



Morven Hawthorn Pit Grid Connection Project

Preliminary Environmental Information Report

Volume 3, Chapter 3: Terrestrial Ecology and
Terrestrial and Intertidal Ornithology

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Table of contents

3	Terrestrial Ecology and Terrestrial and Intertidal Ornithology	1
3.1	Introduction.....	1
3.2	Legislative and policy context	2
3.3	Consultation and engagement	18
3.4	Baseline characterisation	46
3.5	Impact assessment methodology	65
3.6	Key parameters for assessment	71
3.7	Maximum design scenario	75
3.8	Commitments adopted as part of the MHPGC Project	86
3.9	Assessment of impacts	91
3.10	Cumulative effects	144
3.11	Transboundary effects.....	161
3.12	Inter-related effects.....	161
3.13	Summary.....	161
3.14	References	168

List of tables

Table 3-1: Summary of the NPS provisions relevant to terrestrial ecology and terrestrial and intertidal ornithology	6
Table 3-2: Summary of NPPF requirements relevant to terrestrial ecology and terrestrial and intertidal ornithology	12
Table 3-3: Marine planning policy relevant to terrestrial ecology and terrestrial and intertidal ornithology.....	15
Table 3-4: Local policy relevant to terrestrial ecology and terrestrial and intertidal ornithology	17
Table 3-5: Summary of scoping responses relevant to terrestrial ecology and terrestrial and intertidal ornithology	18
Table 3-6: Summary of further consultation and engagement.....	34
Table 3-7: Summary of site-specific surveys undertaken to inform the PEIR.	49
Table 3-8: Ecological designated sites and relevant qualifying interests within the Ecology Study Area	55
Table 3-9: Ornithological designated sites and relevant qualifying interests within the Ornithology Study Area	57
Table 3-10: Summary of site-specific surveys.....	62
Table 3-11: Defining importance of ecological receptors	66
Table 3-12: Definition of terms relating to the magnitude of an impact	67
Table 3-13: Significance of potential effects in line with Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR impacts.....	69
Table 3-14: Significance Definitions	69
Table 3-15: Impacts scoped into the assessment	72
Table 3-16: Impacts scoped out of the assessment.....	73
Table 3-17: Ecological receptors scoped into the assessment.....	73

Table 3-18: MDS relevant for the assessment of potential impacts on terrestrial ecology and terrestrial and intertidal ornithology	77
Table 3-19: Embedded mitigation relevant to terrestrial ecology and terrestrial and intertidal ornithology implemented as part of the MHPGC Project	87
Table 3-20: Preliminary assessment to determine potential for significant effects	92
Table 3-21: List of other projects and plans considered within the Cumulative Effects Assessment for Terrestrial Ecology and Terrestrial and Intertidal Ornithology	146
Table 3-22: MHPGC Project CEA for Land take/Land Use Change	150
Table 3-23: MHPGC Project CEA for Fragmentation of Habitats	154
Table 3-24: MHPGC Project CEA for Increased Noise, Vibration, Light and Movement Levels	157
Table 3-25: Summary of potential impacts and residual effects	162

List of figures

Figure 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Study Area	47
Figure 3.2: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Area	48

Annexes

Annex number	Annex title
3.1	Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report
3.2	UK Habitat Classification. National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report
3.3	Interim Badger Surveys Technical Report
3.4	CONFIDENTIAL Interim Badger Surveys Technical Report
3.5	Interim Bat Surveys Technical Report
3.6	Initial Biodiversity Net Gain Assessment
3.7	Interim Reptile Surveys Technical Report
3.8	Interim Great-crested Newt Surveys Technical Report
3.9	Interim Otter Survey Technical Report
3.10	CONFIDENTIAL Interim Otter Surveys Technical Report
3.11	Interim Water Vole Surveys Technical Report
3.12	Interim Breeding Bird Surveys Technical Report
3.13	Interim Wintering, Passage and Intertidal Birds Surveys Technical Report

