



FIVE ESTUARIES OFFSHORE WIND FARM ENVIRONMENTAL STATEMENT

VOLUME 6, PART 8, CHAPTER 1: LESSER
BLACK BACKED GULL COMPENSATORY
AREAS ENVIRONMENTAL ASSESSMENT

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DEFINITION OF ACRONYMS

Term	Definition
AEol	Adverse Effects on Integrity
AOE	Alde Ore Estuary
AON	Apparently Occupied Nests
AONB	Area of Outstanding Natural Beauty
AOT	Apparently Occupied Territories
AQMA	Air Quality Management Area
DCO	Development Consent Order
ES	Environmental Statement
ESC	East Suffolk Council
ETG	Expert Topic Group
HRA	Habitats Regulation Assessment
INNS	Invasive Non Native Species
IROPI	Imperative reasons of overriding public interest
LBBG	Lesser Black Backed Gulls
LCT	Landscape Character Types
LPA	Local Planning Authority
MMF	Mean-max foraging range
MW	Megawatts
OOEG	Offshore Ornithology Engagement Group
PCS	Proposed Compensation Site
RSPB	Royal Society for the Protection of Birds
SMP	Seabird Monitoring Programme
SPA	Special Protection Area
VE	Five Estuaries Offshore Windfarm
VE OWFL	Five Estuaries Offshore Windfarm Limited



GLOSSARY OF TERMS

Term	Definition
The Applicant	Five Estuaries Offshore Wind Farm Limited (The Applicant)
Development Consent Order	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact in question with the sensitivity of the receptor in question, in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
ES	Environmental Statement. The documents that collate the processes and results of the EIA.
European sites	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial, resulting from the activities associated with the construction, operation and maintenance, or decommissioning of the project.
Habitats Regulations Assessment (HRA)	The assessment of the impacts of implementing a plan or policy on a European Site (as required by the Conservation of Habitats and Species Regulations 2017 (as amended) and the



Term	Definition
	Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended)), the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it will adversely affect the integrity of the site.
Mitigation	Mitigation measures, or commitments, are commitments made by the project to reduce and/or eliminate the potential for significant effects to arise as a result of the project.
National Policy Statement (NPS)	Part 2 of the Planning Act 2008 sets out the national policy against which NSIP applications are assessed. NPSs set out guidance to inform the decision-making process for NSIPs. NPSs relevant to energy generation include Overarching National Policy Statement for Energy (EN-1) (DESNZ, 2023) and National Policy Statement for Renewable Energy (EN-3) (DESNZ, 2023)
NSIP	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO under the Planning Act 2008. These include proposals for offshore wind farms with an installed capacity over 100MW.
Order Limits	The extent of development including all works, access routes, TCCs, visibility splays and discharge points. (Not Red Line Boundary (RLB))
Special Area of Conservation (SAC)	A special area of conservation is defined in the European Union's Habitats Directive, also known as the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.
Special Protection Area (SPA)	Sites designated under EU Regulations (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive Regulations.
The Planning Act (PA) 2008	The legislative framework for the process of approving major new infrastructure projects.



1 LESSER BLACK BACKED GULL COMPENSATION

1.1 PURPOSE OF THIS CHAPTER

- 1.1.1 This chapter has been prepared in relation to the proposed compensatory measures associated with the Five Estuaries Offshore Wind Farm Project (VE) for Lesser Black Backed Gulls (LBBG) (*Larus fuscus*). It considers the construction, operational and decommissioning onshore activities associated with the compensatory measures.
- 1.1.2 As part of the DCO application, the Applicant has produced a Report to Inform Appropriate Assessment (RIAA), Volume 5, Report 4 (supported by Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment), which assesses the potential effects from VE with respect to the conservation objectives of the European and Ramsar sites identified where a potential for a Likely Significant Effect (LSE) cannot be ruled out, to determine the potential for an Adverse Effect on Integrity (AEol) alone and/or in-combination with other plans or projects.
- 1.1.3 The purpose of the RIAA is to provide sufficient information to the Competent Authority (in this case the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ)), in consultation with the relevant Statutory Nature Conservation Bodies (SNCBs), to enable them to undertake an Appropriate Assessment (AA) for VE.
- 1.1.4 The Applicant's RIAA concluded that there is no AEol during the construction, operation and decommissioning of VE in combination with other plans and projects for all designated sites, with the exception of:
- > Alde-Ore Estuary SPA (AOE SPA) – LBBG (*L. fuscus*) feature (collision during the O&M phase) and;
 - > Alde-Ore Estuary Ramsar – LBBG (*L. fuscus*) feature (collision during the O&M phase).
- 1.1.5 The HRA Derogation Provisions provide that a project having an AEol on a European Site may proceed (subject to a positive conclusion on alternatives and provision of any necessary compensation) if the project must be carried out for imperative reasons of overriding public interest (IROPI) that justify the project despite the environmental damage it may cause.
- 1.1.6 Section 5 of the Derogation Case (Volume 5, Report 5: Habitats Regulations Assessment 'Without Prejudice Derogation Case') demonstrates that the SoS can be satisfied that there are IROPI for VE, should the SoS conclude AEol in respect of any European Sites. The 'Without Prejudice Derogation Case' (Volume 5, Report 5: Habitats Regulations Derogation Case) sets out a compelling case that VE must be carried out for IROPI in view of its social and economic benefits, which align with (and are needed to achieve) UK government policy aspirations and legal commitments.
- 1.1.7 Natural England (the government's adviser for the natural environment) has advised that to properly mitigate any potential harm from VE to LBBG, a compensation measure is required. Two compensation measures are proposed in the Application for LBBG, only one of which would be taken forward as either would fully compensate for the impact of VE on this feature of the AOE SPA. These are:



- > Installation of predator control measures (fencing) and habitat restoration at Orford Ness within the AOE SPA, or;
- > Predator control and habitat management at Outer Trial Bank, an artificial island in the Wash.

1.1.8 The compensation site at Orford Ness within the AOE SPA (as shown in Figure 1.1) is within the DCO Order Limits to provide security of delivery. By including this area within the DCO the Applicant can rely on the associated planning permission and compulsory acquisition powers (subject to the National Trust's inalienable rights) to deliver the compensation measure. The Applicant would seek voluntary agreements with land interests and may apply for separate planning permission alongside the DCO.

1.1.9 As the compensation area at Orford Ness is included with the DCO it is subject to EIA alongside the wider development. This chapter provides the environmental assessment required for installation of the proposed predator exclusion fencing, and additionally considers any cumulative or inter-related impacts with other developments or the wider VE development.

1.1.10 The compensation measure at Outer Trial Bank would be delivered through agreement with those responsible for management of the site (Defra and The Crown Estate), or strategically through the Marine Recovery Fund. As such it is not included within the DCO Order Limits nor subject to EIA as part of the application.

1.2 SUPPORTING INFORMATION

1.2.1 This chapter refers to wider material that has been submitted as part of the DCO Application. A list of the documents supporting the LBBG Compensation Area EIA is provided below:

- > Annex 1.1: Flood Risk Assessment
- > Annex 1.2: LBBG Landscape and Visual Impact Appraisal
- > Annex 1.3: LBBG Ecological Impact Assessment
- > Volume 5, Annex 5.4.5: LBBG Compensatory Area Habitats Regulation Assessment
- > Volume 5, Report 5: Habitats Regulations Derogation Case
- > Volume 5 Report 5 Annex 5.6 LBBG Implementation and Monitoring Plan
- > Volume 5, Annex 5.4: Report to Inform Appropriate Assessment
- > Volume 5, Report 5, Annex 3: LBBG Compensation – Evidence, Site Selection and Roadmap
- > Volume 5, Report 5, Annex 5.9 LBBG Compensation Site Suitability Report and
- > Volume 6, Part 2, Chapter 4: Offshore Ornithology.

1.3 STATUTORY AND POLICY CONTEXT

1.3.1 This section identifies the legislation and policy that has informed the assessment of effects with respect to LBBG. A summary of the key provisions within the relevant legislation and policy is provided in Table 1.1. Further information on policies relevant to the EIA and their status is provided in Volume 6, Part 1, Chapter 2: Policy and Legislation.



- 1.3.2 Additional, topic specific policy and legislation is available in the following ES chapters and Report to Inform Appropriate Assessment:
- > Volume 6, Part 3, Chapter 2: Landscape and Visual Impact Assessment;
 - > Volume 6, Part 3, Chapter 3: Socio-Economic, Tourism and Recreation;
 - > Volume 6, Part 3, Chapter 4: Onshore Biodiversity and Nature Conservation;
 - > Volume 6, Part 3, Chapter 5: Ground Conditions and Land Use;
 - > Volume 6, Part 3, Chapter 6: Hydrology, Hydrogeology and Flood Risk;
 - > Volume 6, Part 3, Chapter 7: Archaeology and Cultural Heritage;
 - > Volume 6, Part 3, Chapter 8: Traffic and Transport;
 - > Volume 6, Part 3, Chapter 9: Airborne Noise and Vibration;
 - > Volume 6, Part 3, Chapter 10: Air Quality; and
 - > Volume 5, Report 4: Report to Inform Appropriate Assessment.
- 1.3.3 The proposed predator exclusion fencing will provide compensation to fulfil the requirements of the mechanism laid out in the derogation case (Volume 5, Report 5.5: Habitats Regulations Derogation Case) The compensation measures must be in place to allow the required number of LBBG breeding seasons to take place prior to operation of VE's wind turbine generators.

NATIONAL LEGISLATION

CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017 (AS AMENDED)

- 1.3.4 The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) are one of the pieces of domestic law that transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Natura Directives) into English and Welsh law. These regulations were last amended in 2019 to make them operable from 1 January 2021 despite the UK's withdrawal from the European Union (EU).
- 1.3.5 The Habitats Regulations cover the requirements for protecting sites that are internationally important for threatened habitats and species and set out a legal framework for species requiring strict protection.

RAMSAR CONVENTION

- 1.3.6 The Convention on Wetlands of International Importance especially as Waterfowl Habitat ('Ramsar Convention' or 'Wetlands Convention') was adopted in Ramsar, Iran in February 1971 and came into force in December 1975. It provides the only international mechanism for protecting sites of global importance and is thus of key conservation significance.
- 1.3.7 The UK ratified the Ramsar Convention and designated its first Ramsar Sites in 1976. The designation of UK Ramsar Sites has generally been underpinned through prior notification of these areas as Sites of Special Scientific Interest (SSSI). The UK government and the devolved administrations have also issued policy statements relating to Ramsar Sites which extend to them the same protection at a policy level as Special Areas of Conservation (SAC) and Special Protection Areas (SPA).



WILDLIFE AND COUNTRYSIDE ACT 1981

1.3.8 The Wildlife and Countryside Act 1981 consolidated and amended existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Birds Directive.

ENVIRONMENT ACT 2021

1.3.9 The Environment Act 2021 has wide ranging provisions including those around:

- > Environmental governance;
- > Environmental regulation;
- > Waste and resource efficiency;
- > Air quality and environmental recall;
- > Water;
- > Nature and biodiversity; and
- > Conservation covenants.

THE WATER ENVIRONMENT (WATER FRAMEWORK DIRECTIVE) (ENGLAND AND WALES) REGULATIONS 2017

1.3.10 Part 3 of the regulations provides for the protection of areas of habitats or species where maintenance of the status of water is an important factor. Under the regulations, additional consideration may need to be given to sites in the form of a Water Framework Directive (WFD) assessment where a project lies in proximity to a water body or to linked water bodies which could be affected. This includes consideration of whether water bodies are WFD receptors, in particular those of high status or which have high status morphology.

NATURAL ENVIRONMENT & RURAL COMMUNITIES (NERC) ACT 2006

1.3.11 Section 40 of the NERC Act 2006 places a duty on public authorities to have regard to the purpose of conserving biodiversity in the exercise of their functions. Public authorities include government departments, local authorities and statutory undertakers.

1.3.12 Section 41 of the Act requires the publication of a list of habitats and species which are of principal importance for the purpose of conserving biodiversity. Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.



NATIONAL PLANNING POLICY FRAMEWORK

- 1.3.13 The National Planning Policy Framework (NPPF), prepared by the Department for Communities and Local Government was published in March 2012 and revised in December 2023. Chapter 14 of the NPPF, Meeting the challenge of climate change, flooding and coastal change, along with the Planning Practice Guidance (PPG) which expands on policies contained in the NPPF, recommends a proactive strategy to mitigate and adapt to climate change and requires that flood risk, sustainability and water quality are considered. In addition, the NPPF requires that account is taken of the potential for pollution arising from previous use of the land when determining suitability for a proposed use. NPPF (2012) informs section 5.8 Flood Risk of the Overarching National Planning Policy Statement for Energy (EN-1).
- 1.3.14 Chapter 15 of the NPPF, Conserving and enhancing the natural environment, along with guidance contained within PPG requires that account is taken of the potential for impact on water quality (in relation to water supply and the natural environment) and local hydrological regimes. NPPF informs section 5.16 Water Quality and Resources of the Overarching National Planning Policy Statement for Energy (EN-1).

NATIONAL POLICY STATEMENTS

- 1.3.15 The National Policy Statements (NPS) are a series of decision-making documents to guide decision making on Nationally Significant Infrastructure Projects (NSIP). Decisions under the Planning Act 2008 must be made in accordance with the relevant NPS where one is in force, and this assessment therefore makes explicit reference to the relevant NPS requirements. Those relevant to this chapter are limited to the Overarching National Policy Statement for Energy (EN-1).

