluded with the HPB Proposed Works in isolation. Therefore, the potential for in-combination effects can also be discounted.

2.4 CONCLUSION

2.4.1 The appraisal of potential in-combination AEOI of activities associated with Hinkley Point C or the Bridgwater Tidal Barrier and the Proposed Works, concludes that there is no potential for in-combination AEOI.

3 CONCLUSIONS

3.1.1 A summary providing the conclusions for the AA for the Proposed Works both alone and in-combination with other relevant plans and projects is provided in **Table 3-1**.

Table 3-1 – Summary of the potential for adverse effects on integrity from the Proposed Works alone and in-combination

Designated Site	Qualifying Feature(s)	Effect	Conclusion Alone	Conclusion In-Combination
Severn Estuary / Môr Hafren SAC (UK0013030)	1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1110 Sandbanks which are slightly covered by sea water all the time 1170 Reefs	Abrasion / disturbance of the surface of the substratum or seabed and penetration or disturbance of the substratum subsurface	No AEoI	No AEoI
		Smothering and siltation rate changes	No AEoI	No AEoI
	1095 Sea lamprey 1099 River lamprey 1103 Twaite shad	Underwater noise changes	No AEoI	No AEoI
		Barrier to species movement	No AEoI	No AEoI
		Changes to supporting habitat and prey availability	No AEoI	No AEoI
Severn Estuary/ Môr Hafren Ramsar Site (UK11081)	1130 Estuaries	Abrasion / disturbance of the surface of the substratum or seabed and penetration or disturbance of the substratum subsurface	No AEoI	No AEoI
		Smothering and siltation rate changes	No AEoI	No AEoI
	Assemblage of migratory fish species	Underwater noise changes	No AEoI	No AEoI
		Barrier to species movement	No AEoI	No AEoI
		Changes to supporting habitat and prey availability	No AEoI	No AEoI
	Ringed Plover Pintail Teal	Visual disturbance	No AEoI	No AEoI
		Noise disturbance	No AEoI	No AEoI
		Loss of or alteration to supporting habitat	No AEoI	No AEoI

Designated Site	Qualifying Feature(s)	Effect	Conclusion Alone	Conclusion In-Combination
Severn Estuary SPA (UK9015022)	Dunlin (wintering) Shelduck (wintering) Redshank (wintering) Waterbird assemblage (wintering/passage)	Visual disturbance	No AEoI	No AEoI
		Above water noise	No AEoI	No AEoI
		Loss of or alteration to supporting habitat	No AEoI	No AEoI
Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC (UK0030396)	1351 Harbour porpoise	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
West Wales Marine / Gorllewin Cymru Forol SAC	1351 Harbour porpoise	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
North Channel SAC	1351 Harbour porpoise	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Rockabill to Dalkey Island SAC	1351 Harbour porpoise	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Blasket Islands SAC	1351 Harbour porpoise 1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Roaringwater Bay and Islands SAC	1351 Harbour porpoise 1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Nord Bretagne DH SCI	1351 Harbour porpoise 1349 Bottlenose dolphin	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI

Designated Site	Qualifying Feature(s)	Effect	Conclusion Alone	Conclusion In-Combination
Ouessant-Molene SCI	1351 Harbour porpoise 1349 Bottlenose dolphin 1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Mers Celtiques Talus du golfe de Gascogne SCI	1351 Harbour porpoise 1349 Bottlenose dolphin	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Côte de Granit rose-Sept-Iles SCI	1351 Harbour porpoise 1349 Bottlenose dolphin	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Tregor Goelo SCI	1351 Harbour porpoise 1349 Bottlenose dolphin	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Baie de Morlaix SCI	1351 Harbour porpoise	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Abers – Côte des légendes SCI	1351 Harbour porpoise	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Chaussée de Sein SCI	1351 Harbour porpoise 1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Lundy SAC (UK0013114)	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI

Designated Site	Qualifying Feature(s)	Effect	Conclusion Alone	Conclusion In-Combination
Pembrokeshire Marine / Sir Benfro Forol SAC		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Cardigan Bay / Bae Ceredigion SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
North Rona SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Monach Islands SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Horn Head and Rineclevan SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Slieve Tooey/Tormore Island/Loughros Beg Bay SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Inishkea Islands SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Duvillaun Islands SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI

Designated Site	Qualifying Feature(s)	Effect	Conclusion Alone	Conclusion In-Combination
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Inishbofin and Inishsark SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Slyne Head Islands SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Roringwater Bay and Islands SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Isles of Scilly Complex SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
The Maidens SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI
Treshnish Isles SAC	1364 Grey seal	Underwater noise changes	No AEoI	No AEoI
		Changes in supporting habitat and prey availability	No AEoI	No AEoI

Figures

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320000 321000 322000

147000 146000 145000

N

Braeland Copse

North Moor

Wick Moor Drove

Wick Moor

Key

Indicative Dismantling Works Area ("Works Area")

Nuclear Site Licence Boundary ("The Site")

Intertodal habitats

- LR.FLR.Eph.EphX
- LR.FLR.Rkp.Cor.Cor
- LR.FLR.Rkp.SwSed
- LR.HLR.MusB.Sem.Sem
- LR.LLR.FVS.AscVS
- LR.LLR.FVS.FserVS
- LR.LLR.FVS.FvesVS
- LR.MLR.BF.Fser.Bo
- LR.MLR.BF.FvesB
- LS.LBR.Sab.Salv
- LS.LCS.Sh.BarSh
- LS.LMx.Mx
- LS.LSa.MuSa.MacAre

Subtidal habitats

- Sublittoral Sand
- Sublittoral Sabellaria Reef
- Sublittoral Mud
- Littoral Sand
- Littoral Sabellaria Reef
- Littoral Mud

0 100 200 300 400 500 600 m

Scale at A3: 1:10,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulations Appraisal - Stage 2: RIAA

Figure 1.1
Intertidal and Subtidal habitats within the Study Area

February 2025

316000 317000 318000 319000 320000 321000 322000 323000 324000 325000 326000

152000 151000 150000 149000 148000 147000 146000 145000 144000

N

Bridgwater Bay

Lilstock
Poole's Barton
Cross Elms Hill
New Barn
Knighton
Burton
Shurton
Kilton
Culver Street Farm
Lower Hill Farm
Steepholme
Honibere Farm
Little Water Farm
Water Farm
Hillhop Barn
Doggetts
Wick Moor Drove
Head Weir House
Wick
Zine Farm
Sunshine Lodge
Wick Pound House
Newnham Farm
Gunter's Grove
Farringdon Hill La
Farringdon Hill Farm
Wick Park Cottage
Adams's
Idson Farm
Stolford
Gorpit La
Whitewick Farm
Browns Farmhouse
Crossway
Chalcott Farm
Woolstone Farm Cottages
Woolstone Farm
Marsh Farm
Stert Drove
Upper Cock Farm
Lower Cock Farm
Stockland Bristol
Otterhampton
Juvenis

Key

Indicative Dismantling Works Area ("Works Area")

Very High Frequency Cetaceans

PTS Onset - 736m

TTS Onset 5065m

PCW (Phocid carnivores in water)

PTS Onset - 377m

TTS Onset - 2592m

All Species

Onset of Behavioural Response: 60m

0 250 500 750 1,000 1,250 1,500 1,750 m

Scale at A3: 1:35,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulation Appraisal - Stage 2: RIAA

Figure 1.2
Preliminary Impact Ranges (m) for very high frequency cretaceans and phocid (PCW) pinnipeds in water

February 2025

320000 320200 320400 320600 320800 321000 321200 321400

147200 147000 146800 146600 146400 146200

N

Key

- Indicative Dismantling Works Area ("Works Area")
- Mortality - 29m
- Recoverable injury - 49m
- TTS onset - 433m

Drove

0 50 100 150 200 250 m

Scale at A3: 1:5,000

Decommissioning of Hinkley Point B Nuclear Power Station
Habitats Regulation Appraisal - Stage 2: RIAA

Figure 1.3
Preliminary Impact Ranges (m) for fish species where the swim bladder is involved in hearing (primarily pressure detection)

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