Glossary

Term	Meaning
Alternating Current (AC) connection cables	AC cables that will connect the proposed onshore land substation to the National Grid Hawthorn Pit Substation.
Ancient Woodland	Land that has been continuously wooded since at least 1600 AD in England and is regarded as irreplaceable habitat in national planning policy. Ancient woodland greater than 2 hectares (ha) is recorded on the Ancient Woodland Inventory maintained by Natural England.
Blue Spaces	Blue spaces are outdoor environments, either natural or man-made, that prominently feature water and are accessible to people. This includes rivers, lakes and the sea.
Biodiversity Assets	A habitat, species or ecosystem that provides positive value to the natural environment, quantified using the Statutory Biodiversity Metric and formalised in Biodiversity Net Gain (BNG) policy under the Environment Act 2021.
Biodiversity Duty	Under the Environment Act 2021, Public Authorities are legally required to actively conserve and enhance biodiversity, including restoring and enhancing species populations and habitats, as well as protecting them, and must have regard to relevant Local Nature Recovery Strategies in the process.
Biodiversity Net Gain (BNG)	BNG is a process whereby development leaves biodiversity in a measurably better state and is a planning policy requirement in England under the National Planning Policy Framework (2025). BNG is a statutory requirement under the Environment Act (2021) for certain Town and Country Planning Act (TCPA) developments setting out a mandatory 10 percent (%) net gain in biodiversity. At time of writing, the 10% statutory requirement is not in force for Nationally Significant Infrastructure Projects (NSIPs), although is expected in November 2026. Guidance has been provided by the Department for Environment, Food and Rural Affairs (Defra).
Blue Onshore Land Substation (LSS) Option Area	Proposed location option for the onshore land substation, located west of the A19 and south of the access road to the Jade Business Park.
Commitments	Measures (embedded mitigation & secondary) to be adopted during the construction, operation and maintenance, and decommissioning phases of the Morven Hawthorn Pit Grid Connection (MHPGC) Project.
Cumulative Effect	For each environmental topic, the baseline environment will be characterised, and the likely significant effect will be described within a topic-specific Study Area. Specific Study Areas are defined for each topic and are based on the maximum spatial extent
Cumulative Effects Assessment	Assessment of the likely effects arising from the MHPFC Project alongside the likely effects arising from other proposed developments on the same receptor or resource.
District Level Licensing (DLL)	The DLL for great crested newts (GCN; <i>Triturus cristatus</i>) is an alternative approach to mitigation licensing for planning applications to develop sites which could affect GCN. The DLL approach is underpinned by a strategic area assessment which includes the identification of risk zones, strategic opportunity area maps and a

Term	Meaning
	mechanism to ensure adequate compensation is provided regardless of the level of impact.
Ecological receptors	Ecological receptors are considered to comprise sensitive sites, habitats, species and ecological receptors which occur within the vicinity of and could be affected by the development of the MHPGC Project.
Ecosystem Services	Ecosystem services are the benefits to people provided by nature including: • provisioning services (e.g. food, water, wood, construction materials); • regulating services (e.g. water quality, flood regulation, erosion protection, carbon storage, noise reduction, air quality regulation, cooling and shading); • supporting services (e.g. habitats, thriving plants and wildlife, pollination); • cultural services (e.g. access to nature, sense of place, aesthetic value, recreation and education).
Embedded mitigation	Measures included as part of the project design. Includes both primary a tertiary mitigation.
Environmental Impact Assessment (EIA)	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Green Spaces	Green spaces are areas of vegetation set within a landscape or townscape and can include blue spaces and built environment features.
Green Onshore Land Substation (LSS) Option Area	Proposed location option for the onshore land substation, located between Jade Business Park (Spring Rd, Murton, Seaham SR7 9DR) and the National Grid Hawthorn Pit Substation.
Habitat of Principal Importance (HPI)	HPIs are priority habitats originally identified in the UK Biodiversity Action Plan (BAP) and now legislated under the NERC Act 2006 which are considered to be the most sensitive/threatened and crucial for conserving biodiversity.
Habitat Condition Assessment	Process to establish the baseline ecological value of a habitat largely for use in Biodiversity Net Gain Assessments.
Habitats Regulations Assessment (HRA)	The Habitats Regulations Appraisal (for Scotland)/Habitats Regulation Assessment (for England) is a process that determines whether development plans could adversely affect sites within the National Site Network and their qualifying features.
Inter-related effects	Effects that may arise from the interactions between different EIA topic effects considered within the alone assessment, potentially leading to more significant effects than if they were to be considered in isolation.
Landfall	The area in which the offshore export cables make landfall (come onshore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area between the trenchless technique exit pits and the transition joint bay inclusive of all construction works.