LOCAL PLANNING POLICY

EAST SUFFOLK COUNCIL – SUFFOLK COASTAL LOCAL PLAN – ADOPTED SEPTEMBER 2020

- 1.3.16 The East Suffolk Council Suffolk Coastal Local Plan guides planning decisions in the Suffolk Coastal district of East Suffolk and five policies are of particular relevance to the proposed compensation area, biodiversity and nature conservation. The policies are set out in Table 1.1. Paragraph 3.52 of the Suffolk Coastal Local Plan states that *‘The Suffolk Coast is at the forefront of electricity energy generation across the country both in respect of onshore and offshore energy. It is essential that major energy infrastructure projects are delivered in a planned way which takes into account the potential impact of constructing, operating and decommissioning large and nationally significant infrastructure in East Suffolk. The Council is committed to working in a collaborative partnership approach with the scheme promoters, local communities, Government, New Anglia Local Enterprise Partnership, service providers and public bodies to ensure the best outcomes of major energy infrastructure projects can be achieved.’*



Table 1.1 Legislation and policy context

Legislation/ policy	Key provisions of relevance to this assessment	Section where key provisions addressed
Legislation		
Conservation of Habitats and Species Regulations 2017 (as amended)	Protection of Special Protection Areas (SPAs) and Special Areas of Conservation (SAC). Protection of certain animal species and their places or rest or shelter. Protection of certain plant species.	The relevant provisions of the Habitats Regulations are addressed in Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment.
Wildlife and Countryside Act 1981 (as amended)	Protection of Sites of Special Scientific Interest (SSSIs). Protection of certain animals and plant species and their place of shelter or protection. Prohibition of allowing certain plant species to grow or spread in the wild.	The relevant provisions of the Wildlife and Countryside Act are addressed in Volume 6, Part 8, Annex 1.3 Ecological Impact Assessment.
Environment Act 2021	Schedule 15 of the Act introduces “biodiversity gain in nationally significant infrastructure projects”. These changes will be enacted through subsequent secondary legislation or regulations.	The relevant provisions of the Wildlife and Countryside Act are addressed in Volume 6, Part 8, Annex 1.3 Ecological Impact Assessment.
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017	Part 3 of the Regulations provides for the protection of areas of habitats or species where maintenance of the status of water is an important factor.	The relevant provisions of the Water Framework Directive are addressed in Volume 9, Report.6: WFD Assessment Onshore.
Natural Environment & Rural Communities (NERC) Act 2006	Section 40 of the NERC Act 2006 places a duty on public authorities to have regard to the purpose of conserving biodiversity in the exercise of their functions. Section 41 of the Act requires the publication of a list of habitats and species which are of principal importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.	The relevant provisions of the NERC Act are addressed in Volume 6, Part 8, Annex 1.3 LBBG Ecological Impact Assessment (EclA).
National Planning Policy		
Overarching National Policy Statement for Energy (EN-1, (DESNZ 2023, 2023a))	<p>EN-1 sets out the requirements for assessment (as described in the individual ES chapters). Effects on onshore receptors are considered in section 1.11 of this chapter. Each topic considered has had due regard to relevant guidance provided in EN-1.</p> <p>General Paragraph 4.3.11 advises that <i>‘In some instances it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.’</i> At paragraph 4.3.12 it is stated that, where this is the case, <i>‘the ES should, to the best of the applicant’s knowledge, assess the likely worst-case environmental, social and economic effects of the proposed development to ensure that the impacts of the project as it may be constructed have been properly assessed.’</i></p> <p>Landscape and Visual Paragraph 5.10.6 advises that <i>‘Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints, the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.’</i></p> <p>Archaeology and Cultural Heritage Any application should contain sufficient information to allow the impact of the proposed development on the heritage significance of assets to be understood (paragraph 5.9.12).</p> <p>Hydrology and Flood Risk</p>	<p>Landscape and visual impact is assessed in Annex 1.2 to this chapter and summarised in Section 1.11 of this chapter.</p> <p>Archaeology and cultural heritage impact is assessed in Section 1.11 of this chapter.</p> <p>Hydrology and flood risk is assessed in Section 1.11 of this chapter, a flood risk assessment is available in Annex 1.1 of this chapter:</p> <p>Air quality impact is assessed in Section 1.11 of this chapter.</p> <p>Traffic and transport impact is assessed in Section 1.11 of this chapter.</p> <p>Ground contamination and land use impact is assessed in Section 1.11 of this chapter.</p> <p>Onshore biodiversity impact is assessed in Annex 1.3: of this chapter and summarised in Section 1.11 of this chapter.</p> <p>Human health impact is assessed in Section 1.11 of this chapter.</p> <p>Socioeconomic and tourism impact is assessed in Section 1.11 of this chapter.</p>



<p>Paragraph 5.8.13 requires that applications for energy projects of 1 hectare or greater in Flood Zone 1 and all energy projects located in Flood Zones 2 and 3 should be accompanied by a FRA. A FRA may also be required where there maybe flooding issues other than from rivers and the sea (for example from surface water), or where the EA, Drainage Board or other body have indicated that there may be drainage problems. The FRA should identify and assess the risks of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account.</p> <p>Paragraph 5.16.3 of NPS EN-1 requires applicants to undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment where it is considered that a project could have effects on the water environment.</p> <p>Air Quality</p> <p>Paragraph 5.2.9 states that <i>“The ES should describe:</i></p> <p><i>existing air quality concentrations and the relative change in air quality from existing levels;</i></p> <p><i>any significant air quality effects, mitigation action taken and any residual effects, distinguishing between the project stages and taking account of any significant emissions from any road traffic generated by the project;</i></p> <p><i>the predicted absolute emissions, concentration change and absolute concentrations as a result of the proposed project, after mitigation methods have been applied;</i></p> <p><i>any potential eutrophication impacts.”</i></p> <p>Airborne Noise</p> <p>Paragraph 5.2.10 states that <i>“applicants should consider the Environment Targets (Fine Particulate Matter) (England) Regulations 2022 and associated Defra guidance”</i>.</p> <p><i>Paragraph 5.12.17 of EN-1 states:</i></p> <p><i>The Secretary of State should not grant development consent unless they are satisfied that the proposals will meet the following aims, through the effective management and control of noise:</i></p> <p><i>avoid significant adverse impacts on health and quality of life from noise</i></p> <p><i>mitigate and minimise other adverse impacts on health and quality of life from noise</i></p> <p><i>where possible, contribute to improvements to health and quality of life through the effective management and control of noise</i></p> <p>Traffic and Transport</p> <p>Paragraph 5.14.8 states:</p> <p><i>“The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports).”</i></p> <p>Paragraph 5.14.21 states:</p> <p><i>“The Secretary of State should only consider refusing development on highways grounds if there would be an unacceptable impact on highway safety, or residual</i></p>	<p>Section 1.4 of ES Volume 5, Report 5 HRA Derogation Case provides further information on derogation under the Habitats Regulations.</p>
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	<p><i>cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision.”</i></p> <p>Ground Conditions and Land Use</p> <p>Paragraph 5.11.13 <i>‘Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed.’</i></p> <p>Onshore Biodiversity</p> <p>Paragraph 5.4.17 sets out that where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats.</p> <p>Human Health and Major Disasters</p> <p>Paragraphs 4.4.4 – 4.4.6 state that:</p> <p><i>“as described in the relevant sections of this NPS and in the technology specific NPSs, where the proposed project has an effect on humans, the ES should assess these effects for each element of the project, identifying any potential adverse health impacts, and identifying measures to avoid, reduce or compensate for these impacts as appropriate.</i></p> <p><i>The impacts of more than one development may affect people simultaneously, so the applicant should consider the cumulative impact on health in the ES where appropriate.”</i></p> <p>Socioeconomics and Tourism</p> <p>Paragraph 5.13.3 that the applicant is strongly encouraged to engage with relevant local authorities during early stages of project development so that the applicant can gain a better understanding of local or regional issues and opportunities.</p> <p>Paragraph 5.13.4 states that the assessment should consider all relevant socio-economic impacts, which may include:</p> <ul style="list-style-type: none"> > the creation of jobs and training opportunities. > the contribution to the development of low-carbon industries > the provision of additional local services and improvements to local infrastructure > any indirect beneficial impacts for the region hosting the infrastructure > effects on tourism > the impact of a workers during the different construction, operation and decommissioning phases > cumulative effects 	
UK (England) Government Policy		
NPPF December 2023	<p>The full requirements of the National Planning Policy Framework (NPPF) are set out in full in Table 5-1 of Document 9.2 Policy Compliance Statement as well as in the individual ES chapters.</p> <p>Chapter 14 of the NPPF relates to meeting the challenge of climate change, flooding and coastal change, and Chapter 15 relates to conserving and enhancing</p>	<p>The impacts of the proposed fence on flood risk and the water environment are considered and assessed in Volume 6, Part 8, Annex 1.1 Flood Risk Assessment, whilst the impacts on landscape are considered in Volume 6, Part 8, Annex 1.2 Landscape and Visual Impact Assessment.</p>



	<p>the natural environment. The need for new development to conserve and enhance the historic environment is covered in Chapter 16 of the NPPF.</p>	<p>Designated sites, protected species, and habitats and other species identified as being of importance for the conservation of biodiversity, are identified in Volume 6, Part 8, Annex 1.3 EclA and Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment.</p>
<p>Govt Circular 06/05</p>	<p>This circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It includes sections related to internationally designated sites, nationally designates sites, habitats and species as well as other duties by planning authorities</p>	<p>The relevant provisions of the Habitats Regulations (which implement the EC Directives in the UK) are addressed in the RIAA at Volume 5, Annex 5.4 Report to Inform Appropriate Assessment.</p> <p>The requirements of the Govt Circular are summarised in Table 41 of Volume 6, Part 3, Chapter 4: Onshore Biodiversity and Nature Conservation.</p> <p>Designated sites, protected species, and habitats and other species identified as being of importance for the conservation of biodiversity, are identified in Section 3.4 of Annex 1.3 EclA. Effects upon important ecological features are assessed in Sections 6 and 7 of Annex 1.3 EclA.</p>
<p>Local Planning Policy</p>		
<p>East Suffolk Council Suffolk Coastal Local Plan Adopted September 2020</p>	<p>Policy SCLP3.4: 'Proposals for Major Energy Infrastructure Projects' states that proposals for major energy infrastructure projects across the plan area, and the need to mitigate the impacts arising from these will have regard to the following policy requirements, including:</p> <p><i>d) Requirement for a robust Environmental Impact Assessment</i></p> <p><i>e) Requirement for a robust Habitats Regulations Assessment;</i></p> <p><i>f) Requirement for a robust Heritage Impact Assessment;</i></p> <p><i>g) Requirement for robust assessment of the potential impacts on the Suffolk Coast and Heaths Area of Outstanding Natural Beauty;</i></p> <p><i>h) Appropriate flood and erosion defences, including the effects of climate change are incorporated into the project to protect the site during the construction, operational and decommissioning stages; and</i></p> <p><i>n) Appropriate monitoring measures during construction, operating and decommissioning phases to ensure mitigation measures remain relevant and effective.'</i></p> <p>Policy SCLP10.3: 'Environmental Quality' requires development proposals to protect the quality of the environment and to minimise and, where possible, reduce all forms of pollution and contamination.</p> <p>Policy SCLP10.4: 'Landscape Character' states that development proposals will be expected to demonstrate their location, scale, form, design and materials will protect and enhance:</p> <p><i>a) The special qualities and features of the area;</i></p> <p><i>b) The visual relationship and environment around settlements and their landscape settings;</i></p> <p><i>c) Distinctive landscape elements including but not limited to watercourses, commons, woodland trees, hedgerows and field boundaries, and their function as ecological corridors;</i></p> <p><i>d) Visually sensitive skylines, seascapes, river valleys and significant views towards key landscapes and cultural features; and</i></p>	<p>Designated sites, protected species, and habitats and other species identified as being of importance for the conservation of biodiversity, are identified in Section 3.4 of Annex 1.3 EclA. Effects upon important ecological features are assessed in Sections 6, 7 and 8 of Annex 1.3 EclA.</p> <p>A Habitats Regulation Assessment (HRA) is included at Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment. The Landscape and Visual Impact Assessment at Volume 6, Part8, Annex 1.2 considers the potential impacts of the proposed development on the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB).</p> <p>The potential environmental effects of the proposed development have been considered from the early stage of the project, by experienced environmental consultants. The potential impacts are set out in Section 2 of this chapter and supporting annexes. In summary, no likely significant effects are anticipated on air quality, landscape, flood risk, cultural heritage, traffic, or noise.</p> <p>Fuels and oils would be stored and handled in accordance with best practice, to minimise the risk of spills causing contamination to land or water. Works would be limited to daylight hours; therefore, no artificial lighting would be required.</p> <p>As required by Policy SCLP10.4, the application is supported by a Landscape and Visual Impact Appraisal), set out at Volume 6, Part 8, Annex 1.2. A summary of the LVIA is set out in paragraphs Section 1.11 of this chapter.</p> <p>The potential impacts of the development on archaeology and cultural heritage have been considered by Wessex Archaeology and set out in Section 1.11. As it is considered that there is no potential for harm to the heritage significance of cultural heritage receptors or below ground archaeological remains, the proposed development is considered to meet the requirements of Policy SCLP11.7.</p>



e) *The growing network of green infrastructure supporting health, wellbeing and social interaction.*

Biodiversity and Geodiversity is covered by Policy SCLP10.1, which states that:

'Proposals that will have a direct or indirect adverse impact (alone or in-combination with other plans or projects) on locally designated sites of biodiversity or geodiversity importance, including County Wildlife Sites, priority habitats and species, will not be supported unless it can be demonstrated with comprehensive evidence that the benefits of the proposal, in its particular location, outweighs the biodiversity loss'.

Where compensatory habitat is created, it should be of equal or greater size and ecological value than the area lost as a result of the development, be well located to positively contribute towards the green infrastructure network, and biodiversity and/or geodiversity and be supported with a management plan. Where there is reason to suspect the presence of protected UK or Suffolk Priority species or habitat, applications should be supported by an ecological survey and assessment of appropriate scope undertaken by a suitably qualified person.

Any development with the potential to impact on a Special Protection Area, Special Area for Conservation or Ramsar site within or outside of the plan area will need to be supported by information to inform a Habitat Regulations Assessment, in accordance with the Conservation of Habitats and Species Regulations 2017, as amended (or subsequent revisions)'.