Term	Meaning
Local Nature Recovery Strategy	A statutory plan for each English county to identify priorities for nature recovery and propose actions in the locations to achieve those priorities, following the local nature recovery strategy regulations and the national goals of the nature recovery network.
Local Nature Reserves (LNRs)	LNRs are usually declared (designated) by local councils but parish and town councils can also declare LNRs if they have the powers to do so delegated to them. LNRs can be large or small and be created where there are wildlife or geological features that are of special local interest. They must have a management plan. LNRs are intended for people and wildlife and used for purposes such as habitat management, quiet recreation, study and to interact with nature and enjoy it.
Magnitude	A combination of the spatial extent, duration, frequency and reversibility of an impact
Marine Directorate Licensing Operations Team (MD-LOT)	The part of the Scottish Government's Marine Directorate responsible for assessing and administering applications for marine licences for Scottish waters and Section 36 consent (offshore) in Scotland.
Marine Management Organisation (MMO)	The MMO, as a UK government body, is responsible for licensing, regulating and overseeing activities in the marine environment for English waters. For a DCO and deemed marine licence, the MMO acts as a statutory consultee, advising on marine planning, environmental impacts, habitats and compliance with marine licensing regulations.
Maximum Design Scenario (MDS)	The realistic worst-case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the MHPGC Project.
Mean High Water Springs (MHWS)	The most inshore level location reached by the sea at high tide during mean high water spring tide. This is defined as the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest.
Mean Low Water Springs (MLWS)	The average height of the low water levels of each pair of successive low waters during the periods of about 24 hours when the tidal range is at its greatest.
MHPGC Project Scoping Report	A Scoping Report for the MHPGC Project, scoping the likely significant effects of the project on the environment, was submitted and accepted by Planning Inspectorate (PINS) and submitted to the Scottish Ministers, via the Marine Directorate – Licencing Operations Team (MD-LOT) in February 2025.
MHPGC Project Scoping Opinions	Separate scoping opinions received from the Planning Inspectorate (PINS) (on behalf of the Secretary of State) and MD-LOT (on behalf of the Scottish Ministers) and the MMO in response to the MHPGC Scoping Report prepared by the Applicants. The MHPGC Scoping Opinions contain the range of issues that the PINS, and MD-LOT in consultation with statutory stakeholders, have identified should be considered within the EIA process.
MHPGC Project	The MHPGC Project is comprised of the offshore export cables in Scottish and English waters from the Morven North or the Morven South offshore substation platform(s) (OSP), landfall, onshore export cables, the onshore land substation (LSS) and AC connection cables.

Term	Meaning
MHPGC PEIR Red Line Boundary: Onshore	Spatial extent used to define the environmental assessment within the PEIR. The area within which all onshore components of the MHPGC Project will be located landward of MHWS, including areas required on a temporary basis during construction and/or decommissioning (e.g. construction compounds).
Morven North Offshore Wind Array Project (hereafter 'Morven North')	The Morven North Offshore Wind Array Project which includes the wind turbines and foundations, OSP and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven North Boundary.
Morven South Offshore Wind Array Project (hereafter 'Morven South')	The Morven South Offshore Wind Array Project, which includes the wind turbines and foundations, OSP and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven South Boundary.
National Grid Hawthorn Pit Substation	The National Grid substation at Hawthorn Pit, County Durham, which the AC connection cables will connect into from the onshore LSS.
National Planning Policy Framework (NPPF)	The NPPF sets out the core planning principles for England. It provides a framework within which locally prepared plans can provide for housing and other development in a sustainable manner.
National Policy Statements (NPS)	Policy statements published by the Department for Energy Security and Net Zero and designated under the Planning Act 2008, setting out national policy for Nationally Significant Infrastructure Projects.
National Site Network	The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 have created a National Site Network on land and at sea, including both the inshore and offshore marine areas in the UK. The National Site Network includes existing Special Areas of Conservation (SAC) and Special Protection Areas (SPA) alongside new SACs and SPAs designated under these Regulations.
Nationally Significant Infrastructure Project (NSIP)	Large scale development which requires development consent under the Planning Act 2008.
Natura 2000 site	A Natura 2000 site is an individual SPA designated under the EU Birds Directive or SAC designated under the EU Habitats Directive, forming part of the Natura 2000 ecological network. In the UK, these sites are collectively known as the National Site Network and are commonly referred to as European sites in planning and Habitats Regulations Assessment.
Nature Recovery Network	A national network of wildlife-rich places aiming to enhance designated sites and wildlife-rich places by connecting, restoring and enhancing habitats to help address the challenges of biodiversity loss, climate change and public health and well-being.
Offshore Substation Platforms (OSPs)	OSPs comprise the support structure, topside and electrical components used for collecting the electricity generated by the wind turbine generators for the passage or transmission to landfall. These OSPs can be divided into two types: • HVAC (High Voltage Alternating Current) collector substations; • HVDC (High Voltage Direct Current) converter substations.
Onshore Export Cables	HVDC cables which bring electricity from the Transition Joint Bay (TJB) to the onshore land substation (LSS).

Term	Meaning
Onshore Land Substation (LSS)	A purpose-built site comprising a compound containing the electrical components for converting the HVDC to HVAC power. The LSS site associated with the MHPGC Project adjusts the power quality and power factor to meet the requirements of power supply being fed to the National Grid Hawthorn Pit Substation.
Operations and Maintenance Phase (O&M)	The operational and maintenance phase of the MHPGC Project lifecycle.
Planning Inspectorate (PINS)	The PINS is an executive agency of the UK Government responsible for administering and examining DCO applications for NSIPs in England. PINS manages the application process, oversees consultation and examination, and makes a recommendation to the relevant Secretary of State on whether consent should be granted.
Preliminary Assessment	An initial inspection of a given ecological receptor.
MHPGC Project Preliminary Environmental Information Report (PEIR)	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project and which helps to inform consultation responses.
Primary Mitigation	Measures included as part of the location or design of the MHPGC Project made during the pre-application phase that are an inherent part of the MHPGC Project and do not require additional action to be taken. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the MHPGC Project, the parameters and associated commitments secured by the DCO and marine licence, or both.
Qualifying Features	The habitats, species or other ecological receptors for which designated sites are notified/protected.
Ramsar Site	A wetland site designated to be of international importance under the Ramsar Convention.
Residual Effects	Effects that continue to exist after mitigation has been applied.
Secondary Mitigation	Actions that will require further activity to achieve the anticipated outcome and may be imposed as part of the planning consent, or through inclusion in the ES. These include measures required to reduce the significance of environmental effects and may be secured through an environmental management plan. For secondary mitigation measures both pre-mitigation and residual effects are presented.
Significance	Effect factor that is determined by the magnitude of impact along with the sensitivity of the receptor.
Site of Special Scientific Interest (SSSI)	Designated areas which feature rare flora or fauna or are host to important features (physiological or geological) which are of scientific interest, designated under the Wildlife and Countryside Act 1981 (as amended).
Special Area of Conservation (SAC)	A site designation specified in the Habitats Directive (Council Directive 92/43/EEC) and protected in the UK under the Conservation (Natural Habitats, &c.) Regulations 1994 (in Scotland), the Conservation of Habitats and Species Regulations 2017 (in England)