The planning application is supported by an Ecological Impact Assessment (EclA) at Volume 6, Part 8, Annex 1.3 and a Habitat Regulations Assessment (HRA) at Annex 1.4.



1.4 CONSULTATION

- 1.4.1 Engagement with stakeholders has been ongoing since June 2023 with Section 42 comments from Natural England and the RSPB in regard to LBBG compensation, followed up by the Expert Topic Group (ETG) in August 2023.
- 1.4.2 Following the ETG, VE have been in regular contact with Natural England and had several meetings with the RSPB to help progress the compensation measures. The Orford Ness site went out to public consultation in December 2023 and this process was completed at the end of January 2024, including meeting with local councils. The Applicant issued the HRA Compensatory Sites for LBBG Consultation Document, to targeted landowners, in December 2023. The purpose of this Stage 3 targeted consultation was to seek feedback on the proposed compensation sites and compensation measures.
- 1.4.3 Four potential compensation sites (VE1, VE2, VE3 and VE4) were identified. The responses to the targeted consultation have been circulated to the VE technical teams. These have been taken into account during the preparation of the documents for the proposed LBBG compensation scheme. Volume 5, Report 5, Annex 5.3: LBBG Compensation – Evidence, Site Selection & Roadmap provides further detail on the consultation process and development of the compensation area scheme. It also provides more detail on the sites that were identified by the Applicant for LBBG compensation, within the site selection process. This chapter assesses the chosen site taken forward following consultation feedback.
- 1.4.4 The Applicant has sought to progress and secure the compensation measure as much as possible prior to the submission of the application. This has been progressed via the offshore ornithology ETG and meetings with Natural England and other relevant stakeholders. Ongoing engagement on the delivery of ornithological compensation measures would be undertaken through a steering group, the “Offshore Ornithology Engagement Group” (OOEG).
- 1.4.5 The OOEG will be consulted on any final site refinement, implementation, monitoring, reporting and maintenance of the compensation measure, and any other relevant matters as determined by VE. It is envisaged that core members of the OOEG will be the relevant SNCBs, as well as the local planning authority and owners and/or managers of the sites at which predator fencing is planned to be implemented. RSPB and other relevant parties will also be invited to form part of the OOEG in an advisory capacity. For the Orford Ness site, the Applicant would coordinate with the East Anglia and Norfolk Projects, where required. Following consultation with the OOEG, the Applicant will produce a final LBBG Implementation and Monitoring Plan (LIMP), in accordance with the Outline LIMP submitted with this DCO application (Volume 5, Report 5, Annex 5.6).
- 1.4.6 Table 1.2 below provides a comprehensive summary of the relevant comments received from consultation, relating to environmental effects at the selected site, and the Applicant’s response to those comments.



Table 1.2 Summary of consultation relating to LBBG compensation area

Date and Consultation phase/type	Consultation and key issues raised	Section where key provisions addressed/Project Response
<p>Stage 3 Targeted Habitats Consultation – January 2024 East Suffolk Council 7th February 2024</p>	<p>Coastal Processes: <i>“Flood risk should be fully assessed at the selected habitat improvement site(s) as this has the potential to directly impact the success of the compensation measures put in place. In terms of climate change, the possible risks introduced through rising sea levels and increased storminess should also be factored into site selection.”</i></p> <p>Onshore Archaeology & Cultural Heritage: <i>“ESC’s Principal Design and Heritage Officer consulted Historic England’s mapping service in reference to designated heritage assets at Orford Ness (listed buildings and Scheduled Monuments) of which there are many. He advised that the proposed compensatory site locations are at some distance from these designated heritage assets and therefore does not envisage there being any adverse setting impacts arising from the predator exclusion fencing, despite its potential visual impact on that open landscape.”</i></p> <p>Landscape <i>“ESC’s Principal Landscape Officer raised initial concerns over the prospect of additional fencing being introduced at Orford Ness noting the recent predator-proof fencing installed in that area for other offshore wind farm compensation measures (ESC application reference DC/22/3447/FUL). However, having reviewed the consultation materials, it was acknowledged that the described fencing is expected to have a relatively low visual impact if seen over a long distance.”</i></p> <p>Ecology and Biodiversity <i>“A Construction Environment Management Plan (CEMP) will be needed. A predator/undesirable species removal plan will also be required. ESC notes that the Applicant is proposing to set up an Offshore Ornithology Engagement Group (OOEG).”</i> <i>“given the existing, similar, compensation scheme already in place for Norfolk Projects (DC/22/3447/FUL), it is strongly recommended that monitoring efforts are co-ordinated”</i></p> <p>Noise and Vibration & General <i>“fence posts would be pushed into the ground avoiding the need for piling or hammering and construction noise would therefore be limited. This approach should also be applied should the proposals progress. Additionally, any plant and construction vehicles could pose a risk of introducing potential contaminants through airborne pollution, accidental fuel spills and/or leaks. It is recommended that best practice measures should therefore be adopted by the Applicant to ensure no likely significant effects related to potential pollution and/or contamination are introduced.”</i></p> <p>Traffic and Transport <i>“ESC supports this update ... vehicular access from the northern (Slaughden) end of the Ness is no longer possible resulting in all construction materials/personnel needing to gain access via boat at Orford Quay.”</i></p>	<p>The potential impacts of the proposed predator exclusion fence on flooding, ecology, and landscape are discussed in the following supporting annexes:</p> <ul style="list-style-type: none"> > Annex 1.1 Flood Risk Assessment for the LBBG Compensation Area > Annex 1.2 Landscape and Visual Impact Appraisal for the LBBG Compensation Area > Annex 1.3 Ecological Impact Assessment for the LBBG Compensation Area and > Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment > Volume 5, Report 5, Annex 5.3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap <p>Section 1.11 of this chapter confirms that there is no potential for harm to their heritage significance., or below ground archaeological remains.</p> <p>East Suffolk Council consider the site to represent the least visible of the four proposed sites from the footpaths on the west bank of the River Ore.</p> <p>Section 1.11 of this chapter summarises the findings of the LVIA, presented at Annex 1.2</p> <p>A Construction Environment Management Plan (CEMP) will be prepared post consent with final design details to cover the works in the compensation area.</p> <p>East Suffolk Council will be invited to the Offshore Ornithology Engagement Group (OOEG)</p> <p>The issue of predator/undesirable species removal during the construction phase and long term management is set out in Volume 5, Report 5, Annex 5.6: LBBG Implementation and Monitoring Plan.</p> <p>The applicant is prepared to coordinate the monitoring of the compensation site with the Norfolk Projects monitoring to share best management practices.</p> <p>Noise and vibration and all other relevant assessment topics are considered in Section 1.11</p> <p>Access will be solely from Orford Quay, via boat and not from the northern (Slaughden) end of the Ness.</p>
<p>Stage 3 Targeted Habitats Consultation – January 2024 Aldeburgh Town Council 31st January 2024</p>	<p>Maps were included that indicated an intention to access Orfordness Island from the Aldeburgh side of the river: <i>“The path that was highlighted as being under consideration is totally inappropriate: it is a fragile, very narrow shingle ridge sea defence with no pedestrian or vehicle access to Orfordness Island.”</i> <i>We welcome your acknowledgement that the negative impact on this qualifying feature of the Alde Ore Estuary Special Protection Area (SPA) cannot be avoided and that compensation is required.”</i></p>	<p>The Applicant has confirmed that there will be no access to the site from Slaughden. Access will only be by boat, from Orford Quay. see Volume 5, Report 5, Annex 5.3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap for further details.</p>



Date and Consultation phase/type	Consultation and key issues raised	Section where key provisions addressed/Project Response
Stage 3 Targeted Habitats Consultation – January 2024 Alde and Ore Association 31st January 2024	<p>Public access: <i>“The site is surrounded on all sides by public footpaths”</i></p> <p>Site access noted to be difficult from the north, restricted by landowners and no longer accessible by vehicle.</p> <p>Flood defence: <i>“should not have any impact on the existing flood defences of the area bordering the River Alde and Ore.”</i></p>	<p>The selected site is not accessible by members of the public, it is restricted by National Trust (incl. signage to that effect) and by areas of unexploded ordnance. Further detail of the site selection process is available in Volume 5, Report 5, Annex 5.3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap.</p> <p>Access from the north is no longer proposed.</p> <p>The proposed development will have no significant impact on flood defence. Section 1.11 of this chapter summarises the findings of the Flood Risk Assessment, presented at Annex 1.1.</p>
Stage 3 Targeted Habitats Consultation – January 2024 RSPB 31st January 2024	<p><i>“We continue to question siting compensatory measures in locations which expose compensatory birds to collision risks from existing and proposed offshore wind farms.”</i></p> <p><i>“Suitability of the proposed compensation sites, including the assessment of their in situ interest is still to be determined. Further information and assessment is required on the environmental implications of the proposed measures, in terms of possible impacts on the Alde-Ore Estuary SPA and Orfordness-Shingle Street SAC, and constituent SSSIs.”</i></p> <p><i>“No evidence is presented regarding the deliverability of the proposed compensation sites in terms of landowner(s) agreement to their inclusion in the consultation and as potential sites, or the securing of appropriate consents and licences.”</i></p> <p><i>“Landscape impacts and the scale/proposed design of proposed fencing, in an area of high landscape value within the Protected Landscape needs recognition and assessment.”</i></p> <p><i>“VE2 has no record of breeding LBBGs.”</i></p> <p><i>“the compensation measures will need to be in place beyond the lifetime of the VE project.”</i></p>	<p>The proposal has been discussed with Natural England and will be the subject of ongoing discussion through the Offshore Ornithology Engagement Group (OOEG) – including suitability and perceived additionality of the measure</p> <p>A site visit and Ecological Impact Assessment has been undertaken to inform this Chapter, Volume 6, Part 8, Annex 1.3: Ecological Impact Assessment. A Habitats Regulation Assessment has also been undertaken, Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment</p> <p>The case for the proposed measure is presented in Volume 5, Report 5, Annex 5.3: The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap.</p> <p>Detail of the proposed measure and how it will be installed and confirmed as effective is covered in Volume 5, Report 5, Annex 5.6: LBBG Implementation and Monitoring Plan.</p> <p>The compensatory measure will be in place for at least 40 years, reflecting the period of impact from VE bird strikes on LBBG.</p>
Stage 3 Targeted Habitats Consultation – January 2024 Suffolk County Council 31st January 2024	<p>Public Rights of Way: <i>“concerned about the effects the proposals could have on public rights of way and their amenity value.”</i></p> <p>Highways <i>“Whilst the traffic related to the habitat creation may be small, the Applicant should recognise the constraints of the local road network and the nature of the area in terms of its importance with regard to public access (PRoW and Quiet Lanes) and tourism.”</i></p> <p>Ecology <i>“applicant to undertake further investigations into this including the floral, avian and invertebrate records.”</i></p>	<p>Section 1.11 of this chapter summarises the findings of the LVIA, presented at Annex 1.2. Noted that the selected site was not of high concern to Suffolk County Council relative to other potential sites put forward at consultation.</p> <p>Section 1.11 of this chapter summarises the findings of the Traffic and Transport assessment</p> <p>The potential impacts on ecology are discussed in Section 1.11 and supporting documents:</p> <ul style="list-style-type: none"> > Annex 1.3 Ecological Impact Assessment for the LBBG Compensation Area and > Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment > Volume 5, Report 5, Annex 5.3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap <p>Detail of the proposed OOEG is provided in Volume 5, Report 5, Annex 5.3: The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap</p>
Stage 3 Targeted Habitats Consultation – January 2024 Alde and Ore Community Partnership	<p>Access: <i>“there is not a flood defence issue in relation to access from Orford Quay.”</i></p>	<p>Volume 5, Report 5, Annex 5.3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap</p>
Stage 3 Targeted Habitats Consultation – January 2024 National Trust	<p>Environmental Assessment</p>	<p>This chapter provides an assessment of the potential environmental impacts of the proposed development.</p>



Date and Consultation phase/type	Consultation and key issues raised	Section where key provisions addressed/Project Response
31st January 2024	<p><i>“take into account the effects on the environment including wildlife, landscape and cultural heritage including the cumulative effects of similar schemes impacting related species and landscapes.</i></p> <p>Status of National Trust Land</p> <p><i>“The National Trust owns the majority of Orford Ness. Two of the potential sites identified (VE2 and VE3) are National Trust owned land. Given that these form part of a public consultation, the Trust is disappointed that it has not been contacted to discuss the proposals before the sites were selected.”</i></p> <p><i>Where the National Trust considers its landholding to be of significant historic interest and/or natural beauty, it can designate such land as ‘inalienable’ pursuant to section 21(2) National Trust Act 1907. The land owned by the National Trust at Orford Ness has been declared inalienable.”</i></p> <p>LBBG Compensation Proposals</p> <p><i>“The National Trust has some concerns about the appropriateness of the compensation proposal and its likely success. Including, but not limited to, the size of the sites, site selection, compensation calculation, collision risk from Suffolk coast offshore windfarms, food availability, monitoring and reporting.”</i></p>	<p>Details of the site selection process are provided in Volume 5, Report 5, Annex 5.3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap</p> <p>The Applicant has undertaken initial landowner engagement. Agreements were also secured for initial site suitability and habitat surveys to take place.</p> <p>The Applicant will submit a planning application to secure voluntary land agreements, and also included the site in the DCO order limits and assessments to allow compulsory acquisition powers to deliver the measures.</p> <p>A follow up meeting is being scheduled with National Trust to discuss their concerns</p>
Stage 3 Targeted Habitats Consultation – January 2024 Natural England 31st January 2024	<p><i>“welcome the Project’s commitment to avoid accessing the Orford Ness habitat improvement sites from the north via Aldeburgh.”</i></p> <p><i>“it will be necessary to design the fenced areas in a way that does not affect the special qualities of the AONB and Heritage Coast.”</i></p>	<p>The site selection process is detailed in Volume 5, Report 5, Annex 3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap.</p> <p>Section 1.11 of this chapter summarises the findings of the LVIA, presented at Annex 1.2.</p>
Stage 3 Targeted Habitats Consultation – January 2024 Dedham Vale and Suffolk & Essex Coast & Heaths National Landscapes Team 31st January 2024	<p><i>“The creation of Lesser Black Backed Gull mitigation measures should not have a negative impact on the Alde-Ore Estuary SPA, or the defined qualities of the Suffolk & Essex Coast & Heaths National Landscape.”</i></p> <p><i>“the ‘compensatory’ birds produced would be at risk from the proposed Five Estuaries offshore wind farm and other existing and proposed offshore wind farms”</i></p> <p><i>“The habitat creation option should explicitly be expanded to include habitat restoration as this is likely to have a greater chance of more predictable success for Lesser Black Backed Gulls than new habitat creation.”</i></p> <p><i>“Impacts in the proposed locations VE1, VE2 and VE3 are less likely to have a significant impact on the nationally designated landscape given the association with the military in these locations.”</i></p> <p><i>“consult and consider the Selection and Use of Colour in Development document when designing the predator fencing.”</i></p>	<p>The site selection process is detailed in Volume 5, Report 5, Annex 3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap.</p> <p>The potential impacts on ecology are discussed in Section 1.11 and supporting documents:</p> <ul style="list-style-type: none"> > Annex 1.3 Ecological Impact Assessment for the LBBG Compensation Area and > Volume 5, Annex 5.4.5: Lesser Black Backed Gull Compensatory Area Habitats Regulation Assessment > Volume 5, Report 5, Annex 5.3 The Lesser Black-Backed Gull Compensation – Evidence, Site Selection & Roadmap <p>Section 1.11 of this chapter summarises the findings of the LVIA, presented at Annex 1.2.</p>
Stage 3 Targeted Habitats Consultation – January 2024 HSE 14th December 2023	<p><i>“The revised site doesn’t introduce any HSC sites.”</i></p> <p><i>“there are no HSE explosive licenced sites in the vicinity of the proposed development.”</i></p>	Noted
Stage 3 Targeted Habitats Consultation – January 2024 Historic England 19th December 2023	<p><i>“this is an area of high sensitivity for the historic environment and therefore your proposed compensation areas need to be included in your over assessment of impact with regards to the historic environment within the ES.”</i></p>	Section 1.11 of this chapter includes an assessment of the archaeology and cultural heritage.



1.5 RELATIONSHIP TO THE WIDER ENVIRONMENTAL STATEMENT

- 1.5.1 The overarching Environmental Statement (ES) for the DCO presents the results of the Environmental Impact Assessment (EIA) for the potential impacts of VE during the construction, operation and maintenance (O&M), and decommissioning phases.
- 1.5.2 This chapter is restricted to an assessment of the potential impacts of the construction, O&M and decommissioning phases of the LBBG compensation area, required to compensate for the predicted worst-case impacts of VE on this species, in relation to Habitats Regulation Assessment.

1.6 SCOPE AND METHODOLOGY

- 1.6.1 The assessment scope has been informed by relevant national and local planning policy and guidance, established best practice and experience, as well as via the consultation process with key stakeholders (Table 1.2).
- 1.6.2 This chapter and supporting annexes seek to:
- > Establish baseline conditions and identify important ecological features present (or those that could be present);
 - > Identify important ecological features that could be impacted by the proposed development;
 - > Identify potential effects and their significance; and
 - > Provide details of proposed mitigation and controls, (noting that at this stage some of the recommendations are outline).

1.7 ASSESSMENT OF EFFECTS

- 1.7.1 Throughout this document, the term 'impact' is used to define a change to the receiving environment resulting from a project 'action', this can be direct, indirect, secondary, cumulative, inter-related or transboundary. It may also be adverse, beneficial or result in no change at all. Impacts are described in relation to the receiving environment, which is described as the receptor (or series of receptor groups). The result of an impact on a receptor is termed the 'effect.' For example: pile driving during construction (action) may result in a temporary increase in noise levels during construction (impact) and cause birds (receptors) to experience temporary disturbance (effect).
- 1.7.2 Within the EIA, effects are described in terms of their 'significance', which takes into account the 'magnitude' of an impact, combined with the 'sensitivity' of the relevant receptors to the impact, in line with defined criteria. The following sections describe these steps in more detail, and it should be noted that each topic chapter describes the specific criteria for that topic, as well as where and why there are any deviations following industry best practice guidance.
- 1.7.3 As set out in various widely used methodologies (e.g., Design Manual for Roads and Bridges (DMRB) (Highways England, 2020) and the British Standards Institute (BSI) PD 6900: 2015 Environmental Impact Assessment for Offshore Renewable Energy Projects – Guide (BSI, 2015)), most technical topics will assess the likely significance of an effect using the methods described in the sections below and using the matrix illustrated in Table 1.3.



- 1.7.4 The standard methodology used across the EIA is intended to be overarching guidance to technical authors. This provides a consistent approach with comparative results; whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement.

ASSESSING THE MAGNITUDE OF IMPACT

- 1.7.5 The magnitude of an impact depends on a range of important factors:
- > Spatial extent – the geographical extent over which the impact occurs. For example, is the impact spatially limited to the footprint of the project, or are there other factors that extend the impact beyond this?
 - > Temporal extent – the duration over which the impact occurs. For example, is this limited to a brief construction period or will the impact occur over the lifetime of the project?
 - > Frequency of occurrence – is the impact limited to one occurrence or will it occur repeatedly over the duration of the project?
 - > Severity – what is the expected degree of change relative to the baseline?
- 1.7.6 Based on the criteria above, the magnitude of an impact is assessed as being within one of the groups below, and is also assigned a direction of 'adverse' or 'beneficial':

ASSESSING THE SENSITIVITY OF RECEPTORS

- 1.7.7 The sensitivity of a receptor, or group of receptors, is dependent on its tolerance to change and its ability to recover from being impacted. The sensitivity of a receptor can therefore be determined by the following factors:
- > Adaptability – the degree to which a receptor can avoid or adapt to an impact;
 - > Tolerance – the ability of a receptor to accommodate a temporary or permanent change;
 - > Reversibility and recoverability – the extent to which a receptor will recover following an impact; and
 - > Value and importance – a measure of the importance of a receptor in terms of its relative ecological, social or economic value or status.
- 1.7.8 The sensitivity of a receptor is defined within each topic on the following scale:
- > Negligible;
 - > Low;
 - > Medium; or
 - > High.
- 1.7.9 Each topic area annex contains information on how the sensitivity is determined for its receptors based on topic-specific criteria.
- 1.7.10 Where topic-specific methodology is used, following industry guidance, this is clearly explained within the topic assessment.



DETERMINING THE SIGNIFICANCE OF EFFECTS

- 1.7.11 The significance of an effect, either adverse or beneficial, is determined using a combination of the impact magnitude and receptor sensitivity. A matrix approach is used throughout the EIA to ensure a consistent and comparable approach. The terms assigned to categorise the significance of effects are described in Table 1.3, which also illustrates the assessment matrix for determining effect significance. The impact magnitude is combined with the receptor sensitivity to determine the significance of effect.
- 1.7.12 Any effect that is concluded to be of moderate or major significance is deemed to be 'significant' in EIA terms. Effects concluded to be of negligible or minor significance are deemed to be 'not significant' in EIA terms.
- 1.7.13 Where an alternative topic-specific methodology is used, following industry guidance, this is clearly explained within the topic assessment.

Table 1.3 Deriving the level of significance of an effect

		Sensitivity				
		High	Medium	Low	Negligible	
Magnitude	Adverse	High	Major	Major	Moderate	Minor
		Medium	Major	Moderate	Minor	Negligible
		Low	Moderate	Minor	Minor	Negligible
	Beneficial	Negligible	Minor	Minor	Negligible	Negligible
		Low	Moderate	Minor	Minor	Negligible
		Medium	Major	Moderate	Minor	Negligible
	High	Major	Major	Moderate	Minor	

1.8 UNCERTAINTY AND TECHNICAL DIFFICULTIES

- 1.8.1 The ecological field survey was undertaken in January and therefore outside the optimal season for habitat and botanical surveys. Species that are present at other times of the year may not have been present and the identification of others may have been hampered by the lack of flowers or living parts. Species and vegetation community identification is therefore putative. The presence of fungi, lichens and mosses were noted; however, these were not identified to species level.

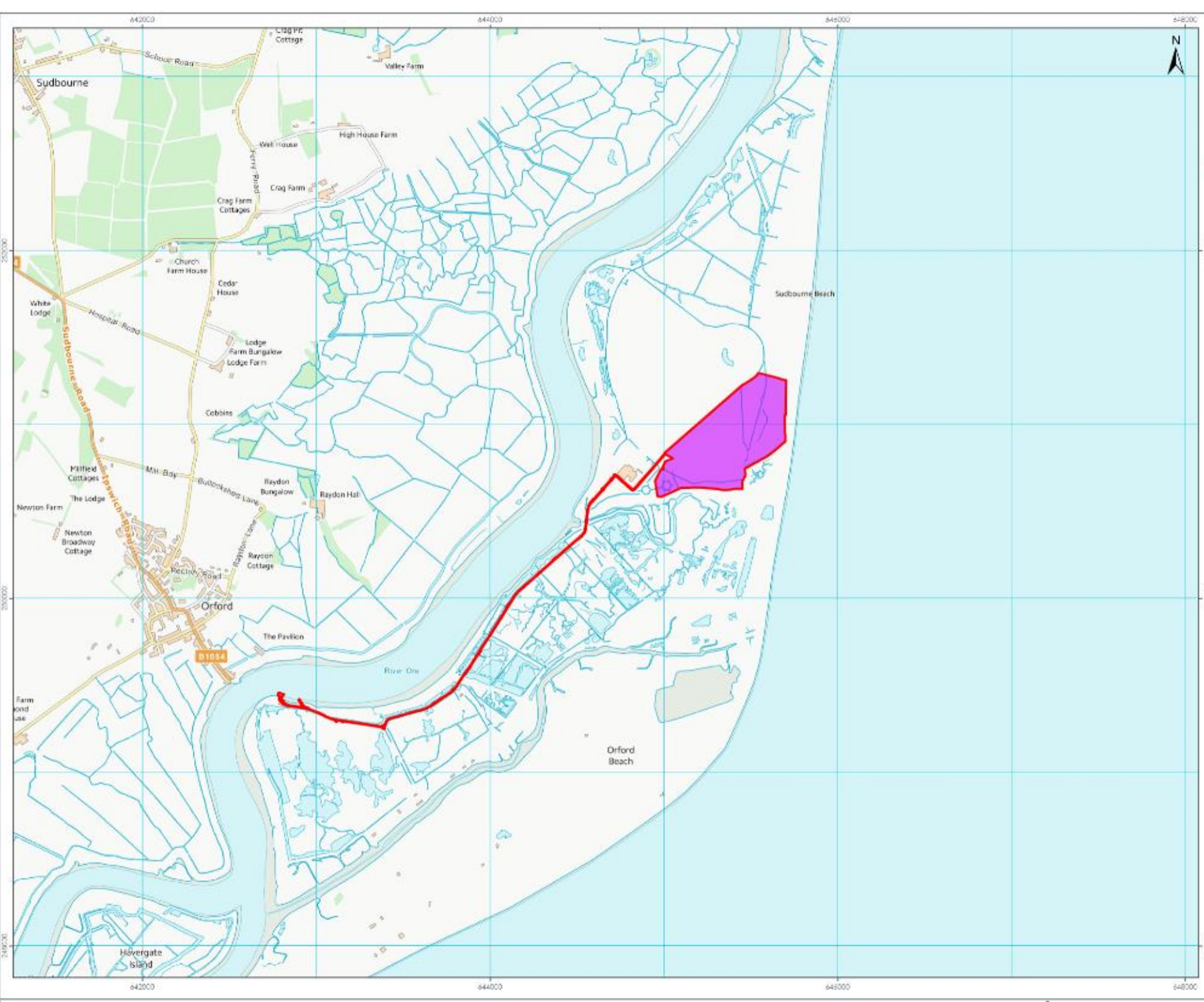


BASELINE DATA COLLECTION

- 1.8.2 Baseline data collection has been undertaken by a combination of desk study and field survey as described in Section 2 of Annex 1.3 Ecological Impact Assessment.
- 1.8.3 The desk based study collated existing information on the designated sites and habitats present within the proposed compensation site and 2km from its boundary. This included a review of the information on MAGIC, Natural England's designated sites viewer and reports prepared by MacArthur Green and Royal Haskoning DHV with respect to similar works at Orford Ness, associated with the Norfolk Projects Offshore Wind Farms.
- 1.8.4 The field survey was conducted on 11th January 2024. The survey focused on the fence line but included the area proposed to be included in the fence and just outside. During the survey, the vegetation communities present in accordance with the Annex I (EC 2013), UKBAP priority habitats (BRIG. 2011) and vegetated shingle classification systems (Sneddon and Randall 1993) were identified and mapped as far as possible (see limitations), as were the habitats of the qualifying interest species of designated sites, insofar as these are known/ published. Observations of any other species were also recorded.

1.9 LOCATION OF THE PROPOSED COMPENSATION AREA

- 1.9.1 Following the site surveys carried out in December 2023, and consultation with landowners and stakeholders, set out in Table 1.2, the site selection was reduced to one prime site. The site was chosen due to its accessibility, habitat, connectivity to roof nesting LBBG and the Norfolk Projects compensation site. Figure 2-1 presents the area submitted within the Order Limits.
- 1.9.2 The proposed area has been selected for the proposed implementation of compensation, based on the following criteria:
- > A site with connectivity to existing LBBG colonies at Orford Ness and Havergate Island;
 - > Suitable habitats that will require minimal/ moderate management; and
 - > Sites which have known predation and/ or disturbance issues and would benefit from measures to reduce these pressures.