Term	Meaning
	and Conservation of Offshore Marine Habitats and Species Regulations 2017 (in Scotland and England). Each site is designated for one or more of the habitats and species listed in the Directive. The Habitats Directive requires the necessary conservation measures to be established involving, if need be, appropriate management plans for each SAC to ensure the favourable conservation status of the habitats or species for which it was designated.
Special Protection Area (SPA)	Locations within the UK designated to conserve rare, vulnerable, and migratory bird species of European importance, as classified by the Conservation (Natural Habitats, &c.) Regulations 1994 (in Scotland), the Conservation of Habitats and Species Regulations 2017 (in England) and Conservation of Offshore Marine Habitats and Species Regulations 2017 (in Scotland and England).
Species of Principal Importance (SPI)	SPIs are priority species that are most threatened, in greatest decline or for which the UK holds a significant proportion of the global population, first identified in the UK BAP. The list is designed to help public bodies to meet their biodiversity duty by considering these species within decision-making.
Target Note	A feature identified during field work which doesn't fit a particular ecological receptor survey symbology but needs to be highlighted as part of the survey data.
Tertiary mitigation	Actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects.
the Ecology Study Area	For each environmental topic, the baseline environment will be characterised, and the potential environmental impacts will be described within a topic-specific Study Area. Specific Study Areas are defined for each topic and are based on the maximum spatial extent across which potential impacts of MHPGC Project may be experienced by the relevant receptors (i.e. Zone of Influence). The Ecology Study Area is made up of several Study Areas including: • UKHab Study Area; • Badger Study Area; • Bat Study Area; • Reptile Study Area; • GCN Study Area; • Otter Study Area; • Water Vole Study Area.
the Ornithology Study Area	For each environmental topic, the baseline environment will be characterised, and the potential environmental impacts will be described within a topic-specific Study Area. Specific Study Areas are defined for each topic and are based on the maximum spatial extent across which potential impacts of MHPGC Project may be experienced by the relevant receptors (i.e. Zone of Influence). The Ornithology Study Area is made up of several Study Areas including: • Breeding Bird Study Area;

Term	Meaning
	• Wintering, Passage and Intertidal Bird Study Area.
Transboundary impact	Potential impacts resulting from MHPGC Project and affecting another European Economic Area (EEA) state.
Transboundary effects	Assessment of potential significant effects resulting from MHPGC Project on the interests of another EEA state(s).
Wildlife Corridor	Linear features such as hedgerows, field margins, watercourses and woodland strips which provide connectivity between fragmented habitats, allowing species to move between them.
Zone of Influence (Zol)	The area within which impacts arising from the MHPGC Project could occur upon receptors.

Acronyms

Acronym	Meaning
AA	Appropriate Assessment
AC	Alternating Current
BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
BoCC	Birds of Conservation Concern
CEA	Cumulative Effect Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
CoCP	Code of Construction Practice
CRoW	Countryside and Rights of Way
DAS	Discretionary Advice Service
DCO	Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DLL	District Level Licensing
DMP	Dust Management Plan
EA	Environment Agency
EcIA	Ecological Impact Assessment
ECow	Ecological Clerk of Works
eDNA	Environmental DNA
EEA	European Economic Area
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
EPS	European Protected Species
ERIC	Environmental Records Information Centre

Acronym	Meaning
ES	Environmental Statement
EU	European Union
EWG	Expert Working Group
ExA	Examining Authority
FCS	Favourable Conservation Status
GCN	Great Crested Newt
GLTA	Ground Level Tree Assessment
HDD	Horizontal Directional Drilling
HPI	Habitat of Principal Importance
HRA	Habitats Regulations Assessment
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IAACCF	Inter-Agency Climate Change Forum
IACPC	Impact Assessment and Conservation Payment Certificate
IEMA	Institute of Environmental Management and Assessment
ILP	Institution of Lighting Professionals
INNS	Invasive Non-Native Species
ISEP	Institute of Sustainability and Environmental Professionals
JB	Joint Bay
LNR	Local Nature Reserve
LONI	Letter of No Impediment
LSE	Likely Significant Effect
LSS	onshore land substation
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
MD-LOT	Marine Directorate – Licensing Operations Team
MDS	Maximum Design Scenario
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
MoRPH	Modular River Physical
MPA	Marine Protection Area
MPS	Marine Policy Statement
NBN	National Biodiversity Network
NE	Natural England
NERC	Natural Environment Research Council