- LEGEND**
- Proposed Red Line Boundary
 - Proposed LBBG Compensation Option Area

240000 240000 240000 240000 240000



PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
Proposed LBBG Compensation Option Area

REV	DATE	ISSUED BY	STATUS	CHECKED BY
1	17/01/2024	For Information	RFMS	MA

DRAWING NUMBER: 1

TITLE: 100000 100000 100000 100000 100000





- 1.9.3 A similar compensation project for Norfolk Vanguard and Boreas Projects has been established on the AOE SPA, to the south of the of VE2 site. That site was deemed suitable for the following reasons:
- > The habitat at the site was reported to be very similar to that used by breeding LBBG when the SPA population was at its peak; and
 - > The proximity of breeding LBBG on the roof of nearby buildings was noted as an important feature for rapid colonisation after the construction of the predator exclusion fence.
- 1.9.4 The area within the Order Limits includes the Norfolk Projects compensation area to enable potential connectivity or coordinated management. Any such approach would be subject to the agreement of the relevant OWF projects.
- 1.9.5 The proposed area sits within the following designations:
- > Alde-Ore Estuary Special Protection Area (SPA)
 - > Orfordness-Shingle Street Special Area of Conservation (SAC)
 - > Alde-Ore Estuary Ramsar
 - > Alde-Ore Estuary Site of Special Scientific Interest (SSSI)
 - > Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB).
- 1.9.6 There are no statutory heritage designations within 1km of the site, but a number are located within 3km, including the following:
- > Orfordness: Bomb Ballistics building (Grade II listed)
 - > Orfordness Light House (Grade II listed)
 - > Orfordness: The Black Beacon (Grade II listed)
 - > Orford Ness: The Atomic Weapons Research Establishment Test Buildings and Associated Structures (Scheduled Monument)
 - > The Site is entirely within Flood Zone 3b, which has a high probability of flooding from the sea.
- 1.9.7 Further detail on the ecological evidence for these compensation measures and the preliminary site selection process is provided in Volume 5, Report 5, Annex 3: Lesser Black-Backed Gull Compensation – Evidence, Site Selection and Roadmap “

1.10 PROPOSED DEVELOPMENT

- 1.10.1 The proposal comprises the installation of a 1.8 to 2.0m high, wire mesh fence, surrounding the compensation area within the site to deter foxes and other predators and create a predator free area, within which the LBBG can breed. An example of the type of fencing that would be used is provided in Figure 1.2.
- 1.10.2 The design of the fence will be in accordance with Royal Society for the Protection of Birds (RSPB) guidance on mammal exclusion fencing (White and Hirons 2019) and is subject to approval by the Secretary of State as part of Volume 5, Report 5, Annex 5.6: LBBG Implementation and Monitoring Plan, which will be updated and made final post consent. The main design details of the proposed fence are described below:
- > Between 1.8m and 2.0m in height;
 - > Wire mesh fencing with a suitable gauge (to prevent foxes from chewing through);



- > At least 60cm fence “skirt” at the base of the fence, folded and buried horizontally at a depth of 15cm;
- > If any areas of the fence cross water, this will include mesh to the channel bed to prevent predator access e.g. otter;
- > Overhanging top of at least 30cm at a 45° angle;
- > Non-electrified (electric fence may be used as an adaptive measure); and
- > Access gates will be installed to allow for vegetation management within the exclusion area.



Figure 1.2 Example Predator Exclusion Fence

- 1.10.3 Predator exclusion fencing can be an effective conservation measure for LBBG; past studies have shown that nest survival rate can increase when reducing chick predation. For example, Davis *et al.* (2018) showed that LBBG productivity increased in areas with exclusion fencing (to exclude foxes). Nest survival was high in both fenced and unfenced areas, which suggests that the installation of exclusion-fencing at the colony increases survival at the chick (rather than nest) stage.
- 1.10.4 More widely, there is clear evidence of predator-proof fencing being an effective seabird conservation measure, including for the protection of multiple petrel shearwater and albatross species across New Zealand, Hawaii, and Portugal (Cooper, 2013).
- 1.10.5 There is also precedent for the use of predator fencing as a compensation measure for predicted offshore wind impacts on LBBG in the UK. Norfolk Boreas, Norfolk Vanguard, East Anglia One North and East Anglia Two are delivering improved (New Zealand-Style) predator fencing in AOE SPA as compensation for their predicted impacts on lesser black-backed gulls at that SPA (MacArthur Green and Royal Haskoning DHV, 2022).



- 1.10.6 The land rights required to secure the compensation area would be sought voluntarily, however, to ensure the measure could be delivered the Applicant is applying for compulsory acquisition powers over the land, subject to the National Trust's inalienable rights

CONSTRUCTION AND ACCESS

- 1.10.7 The proposed method of construction would include use of a small excavator to remove 50-100mm of topsoil along the line of the fence, to create a 1m wide corridor. Steel fence posts would be inserted (hydraulically pressed) into the ground at regular intervals (approximately 3m apart). No foundations are required for the fence posts and no percussive piling or hammering would be needed. Following installation of the fence posts, the mesh fencing would be rolled out and attached to each fencepost and a 600mm skirt of fencing would be folded into the 1m corridor and secured into place with pegs. The topsoil would be replaced on top of the skirt and levelled.
- 1.10.8 Fence installation and any installation works would be expected to take around three weeks, with up to six personnel onsite. All work would be undertaken outside of the bird nesting period.
- 1.10.9 Site access to proposed area during the installation would be by vessel from Orford Quay, across the River Ore to an existing boat landing and then along existing tracks to the site. Fencing materials, machinery and plant would be transported from the boat landing to the site using standard low loaders. A dump truck may also be required, to aid in the movement of soil.
- 1.10.10 An area of hard standing is present adjacent to the proposed fence alignment, which may be used for a temporary laydown and placing temporary welfare for the duration of the fence installation works. Alternatively, a temporary laydown area may be formed elsewhere within the site. The temporary laydown area and welfare unit will be removed after completion of the construction phase.
- 1.10.11 A Construction Method Statement and details of the associated vehicular and pedestrian access will be submitted for approval to the relevant planning authority, under Requirement 20 of the DCO.

HABITAT REQUIREMENTS

- 1.10.12 LBBG nest in colonies in a range of habitats, though generally showing a preference for flat, level-ground that is covered by close, short vegetation. A key factor in suitable nest locations is the availability of suitable shelter, reducing exposure to extreme weather and predators (Partridge, 1978). LBBG often nest under bracken (*Pteridium* sp), burdock (*Articum* sp), heather (*Calluna* sp), and nettle (*Urtica* sp).
- 1.10.13 Specifically, intermediate and tall vegetation has been shown to be important in providing the optimal nest microclimate for breeding LBBG (Kim and Monaghan, 2015). Their natural habitats can range from flat open ground to sand dunes, rocky offshore islands, high moorland, and ledges on cliff faces.
- 1.10.14 Creating or restoring suitable nesting habitat will help increase LBBG breeding site availability. It can help create new breeding habitat in areas where LBBG have not nested previously but could also restore breeding habitat that was lost when previous site use has resulted in overgrown vegetation (Ross-Smith, 2014).



- 1.10.15 Ross-Smith *et al* (2015) outline the benefit for LBBG of providing a mixture of open ground and shelter, whilst avoiding the presence of taller, denser vegetation which prevents birds flying or walking in or out.
- 1.10.16 Such habitat creation/ improvement could be delivered across a wide range of LBBG habitat types. Existing techniques that would align with LBBG nesting requirements include:
- > Grassland improvement – partial mowing (sward management) of areas of grassland to create height diversity throughout the area, to encourage the availability of both open ground for nesting, and higher vegetation for shelter;
 - > Sand dune restoration – the removal of scrub and trees (e.g. willow, gorse) to ensure an open vegetation profile for nesting is maintained; and
 - > Moorland restoration – e.g. the removal of scrubs and trees on moorland or areas of coastal heather to prevent succession and maintain suitable low, open breeding ground for breeding LBBG.
- 1.10.17 There is precedent for the use of habitat creation within compensation plans for offshore windfarm impacts. The Norfolk Projects Offshore Wind Farms (Norfolk Boreas, Norfolk Vanguard), as part of their predator fencing work, plan to carry out vegetation cutting to create suitable sward height (within areas around which predator fencing will be installed), and further habitat management options are included in the adaptive management plans (MacArthur Green and Royal Haskoning, 2022a).

MONITORING, MANAGEMENT AND MAINTENANCE

- 1.10.18 Volume 5, Report 5, Annex 5.6: LBBG Implementation and Monitoring Plan (LIMP) outlines the proposed adaptive management measures which will be developed in due course and form part of the final LIMP post consent. This will be progressed in consultation with an Offshore Ornithology Engagement Group (OOEG) made up of key stakeholders including Natural England.
- 1.10.19 The fence will be maintained for the lifetime of the wind farm (assumed to be at least 40 years) Inspections, routine maintenance and repair of the fence will be conducted as required and as set out the in the LBBG Implementation and Monitoring Plan (Volume 5, Report 5, Annex 5.6). Habitat management will be undertaken-as required within the enclosure. This will comprise cutting vegetation with a strimmer and removing the arisings to create a mosaic of short and long sward heights, to create optimum nesting habitat for LBBG. It is likely to take up to 10 days per year, depending on the quantity of vegetation to be removed.
- 1.10.20 Access during operation will use the same routes identified above for construction as shown in Figure 1.1. Routine maintenance visits will be necessary to check the condition of the fencing and to ensure that materials have not become caught in the fence.



- 1.10.21 Prior to the completion of the fencing, a mammal survey will be undertaken to ensure none are present inside the predator exclusion area. Mammal monitoring will be conducted throughout the year to ensure there are no breaches of the fence and its intended purpose remains effective. Various methods of surveying will be deployed including camera traps, sand traps as well as vantage point surveys at day and night (utilising night vision binoculars). The monitoring will be less intensive during the non-breeding season.
- 1.10.22 If mammals are detected in the enclosure, then steps will be taken to ensure a fast and safe removal. The protocol will be discussed with the OOEG.
- 1.10.23 Monitoring of LBBG nests will be carried out annually, by a qualified ornithologist during the breeding season, to record the success of the nests and confirm and ensure that the compensation measure is working as required. This would include counts of the number of birds, the number of occupied nests, and the number of eggs/ chicks visible.
- 1.10.24 Full details of the proposed Monitoring are set out in Volume 5, Part 5, Annex:6: LBBG Implementation and Monitoring Plan. This has been developed in consultation with the ETG and specific meetings with both Natural England and the RSPB.

DECOMMISSIONING

- 1.10.25 At the end of the operational lifetime of the wind farm, the fencing will be either removed (with approval from the Secretary of State) or maintained by the Applicant or a third party.

IMPLEMENTATION TIMETABLE

- 1.10.26 It is planned that these compensatory measures will be completed three years before the completion of the construction phase of VE. Therefore, this site will potentially receive a net benefit of the proposed compensation measure before VE becomes operational.

1.11 ENVIRONMENTAL ASSESSMENT

INTRODUCTION

- 1.11.1 The following section provides an list of the environmental topics that have been considered in regard to the construction, operation and decommissioning of the proposed development on the site. These topics are in line with those assessed in the wider ES (Volume 6, Part 3, Onshore ES) and are as follows:
- > Landscape and Visual Impact (a Landscape and Visual Impact Assessment has been undertaken and is provided at Annex 1.2);
 - > Onshore Archaeology & Cultural Heritage;
 - > Hydrology & Flood Risk (a Flood Risk Assessment has been undertaken and is provided at Annex 1.1 of this chapter);
 - > Air Quality;
 - > Airborne Noise & Vibration;
 - > Ecology and Biodiversity (an Ecological Impact Assessment (EclA) has been undertaken and is provided at Annex 1.3 of this chapter);
 - > Traffic and Transport;



- > Ground Condition & Land Use;
- > Human Health; and
- > Socioeconomics & Tourism.

LANDSCAPE AND VISUAL IMPACT

- 1.11.2 Due to the site's location in the Suffolk Coast and Heaths AONB and a defined area of the Suffolk Heritage Coast, a Landscape and Visual Impact Assessment (LVIA) has been undertaken. The full LVIA is presented in Volume 6, Part 8, Annex 1.2: Landscape and Visual Impact Assessment.
- 1.11.3 Assessment of the likely effects of the proposed development to landscape and visual impact follows a different methodology to that presented in Section 1.6. This is based on best practice guidance and is described in detail in the LVIA.
- 1.11.4 The LVIA assesses effects as 'minor', 'moderate' or 'major' and intermediate levels may apply. The level of effect is assessed through a combination of two considerations:
- > The sensitivity of the landscape element, landscape character receptor or visual receptor; and
 - > The magnitude of change that will result from the predator exclusion fencing.
- 1.11.5 This evaluation is carried out for each of the receptors described within the baseline section of the LVIA.
- 1.11.6 The high-level report LVIA has considered the potential for effects to arise in respect of the landscape character of the two LCTs which cover the local area of the site, the landscape designation of the Suffolk Coast and Heaths AONB and defined area of the Suffolk Heritage Coast, and the visual amenity of walkers in this area.
- 1.11.7 The conclusion is that the effect on landscape character across the Coastal Dunes and Shingle Ridges LCT, Coastal Levels LCT, Suffolk Coast and Heath AONB, and the Suffolk Heritage Coast will be **not significant** or with no effect across the much wider extent of these landscape receptors. There will be no effect on the visual amenity of walkers in the local area around the site, owing to restrictions on public access.
- 1.11.8 While it is recognised that the predator exclusion fencing will have a localised effect owing to the increase in the extent of fencing in an area of open grassland, these effects will be moderated by the relatively small scale and contained extent of the predator exclusion fencing and the human influences which have already notably altered this landscape. The effects on landscape character and visual amenity will be **not significant**.

ONSHORE ARCHAEOLOGY AND CULTURAL HERITAGE

- 1.11.9 The standard methodology presented in Section 1.6 has been applied to assess onshore archaeology and cultural heritage related effects of the proposed development. Potential impacts of the predator exclusion fencing include direct permanent effects on buried archaeology and the historic landscape character as well as indirect temporary effects upon heritage significance of assets arising from change within the setting.



- 1.11.10 There are a number of known cultural heritage receptors within 3km of the site. Most of these relate to its use by the military and comprise scheduled monuments and Grade II listed structures. The predator exclusion fencing will not be perceptible from those assets and the area in which fencing is proposed is not considered to form part of the setting that contributes to the significance of the assets. Therefore, the construction phase will not affect the ways in which the historic interests of the assets are understood or appreciated and the potential impact on cultural heritage assets is considered to be **negligible and not significant**.
- 1.11.11 Below ground impacts from construction of the fencing would be limited to the insertion of slim metal fenceposts. Due to the small dimensions of the posts these are unlikely to damage or destroy below ground archaeological remains in such a way to reduce their heritage significance. The scrape for the buried fencing skirt will only be excavated to between 50-100mm in depth (and so contained entirely within the topsoil layer) and will not be of sufficient depth to affect below ground archaeological remains. Therefore, the potential effect on buried archaeology during the construction and operation phases is considered to be **negligible and not significant**.
- 1.11.12 During operation, the fencing will not block or inhibit any views between the assets, which will be maintained. It is considered that there is no potential for harm to their heritage significance. Therefore, the potential effect on buried archaeology during the construction and operation phases is considered to be **negligible and not significant**.
- 1.11.13 Potential effects of the decommissioning phase were limited to indirect temporary effects upon heritage significance of assets.
- 1.11.14 On the basis of the baseline environment and the project description, no significant archaeology and cultural heritage impacts have been identified as a result of the decommissioning of the predator fence. Therefore, the potential effect on archaeology and cultural heritage during the decommissioning phase is considered to be **negligible and not significant**.

HYDROLOGY AND FLOOD RISK

HYDROLOGY

- 1.11.15 The standard methodology presented in Section 1.6 has been applied to assess hydrology related effects of the proposed development.
- 1.11.16 The proposals are for installation of a predator exclusion fence around the compensation area, to create a protected area for LBBG breeding. Construction of the fence will include the use of small earthworks machinery to prepare ground for the fence installation. Earthworks will be limited to stripping of topsoil in a 1m width along the line of the fence. Removed soil will be replaced following fence installation and used to tie the skirt of the fence into the ground. Construction of the fence will take place over a period of approximately three weeks.



- 1.11.17 With respect to sensitivity, the proposed site is situated within the following environmentally designated areas which are associated with the water environment:
- > AOE SPA
 - > Orfordness-Shingle Street SAC
 - > Alde-Ore Estuary Ramsar
 - > Alde-Ore Estuary Site of SSSI
- 1.11.18 Land on Orfordness drains into the Alde and Ore transitional and coastal water body which is classified as having a Moderate water quality status. Underlying groundwater within the Waveney and East Suffolk Chalk and Crag water body is classified as having a Poor overall status. There are no known water abstractions within the compensation area and the land is not within any groundwater source protection zones.
- 1.11.19 Potential impacts on the water environment during construction will be limited to the generation of turbid or polluted runoff which could enter the water environment and pollution from chemicals used on site. Sediment entrainment or the mobilisation of chemicals could potentially affect receiving water within the Alde and Ore transitional and coastal water body, and environmentally designated areas. During operation, potential impacts on the water environment would be limited to any maintenance work required on the fence. During decommissioning there would be the potential for impacts similar to the construction phase of work. Chemical spills could potentially affect the underlying groundwater water body.
- 1.11.20 Best practice will be followed (and detailed in a Construction Method Statement to be submitted for approval to the relevant planning authority) to minimise the potential for entrainment of sediments in runoff from disturbed ground. Similarly, procedures will be specified to ensure that the potential for fuel spills and leaks from earthwork machinery is minimised. These measures may include the use of designated storage areas for potential pollutants and machinery, and the appropriate storage of chemicals within these areas. Spill kits will be available on site and close to works areas and water features. Any visual indication of sediment entrainment or spills in water features will be reported as appropriate and investigated.
- 1.11.21 Due to the nature of the proposed works and the limited time period for construction of the fence, any mobilisation of sediment from earthworks will be limited. Similarly, the use of potentially polluting chemicals on site will be limited to fuels and oils for earthworks machinery during the construction phase (or for repairs during the operational phase). The magnitude of potential effects during construction, operation and decommissioning is considered to be **Low** and the sensitivity of the receiving environments are considered to be **Medium**. Potential effects on the water environment are concluded to be **not significant**.

FLOOD RISK

- 1.11.22 As the site is within Flood Zone 3, a Flood Risk Assessment (FRA) has been produced provided in support of the assessment of the proposed development (the FRA is presented in full in Volume 6, Part 8, Annex 1.1: Flood Risk Assessment).



1.11.23 The FRA has been completed in accordance with guidance presented within the National Planning Policy Framework (NPPF) and its associated Planning Practice Guidance (PPG)¹ on flood risk and coastal change, taking due account of current best practice documents relating to assessment of flood risk published by the British Standards Institution BS85333.

1.11.24 The construction, operation, and decommissioning of the fence will not change the surface of the site and is not predicted to increase the risk of flooding to surrounding areas over the development lifetime, there will be no increase in surface water runoff.

1.11.25 The key findings of this FRA are as follows:

- > The site is situated within Flood Zone 3b, which comprises land having a greater than 1 in 20 (5.0%) or greater annual probability of flooding from the sea;
- > The development proposals are classified as water compatible under the guidance set out within the NPPF;
- > The intended lifespan for the development proposals at least 40 years. The applicable tidal climate change allowances have been considered as part of this assessment;
- > The Environment Agency's Coastal Design Sea Levels dataset shows that the primary source of flooding to the site is tidal flooding. The site is shown to experience flood depths of over 3.0m during the 0.5% Annual Exceedance Probability tidal flood event;
- > Given the proposed use, the development proposals are considered to be at low risk of flooding from tidal sources;
- > Assessment of all other potential sources of flooding, indicates a very low risk at the site;
- > Surface water drainage at the site will not change and there will be no new impermeable surface areas added as a result of the development proposals.
- > It is understood that the only access required to the site post construction will be for environmental maintenance workers to cut vegetation over the course of several days every year, and periodic monitoring of nesting success.

1.11.26 In conclusion, based on the information outlined within the FRA, the development would be safe, without significantly increasing flood risk elsewhere over its lifetime. The perceived level of flood risk to and caused by the development proposals is **Low** magnitude, **Low** sensitivity and therefore **Not significant** in EIA terms.

AIR QUALITY

1.11.27 The standard methodology presented in Section 1.6 has been applied to assess air quality related effects of the proposed development.

1.11.28 Air quality impacts during construction will include temporary arisings of dust from construction and emissions from construction-generated road traffic, potentially effecting human and ecological receptors. During operation, air quality impacts would be limited to traffic emissions from personnel making maintenance and monitoring visits.

¹ Flood risk and coastal change guidance. Flood risk and coastal change - GOV.UK, (Published March 2014, Updated August 2022), <https://www.gov.uk/guidance/flood-risk-and-coastal-change>



- 1.11.29 The site is not within a designated Air Quality Management Area (AQMA) and the site's isolated location and restricted public access mean that no significant impacts on human receptors are anticipated during construction. Furthermore, the short term, minor earthworks i.e. topsoil scraping and reinstatement following the fence construction are not anticipated to generate significant amounts of dust. There will be no operational phase air quality impacts and decommissioning impacts will be the same or very similar to construction impacts.
- 1.11.30 The magnitude of effects during construction is considered to be **Low** and the sensitivity is **Medium**. The traffic emissions during all phases would be **negligible**. Air quality effects are concluded to be **not significant**.

AIRBORNE NOISE AND VIBRATION

- 1.11.31 The standard methodology presented in Section 1.6 has been applied to assess noise related effects of the proposed development.
- 1.11.32 Noise will be generated by plant undertaking soil stripping and soil moving. Fence posts will be pushed into the ground, avoiding the need for percussive piling or hammering. There are no residential properties or noise sensitive human receptors close to the site and the fence construction work will be completed in approximately three weeks, between September and February, when very few people would be visiting the surrounding area.
- 1.11.33 Traffic movements will be limited to delivery and construction crew vehicles during the construction and decommissioning phases, and occasional staff vehicles associated with maintenance and monitoring visits during operation.
- 1.11.34 The magnitude of noise effects during construction, operation and decommissioning is considered to be **Low** and the sensitivity is **Medium**. The noise from traffic movements during all phases would be **negligible**. Noise effects are concluded to be **not significant**.
- 1.11.35 Therefore, no likely significant effects related to noise and human or ecological receptors have been identified as a result of the proposed development and noise and vibration effects have not been considered further for the project alone assessment.

TRAFFIC AND TRANSPORT

- 1.11.36 The standard methodology presented in Section 1.6 has been applied to assess traffic and transport related effects of the proposed development.
- 1.11.37 A small number of vehicle movements will arise during the construction of the fence, as a result of materials, plant and equipment deliveries and staff travelling to the site. Following the construction of the fence, vehicle movements will be limited to those bringing staff to undertake maintenance and monitoring visits.
- 1.11.38 Given the short-term nature of the fence construction works and low-level future monitoring and maintenance requirements, the magnitude of impact is considered **Low**, sensitivity is considered to be **Medium** due to the limited potential to effect other users. No traffic disruption or significant traffic and transport effects are considered likely to arise as a result of the installation of the fence. Effects due to traffic and transport are concluded to be **not significant**.



1.11.39 Therefore, traffic and transport has not been considered further for project alone assessment, as there is no potential for significant effects to arise as a result of the proposed development.

GROUND CONTAMINATION AND LAND USE

1.11.40 Assessment of the likely effects of the proposed development to onshore ecology follows a different methodology to that presented in Section 1.6. This is based on best practice guidance and professional judgement and is described in detail in Volume 6, Part 4, Chapter 5: Ground Contamination and Land Use.

1.11.41 There are no published guidelines or criteria for assessing and evaluating effects on ground conditions and land use within the context of an EIA. In the absence of this, the assessment is based on a methodology derived from the Institute of Environmental Management and Assessment (IEMA) guidance, Design Manual for Roads and Bridges (2019) and the Land Contamination Risk Management (LCRM).

1.11.42 Parts of Orford Ness were subject to historic military use. However, a review of available information has identified a low risk of historic contamination and unexploded ordnance at the proposed site. The Health and Safety Executive (HSE) response to the Stage 3 Targeted Habitats Consultation – January 2024, confirmed that there are no HSE explosive licenced sites in the vicinity of the proposed development.

1.11.43 The construction team will follow best practice to minimise fuel spills and leaks and no likely significant effects related to potentially contaminated land are anticipated. In accordance with best practice any visual or olfactory signs of contamination encountered during excavation will be reported to the Principal Contractor and investigated.

1.11.44 Areas where unexpected contamination are encountered or suspected will be photographed and annotated on a site drawing. Necessary works at the location where signs of contamination are suspected/encountered will cease until the contamination has been assessed by a suitably qualified Environmental Consultant in accordance with the Contaminated Land (England) Regulations 2006.

1.11.45 Risk to workers is considered to be mitigated with measures described above and below. Therefore sensitivity and magnitude of risk to workers from ground contamination is **Low** and effects are **not significant** in EIA terms.

1.11.46 To mitigate the potential for fuel spills and leaks, all fuels and oils will be stored in double skinned containers and all refuelling will take place in an area dedicated to this purpose. Spill kits will be available on site and close to works areas and sensitive receptors. The magnitude of ground condition effects during construction, operation and decommissioning is considered to be **Low** and the sensitivity is **Medium**. Accidental pollution effect on ground condition is concluded to be **not significant**.

1.11.47 Risk from unexploded ordnance is **Low** magnitude and **Low** sensitivity due to unlikely presence and controls described, which will be included in the final LIMP. This is **not significant** in EIA terms.

1.11.48 On this basis, ground contamination effects are not considered further for project alone assessment as there is no potential for significant effects to arise as a result of the proposed development with the proposed controls in place.



ONSHORE BIODIVERSITY

1.11.49 Assessment of the likely effects of the proposed development to onshore ecology follows a different methodology to that presented in Section 1.6. This is based on best practice guidance and professional judgement and is described in detail in Volume 9, Part 8, Annex 1.3: Ecological Impact Assessment (EclA).

1.11.50 The proposed development is located within and close to several protected areas, notably:

- > Alde-Ore Estuary Ramsar;
- > AOE SPA;
- > Orfordness - Shingle Street SAC;
- > Alde-Ore & Butley Estuaries SAC;
- > Orfordness-Havergate National Nature Reserve; and
- > Alde-Ore Estuary SSSI.

1.11.51 Therefore, a site survey was completed and an EclA has been undertaken, which provides greater detail on these sites and their qualifying features (Volume 9, Part 8, Annex 1.3: Ecological Impact Assessment).

1.11.52 A summary of the EclA is presented below.

CONSTRUCTION

1.11.53 Impacts from construction may result in damage to existing habitats and fauna as described for the following features.

PERENNIAL VEGETATION ON COASTAL SHINGLE;

1.11.54 Ground disturbance will be the minimum necessary to install the proposed predator exclusion fence. Where possible, stones supporting lichens will be placed to one side and then replaced near to their original location in an upright position once the fence has been installed. Vegetation will be allowed to naturally regenerate within the disturbed area, without any intervention (seeding, topsoil, fertilizer).

1.11.55 It is important to note that shingle habitat across the site has been disturbed in the past and that no natural shingle ridges remain. Perennial grass vegetation will recover quickly following construction. Reinstatement of lichens on shingle will take longer but will also recover.

1.11.56 Therefore, **no significant effects are likely on perennial vegetation on coastal shingle.**

SALINE LAGOONS

1.11.57 Saline Lagoons are not present along the proposed predator exclusion fence line, access tracks or within temporary works areas and therefore will not be damaged during the installation of the fence. Therefore, **no significant effects are likely on Saline Lagoons.**



DITCHES

1.11.58 The fence line may cross the ditches within the site. Where areas of the fence cross water, it will include mesh to the channel bed to prevent access from water-borne predators. A separate hydrology assessment has determined that this has a minor (**not significant**) flood risk, should debris become trapped in the fence.

SCARCE/UNCOMMON PLANTS

1.11.59 There were no uncommon plants recorded along the proposed predator exclusion fence line during the survey. However, the survey was undertaken in January and so the presence of a few of these species (such as Bur Meddick, Curved hard-grass, Suffocated Clover, Rough Clover, Yellow-vetch) cannot be excluded, which are all annuals and therefore less vulnerable than perennials to temporary disturbance, especially after setting seed.

1.11.60 Ground disturbance will be the minimum necessary to install the fence. Vegetation will be allowed to naturally regenerate within the disturbed area, without any intervention (seeding, topsoil, fertilizer).

1.11.61 Therefore, **no significant effects are likely on scarce/uncommon plants.**

SCARCE/UNCOMMON INVERTEBRATES

1.11.62 There is suitable habitat for uncommon invertebrates along the proposed predator exclusion fence line. However, given the localised and temporary nature of the works, populations of invertebrates are unlikely to be affected. Therefore, **no significant effects are likely on scarce/uncommon invertebrates.**

COMMON REPTILES

1.11.63 There is suitable habitat for common reptiles along the proposed predator exclusion fence line however given the localised and temporary nature of the works, populations of reptiles are unlikely to be affected. However, removal or moving of old railway sleepers could negatively affect reptile populations if these are used as refuges.

1.11.64 Ground disturbance will be the minimum necessary to install the fence and existing sleepers will be moved minimally, if at all.

1.11.65 Therefore, **no significant effects are likely on common reptiles.**

BIRDS

1.11.66 Other than Marsh Harrier, the habitat along the proposed predator exclusion fence line is not suitable for the special interest birds. The area affected by the fence line installation is a very small fraction of a Marsh Harrier home range and the temporary disturbance to this area will not affect the Marsh Harrier population. Therefore, **no significant effects are likely on birds.**

BROWN HARE

1.11.67 The habitat along the proposed predator exclusion fence line is suitable for Brown Hare, however, the area of habitat within the proposed development is a very small part of their range and the population will not be affected. Therefore, **no significant effects are likely on Brown Hare.**



DISTURBANCE TO WINTERING BIRDS

1.11.68 It is likely that workforce presence and plant operation during construction in autumn and winter will disturb birds such as Redshank, Grey Heron and Little Egret. However, the disturbance will be localised and of short duration and therefore unlikely to result in significant disturbance for any of these species (or any other bird species). Therefore, **no significant effects are likely on wintering birds.**

DISTURBANCE TO MAMMALS

1.11.69 It is likely that workforce presence and plant operation during construction in autumn and winter will disturb mammals such as Harbour Seal, Brown Hare and Chinese Water Deer. However, the disturbance will be localised and of short duration and therefore unlikely to result in significant disturbance for any of these species (or any other mammal species). Therefore, **no significant effects are likely on mammals.**

DISTURBANCE TO OTHER ECOLOGICAL FEATURES

1.11.70 The other important ecological features present (saline lagoons, perennial vegetation on coastal shingle, ditches, scare/uncommon plant species, scare/uncommon invertebrates, and common reptiles) are not sensitive to this level of disturbance from human activity. Therefore, **no significant effects are likely on other ecological features.**

INVASIVE SPECIES

1.11.71 There is a low risk that machinery and materials brought to the site will be contaminated with invasive non-native species, which then become established and spread, with negative effects on Orford Ness, especially its flora including scarce/uncommon plant species.

1.11.72 However, all machinery, materials and equipment will be clean and checked for the presence of invasive non-native species and mud (which could contain invasive non-native species).

1.11.73 Therefore, **no significant effects are likely from invasive non-native species.**

OPERATION

REMOVAL OF GRAZING EFFECT ON PERENNIAL VEGETATION ON COASTAL SHINGLE

1.11.74 The proposed predator exclusion fence enclosure will exclude grazing animals as well as predators. Removal of grazing may promote tall perennial grasses at the expense of open areas and associated flora and lichens, with the open areas being of greater conservation importance.

1.11.75 To create or maintain open areas, patches of Sea Couch would be cut (where required) outside the breeding season for LBBG. This will minimise negative changes in the vegetation from the removal of grazing. Details will be set out in a final LIMP.

1.11.76 Therefore, **no significant effects are likely on perennial vegetation on coastal shingle.**



REMOVAL OF GRAZING EFFECT ON SALINE LAGOONS & DITCHES

1.11.77 Vegetation within saline lagoons on the site is not grazed from survey observations or dependent on grazing to maintain its community structure and composition, while the ditches generally lack vegetation.

1.11.78 Therefore, **no significant effects are likely on saline lagoons & ditches.**

REMOVAL OF GRAZING EFFECT ON SCARCE/UNCOMMON PLANTS

1.11.79 The scarce and uncommon plants are smaller species which may benefit from light grazing; removal of grazing could result in a decline of these species if present, e.g. the small clovers.

1.11.80 Mitigation similar to that for removal of grazing effect on perennial vegetation on coastal shingle will be implemented. Therefore, **no significant effects are likely on scarce/uncommon plants.**

REMOVAL OF GRAZING EFFECT ON SCARCE/UNCOMMON INVERTEBRATES

1.11.81 Scarce/uncommon invertebrates if present, may be affected by cessation of grazing as these prefer open habitats. Species associated with lagoons would not be affected, however.

1.11.82 Mitigation similar to that for removal of grazing effect on perennial vegetation on coastal shingle will be implemented. Therefore, **no significant effects are likely on scarce/uncommon invertebrates.**

REMOVAL OF GRAZING EFFECT ON REPTILES

1.11.83 Removing grazing could reduce site suitability for reptiles by removing basking sites and refuges/hibernation sites.

1.11.84 Mitigation similar to that for removal of grazing effect on perennial vegetation on coastal shingle will be implemented. Therefore, **no significant effects are likely on reptiles.**

REMOVAL OF GRAZING EFFECT ON BIRDS

1.11.85 Other than Marsh Harrier, the grassland areas at the site are not favourable to special interest bird species and therefore these species are unlikely to be affected by the removal of grazing; the saline water appears to keep areas in and around the lagoons clear of dense perennial vegetation without the need for grazing. Marsh Harrier hunts over dense vegetation and therefore it is also unlikely to be affected. Therefore, **no significant effects are likely on birds.**

REMOVAL OF GRAZING EFFECT ON MAMMALS

1.11.86 See exclusion of mammals below.

INCREASE IN NUTRIENTS EFFECT ON PERENNIAL VEGETATION ON COASTAL SHINGLE

1.11.87 The introduction of breeding LBBG will increase nutrients within the shingle due to bird droppings; this may favour coarse grasses at the expense of smaller flowering plants and therefore change vegetation composition or relative abundance.



1.11.88 In the event that increased nutrients are noted (from monitoring or other visits) to be affecting features within the site, consideration may be given to removing cut vegetation from the site, which would therefore help reduce the potential additional nutrients arising from nesting LBBG. The balance of nutrients will be determined by the numbers of nesting birds and the effect of excluding grazers, which is as yet unknown, however it will be no more than would occur with the restoration of the LBBG population in accordance with the site's conservation objectives. The details of habitat management will be set out in the final LIMP.

1.11.89 Therefore, **no significant effects are likely on perennial vegetation on coastal shingle.**

INCREASE IN NUTRIENTS EFFECT ON SALINE LAGOONS

1.11.90 The introduction of breeding LBBG on the site will increase nutrients within the saline lagoons and potentially lead to changes in existing plant and animal communities.

1.11.91 Mitigation similar to that for increased nutrient effect on perennial vegetation on coastal shingle will be implemented if required. Therefore, **no significant effects are likely on saline lagoons.**

INCREASE IN NUTRIENTS EFFECT ON OTHER ECOLOGICAL FEATURES

1.11.92 Any change in vegetation structure and composition arising from increased nutrients, may affect other ecological features with some potentially benefitting, whilst others may decline, such as scarce/uncommon plants and invertebrates.

1.11.93 Mitigation similar to that for increased nutrient effect on perennial vegetation on coastal shingle will be implemented if required. Therefore, **no significant effects are likely on other ecological features.**

CHANGES IN HYDROLOGY

1.11.94 The proposed predator exclusion fence will not change the flow of water across the site and is not predicted to increase the risk of flooding over the development lifetime, as there will be no increase in surface water runoff; there should be no indirect effects on ecological features as a result of changes in hydrology.

1.11.95 Therefore, **no significant effects are likely from changes in hydrology.**

EXCLUSION OF MAMMALS

1.11.96 Grazing animals will lose access to currently accessible land. Of the species recorded, only Brown Hare is of conservation concern. However, the area that would be lost to grazing would support just one Brown Hare of a larger wider population.

1.11.97 The proposed predator exclusion fence line may cross ditches within the site and therefore the ability of common seals to access these will be impaired. However, this is unlikely to have any effect on the seal population.

1.11.98 Therefore, **no significant effects are likely on mammals.**

EXCLUSION OF OTHERS ECOLOGICAL FEATURES

1.11.99 The fence would not exclude any of the other features identified. Therefore, **no significant effects are likely on other ecological features.**



DECOMMISSIONING

1.11.100 The effects of decommissioning are the same or very similar to those for construction. Therefore, **no significant effects are likely** to onshore ecology as a result of the decommissioning phase.

HUMAN HEALTH AND MAJOR DISASTERS

1.11.101 Assessment of the likely effects of the proposed development on human health and major disasters has been undertaken using a different methodology to that presented in Section 1.6. This is based on best practice guidance and professional judgement, and is described in detail in Volume 6, Part 4, Chapter 2: Human Health and Major Disasters.

1.11.102 Potential impacts to human health were identified to be limited and confined to the short term construction phase of the proposed development. Aside from construction workers, there are no human receptors within range of the impacts of the proposed works. The proposed works are small scale and no major disasters are identified in any phase.

1.11.103 Therefore, human health and major disaster effects are not considered further in the assessment of the proposed development alone as there is no potential for significant effects to arise.

SOCIOECONOMICS AND TOURISM

1.11.104 The standard methodology presented in Section 1.6 has been applied to assess socioeconomics and tourism related effects of the proposed development.

1.11.105 The site is in a remote location away from population centres and areas of high interest to tourism, the land is not typically accessible to members of the public and visual amenity will not be impacted for the wider area (see Landscape and Visual Impact above).

1.11.106 Therefore, due to the remote location and small scale nature of the proposed development, no potential for significant socioeconomic or tourism effects are predicted. Socioeconomic and tourism effects are therefore not considered further in the project alone assessment.

1.12 CUMULATIVE EFFECTS

1.12.1 This cumulative impact assessment for the proposed development has been undertaken in accordance with the methodology provided in Volume 6, Chapter 3, Annex 3.1: Cumulative Effects Assessment Methodology. Other major developments have been considered relative to the onshore assessment of cumulative effects, which includes other projects that are considered likely to be present in the area of the onshore works once the proposed development is operational, or where there may be some overlap in respective construction phases and in decommissioning if appropriate.



1.12.2 In assessing the potential cumulative impacts for the proposed development, it is important to consider that other projects that are currently proposed may or may not be taken forward for development. To build in some consideration of certainty (or uncertainty) the projects and plans discussed have been allocated into ‘Tiers’ reflecting their current status within the planning and development process. These Tiers are included in Table 1.4.

Table 1.4 Description of Tiers of other developments considered for cumulative effect assessment

Tiers	Development Stage
Tier 1	Projects under construction.
	Permitted applications, whether under the Planning Act 2008 or other regimes, but not yet implemented.
	Submitted applications, whether under the Planning Act 2008 or other regimes, but not yet determined.
Tier 2	Projects on the Planning Inspectorate’s Programme of Projects where a Scoping Report has been submitted.
	Projects under the Planning Act 2008 where a PEIR has been submitted for consultation.
Tier 3	Projects on the Planning Inspectorate’s Programme of Projects where a Scoping Report has not been submitted.
	Identified in the relevant Development Plan (and emerging Development Plans with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/ approvals, where such development is reasonably likely to come forward.

1.12.3 Each project, plan or activity has been considered and scoped in or out on the basis of effect–receptor pathway, data confidence and the temporal and spatial scales involved.



Table 1.5 Projects considered within the cumulative effect assessment

Development type	Project	Status	Data confidence assessment/ phase	Tier
Norfolk Projects predator-proof fencing at Orford Ness to deliver compensatory measures for LBBG Area	DC/22/3447/FUL	Permitted development 31 August 2022	High - consented Potential cumulative impact due to implementation of adaptive management measures e.g. additional habitat management and measures to attract LBBG. All other impacts are considered baseline and are considered in the alone assessment (Section 1.11)	Tier 1

LANDSCAPE AND VISUAL IMPACT

1.12.4 The existing Norfolk Projects predator-proof fencing at Orford Ness is considered as part of the baseline in the LVIA assessment (discussed in Section 1.11). Due to the relatively small-scale of the proposed development, the localised nature of the potential effects and the extent of limited existing human influences in both the wider and local landscapes, no cumulative landscape and visual effects have been identified in combination with any surrounding third party projects or proposals. East Suffolk Council’s response to the Stage 3 Targeted Habitats Consultation – January 2024 agrees with this, and acknowledged that the described fencing is expected to have a relatively low visual impact if seen over a long distance.

ONSHORE ARCHAEOLOGY AND CULTURAL HERITAGE

1.12.5 The construction, operational and decommissioning phases will not affect the ways in which the historic interests of the assets are understood or appreciated and the potential impact on cultural heritage assets is considered to be negligible and not significant. No significant third party developments or proposals have been identified. Therefore, no archaeology and cultural heritage cumulative impacts have been identified in combination with any surrounding third party projects or proposals.

HYDROLOGY AND FLOOD RISK

1.12.6 The proposed fencing will not change the surface of the Site and is not predicted to increase the risk of flooding to others over the development lifetime, as there will be no increase in surface water runoff. No significant third party developments or proposals have been identified. Therefore, no hydrology and flood risk cumulative impacts have been identified in combination with any surrounding third party projects or proposals.



AIR QUALITY

1.12.7 The Site is not within a designated Air Quality Management Area (AQMA) and the Site's isolated location and restricted public access mean that no significant impacts on human receptors are anticipated. Furthermore, the short term, minor earthworks i.e. topsoil scraping and reinstatement following the fence construction are not anticipated to generate significant amounts of dust. No significant third party developments or proposals have been identified. Therefore, no air quality cumulative impacts have been identified in combination with any surrounding third party projects or proposals.

AIRBORNE NOISE AND VIBRATION

1.12.8 There are no residential properties or noise sensitive human receptors close to the Site and the fence construction work would be completed in three weeks, between September and February, when few people would be visiting the surrounding area.

1.12.9 No likely significant effects related to noise and human or ecological receptors have been identified as a result of the proposed development. No significant third party developments or proposals have been identified. Therefore, no airborne noise and vibration cumulative impacts have been identified in combination with any surrounding third party projects or proposals.

TRAFFIC AND TRANSPORT

1.12.10 A small workforce would complete the installation of the predator exclusion fence over approximately 3 weeks. Following construction of the fence, site visits for monitoring and management purposes would take place 3-4 times a year. In addition, an ecologist would take an annual visit, to monitor the success of the compensation site. Other than the ongoing monitoring and maintenance operations relating to the existing Norfolk Projects predator-proof fencing at Orford Ness, no significant third party developments or proposals have been identified, and the monitoring and maintenance operations of the combined projects would not result in significant effects. Therefore, no traffic and transport cumulative impacts have been identified in combination with any surrounding third party projects or proposals.

1.12.11 East Suffolk Council's consultation response to the Stage 3 Targeted Habitats Consultation – January 2024 agrees with the Applicant's conclusions and no significant cumulative impacts are expected

GROUND CONTAMINATION AND LAND USE

1.12.12 No potential for significant ground contamination effects to arise as a result of the proposed development have been identified. No significant third party developments or proposals have been identified. Therefore, no ground contamination and land use cumulative impacts have been identified in combination with any surrounding third party projects or proposals.



ONSHORE BIODIVERSITY

- 1.12.13 The existing Norfolk Projects predator-proof fencing at Orford Ness is an existing enclosed area. This has the potential to give rise to the same effects during operation as the proposed development, namely changes in the vegetation and ecology of the enclosed areas through cessation of grazing and increase in nutrients. It is understood that, after one breeding season, LBBG have not bred within the Norfolk Projects compensation area and therefore not resulted in nutrient increases. Changes in the vegetation through excluding grazing animals are evident at the Norfolk Projects compensation area.
- 1.12.14 The addition of the proposed development would increase the area of Orford Ness with reduced grazing intensity (and potentially) increases in nutrients with possible negative effects on the flora, unless managed. VE would monitor the potential for impacts from increased nutrients and implement measures (described in Section 1.1) if required.
- 1.12.15 No other projects have been identified which could affect the same ecological features as the proposed development.

HUMAN HEALTH AND MAJOR DISASTERS

- 1.12.16 Potential impacts to human health were identified to be limited and confined to the short term construction phase of the development. Aside from construction workers, there are no human receptors within range of the impacts of the proposed works. The proposed works are small scale and no major disasters are identified in any phase.
- 1.12.17 No significant third party developments or proposals have been identified. Therefore, no human health and major disasters cumulative impacts have been identified in combination with any surrounding third party projects or proposals.

SOCIOECONOMICS AND TOURISM

- 1.12.18 Due to the remote location and small scale of the proposed development, no potential for significant socioeconomic or tourism effects are predicted.
- 1.12.19 No significant third party developments or proposals have been identified. Therefore, no socioeconomic and tourism cumulative impacts have been identified in combination with any surrounding third party projects or proposals.

1.13 CLIMATE CHANGE EFFECTS

- 1.13.1 This section assesses the effect of climate change on the local area in which the proposed development will take place and the likely impacts of climate change and the project in-combination on the receiving environment.
- 1.13.2 Climate change is predicted to result in warmer and wetter winters, hotter and drier summers plus increased occurrence of extreme weather events. This will lead to complex changes to biodiversity, although significant changes to the list of important ecological receptors identified locally is not anticipated in the short term. In the medium-long term changes are possible but are impossible to accurately predict at this stage.



- 1.13.3 Of most relevance at the compensation area location is that coastal plants and wildlife that cannot respond to sea level rise or coastal erosion by moving inland (for example, due to the presence of urban land, or flood defences) may be lost. There could also be possible loss of species on the southern edge of their range and gain of more southern species expanding their range northwards. Other changes could include adverse effects on waterbodies due to drought. In addition, the number and range of invasive non-native species may increase.
- 1.13.4 Given the difficulties of predicting biodiversity change as a result of climate change, the additive effect (if any) of the project in the local area is equally hard to determine. The vast majority of negative impacts will take place during construction and therefore the medium to longer term climate effects highlighted above are unlikely to have resulted in measurable biodiversity change locally. Mitigation to prevent the risk of introducing or spreading invasive non-native species will be detailed in the Construction Method Statement.
- 1.13.5 The FRA set out in Annex 1.1 has taken account of possible future rising sea levels and increased storminess and temperature rises, in terms of the potential to affect the integrity and purpose of the predator fencing. No significant effects are expected from climate change and the construction and operation of the fence are not anticipated to have an effect on climate change. Therefore, the effects of climate change are not considered further in this chapter.

1.14 INTER-RELATIONSHIPS

- 1.14.1 The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and decommissioning of the compensation site on the same receptor, or group of receptors. Such inter-related effects include both:
- > project lifetime effects: i.e. those arising throughout more than one phase of the project (construction, operation, and decommissioning) to interact to potentially create a more significant effect on a receptor than if just one phase were assessed in isolation; and
 - > receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor (or group). Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.
- 1.14.2 The LBBG compensation area is 23.2km km from the nearest point of the onshore cable route. The area of effect for the LBBG compensation area works are limited to Orford Ness and therefore there is no potential for either project lifetime or receptor led inter-related effects between the LBBG compensation area works and the wider onshore infrastructure for VE.
- 1.14.3 It is not anticipated that any inter-relationships related to the LBBG compensation area works will lead to any significant effects greater than the assessments presented for each discipline.



1.15 TRANSBOUNDARY EFFECTS

1.15.1 Transboundary effects are those effects that may arise in the environment of other states outside of the UK. The need to consider these is enshrined within the United Nations Economic Commission for Europe Convention on EIA in a Transboundary Context, adopted in 1991 in the Finnish city of Espoo (the 'Espoo Convention'). Based upon the nature of the site, and the baseline conditions identified by the technical annexes which support this chapter, it is considered that any impacts, if present, will be localised. It is therefore judged that there will not be any transboundary impacts. Therefore, transboundary effects are not considered further in this chapter.

1.16 SUMMARY OF EFFECTS

1.16.1 This assessment has considered the potential effects arising from the activities associated with the proposed LBBG compensation area. Consideration has been given to potential worst-case effects arising from construction, operational and decommissioning activities. Worst-case parameters have been identified to provide as robust an assessment as possible, taking into account proposed mitigation measures. It is considered that the likely overall effect of the compensation area throughout the construction, operation and decommissioning phases, is not significant in EIA terms.

1.16.2 A summary of effects is presented in Table 1.6 for the construction, operational and decommissioning phases.



Table 1.6: Summary of effects

Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Construction Phase			
Landscape and Visual			
Effect on landscape character across the Coastal Dunes and Shingle Ridges LCT, Coastal Levels LCT, Suffolk Coast and Heath AONB, and the Suffolk Heritage Coast.	Medium - Low	Low	Not Significant
Effect on the visual amenity of walkers in the wider area.	Low	Low	Not Significant
Onshore Archaeology and Cultural Heritage			
Disturbance to potential archaeological assets.	Low	Low	Not significant
Indirect effect to Historic Landscape Character.	Low	Low	Not significant
Indirect effect to heritage significance through change within setting).	Low	Low	Not significant
Hydrology and Flood Risk			
Changes to the site surface and risk of increase to flooding to surrounding areas	Negligible	Low	Not significant



Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Air Quality			
Dust generated from temporary construction activities on human and ecological receptors	Low	High	Not Significant
Temporary construction traffic impact on human and ecological receptors.	Low	High	Not Significant
Short term risks to offsite human receptors, such as walkers or birdwatchers.	Low	Low	Not Significant
Short term risks to construction workers during decommissioning of compensation area and associated infrastructure.	Low	Low	Not Significant
Airborne Noise and Vibration			
Construction Noise	Low	Medium	Not Significant
Noise risks to offsite human receptors, such as walkers or birdwatchers.	Low	Low	Not Significant
Onshore Biodiversity			
Disturbance and damage to habitat within the fence line and along the line of the fence during removal.	Low	Medium	Not Significant



Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Disturbance and damage to birds, mammals and other fauna during construction works, due to presence of workers.	Low	Medium	Not Significant
Temporary loss and fragmentation of habitat within and adjacent to the compensation area.	Low	Medium	Not Significant
Risk to environmental designations	Low	Medium	Not Significant
Traffic and Transport			
Impact of traffic movements on the local highway and transportation of construction materials and staff to the compensation area.	Low	Medium	Not Significant
Ground Contamination and land use			
Short term risks to construction workers during construction.	Low	Low	Not Significant
Impacts upon soil/land quality and risk of accidental pollution.	Low	Medium	Not Significant
Risk from unexploded ordnance to construction workers.	Low	Low	Not Significant
Human Health and Major Disasters			
All effects through construction	Low	Low	Not Significant



Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Socioeconomics and Tourism			
All effects through construction	Low	Low	Not Significant
Operation Phase			
Landscape and Visual			
Effect on landscape character across the Coastal Dunes and Shingle Ridges LCT, Coastal Levels LCT, Suffolk Coast and Heath AONB, and the Suffolk Heritage Coast.	Medium - Low	Low	Not significant
Effect on the visual amenity of walkers in the wider area.	Low	Medium	Not significant
Onshore Archaeology and Cultural Heritage			
Disturbance to potential archaeological assets.	Low	Low	Not significant
Indirect effect to Historic Landscape Character.	Low	Low	Not significant
Indirect effect to heritage significance through change within setting).	Low	Low	Not significant
Hydrology and Flood Risk			
Changes to the site surface and risk of increase to flooding to surrounding areas	Negligible	Low	Not significant



Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Air Quality			
Operational road traffic volumes on human receptors arising from maintenance and monitoring visits.	Low	Medium	Not Significant
Operational road traffic volumes on ecological receptors arising from monitoring and maintenance visits.	Low	Medium	Not Significant
Airborne Noise and Vibration			
Noise arising from monitoring and maintenance visits.	Low	Medium	Not Significant
Onshore Biodiversity			
Disturbance to protected species and habitats during management/monitoring/maintenance visits	Low	Medium	Not Significant
Risk to environmental designations	Low	Medium	Not Significant
Traffic and Transport			
Impact of traffic movements on human receptors arising from maintenance and monitoring visits.	Low	Medium	Not Significant
Impact of traffic movements on ecological receptors arising from monitoring and maintenance visits.	Low	Medium	Not Significant
Ground Contamination and Land Use			
Disturbance or damage to ground features due to planned maintenance and unplanned maintenance.	Low	Medium	Not Significant



Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Human Health and Major Disasters			
All effects through operation	Low	Low	Not Significant
Socioeconomics and Tourism			
All effects through operation	Low	Low	Not Significant
Decommissioning Phase			
Landscape and Visual			
Effect on landscape character across the Coastal Dunes and Shingle Ridges LCT, Coastal Levels LCT, Suffolk Coast and Heath AONB, and the Suffolk Heritage Coast.	Medium - Low	Low	Not Significant
Effect on the visual amenity of walkers in the wider area.	Low	Low	Not Significant
Onshore Archaeology and Cultural Heritage			
Disturbance to potential archaeological assets	Low	Low	Not Significant
Indirect effect to Historic Landscape Character	Low	Low	Not Significant
Indirect effect to heritage significance through change within setting)	Low	Low	Not Significant



Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Hydrology and Flood Risk			
Changes to the site surface and risk of increase to flooding to surrounding areas	Negligible	Low	Not significant
Risk of debris getting caught in the fence	Low	Low	Not significant
Air Quality			
Short term risks to construction workers during decommissioning of compensation area and associated infrastructure.	Low	Medium	Not Significant
Risks to offsite human receptors, such as walkers and bird watchers during decommissioning of compensation area and associated infrastructure.	Low	Medium	Not Significant
Airborne Noise & Vibration			
Same as construction effects	Low	Medium	Not Significant
Onshore Biodiversity			
Disturbance and damage to habitat within the fence line and along the line of the fence during removal, similar to construction.	Low	Medium	Not Significant
Disturbance and damage to birds, mammals and other fauna during decommissioning works, due to presence of workers.	Low	Medium	Not Significant
Risk to environmental designations during decommissioning activities.	Low	Medium	Not Significant



Description of potential effect	Magnitude	Sensitivity of receptor	Significance
Traffic and Transport			
Operational road traffic volumes on human receptors arising from decommissioning work.	Low	Medium	Not Significant
Operational road traffic volumes on ecological receptors arising from decommissioning work.	Low	Medium	Not Significant
Ground Contamination and Land Use			
Disturbance or damage to ground features during removal of fence and associated structures	Low	Medium	Not Significant
Risks to important ecological features. Permanent and temporary habitat loss	Low	Medium	Not Significant
Accidental pollution.	Low	Medium	Not Significant
Human Health and Major Disasters			
All effects through decommissioning	Low	Low	Not Significant
Socioeconomics and Tourism			
All effects through decommissioning	Low	Low	Not Significant



1.17 REFERENCES

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