Acronym	Meaning
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NVC	National Vegetation Classification
O&M	Operations and Maintenance
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PRA	Preliminary Roost Assessment
PRF	Potential Roost Features
RCA	River Condition Assessment
SAC	Special Area of Conservation
SAFFA	Salmon and Freshwater Fisheries Act
SNAP	Shared Nitrogen Action Plan
SoS	Secretary of State
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site of Special Scientific Interest
TJB	Transition Joint Bay
UKHab	UK Habitat Classification
WeBs	Wetland Bird Survey
WFD	Water Framework Directive
Zol	Zone of Influence

Units

Unit	Meaning
dB	Decibel
°C	Degree Celsius
ha	hectare
km	Kilometre
m	Metre
m ²	Square meter
m ³	Cubic meter
%	Percentage

3 Terrestrial Ecology and Terrestrial and Intertidal Ornithology

3.1 Introduction

- 3.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary findings of the Environmental Impact Assessment (EIA) undertaken to date for the Morven Hawthorn Pit Grid Connection Project (hereafter 'MHPGC Project'), as described in **Volume 1, Chapter 2: Project Description, of the PEIR**.
- 3.1.1.2 The chapter considers the potential impacts and effects on terrestrial ecology and terrestrial and intertidal ornithology that could result from the construction, operation and maintenance (O&M) and decommissioning phases of the MHPGC Project. Specifically, it relates to the onshore elements of the MHPGC Project landward of Mean High Water Springs (MHWS) at landfall to the National Grid Hawthorn Pit Substation in England, as well as the intertidal ornithology which extends 1.5km from Mean Low Water Springs (MLWS) into the offshore extent of the MHPGC PEIR RedLine Boundary.
- 3.1.1.3 This chapter describes the methodology and datasets that have informed the preliminary assessment, baseline conditions, including future baseline, mitigation measures and the preliminary residual significant effects on terrestrial ecology and terrestrial and intertidal ornithology that could result from the MHPGC Project.
- 3.1.1.4 The assessment is informed by the following chapters:
- **Volume 1, Chapter 2: Project Description, of the PEIR;**
 - **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR;**
 - **Volume 1, Chapter 5: Policy and Legislation, of the PEIR;**
 - **Volume 3, Chapter 1: Geology, Hydrogeology and Groundwater Conditions, of the PEIR**
 - **Volume 3, Chapter 2: Water Resources and Flood Risk, of the PEIR;**
 - **Volume 3, Chapter 5: Traffic and Transport, of the PEIR;**
 - **Volume 3, Chapter 6: Onshore Noise and Vibration, of the PEIR;**
 - **Volume 3, Chapter 7: Onshore Air Quality, of the PEIR;**
 - **Volume 4, Chapter 5: Inter-related Effects, of the PEIR.**
- 3.1.1.5 The chapter also draws on information contained within the following annexes:
- **Volume 1, Annex 4.1: Draft Commitments Register, of the PEIR;**
 - **Volume 1, Annex 4.2: Transboundary Screening, of the PEIR;**
 - **Volume 1, Annex 4.3: Cumulative Screening and Location Plan, of the PEIR;**
 - **Volume 3, Chapter 2: Water Resources and Flood Risk of the PEIR;**
 - **Volume 3, Annex 2.3: Onshore Water Framework Directive Assessment;**
 - **Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and intertidal Ornithology Survey Methodologies Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.3: Interim Badger Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.4: CONFIDENTIAL Interim Badger Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.5: Interim Bat Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.6: Initial Biodiversity Net Gain Assessment, of the PEIR**
 - **Volume 3, Annex 3.7: Interim Reptile Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.8: Interim Great-crested Newt Surveys Technical Report, of the PEIR ;**
 - **Volume 3, Annex 3.9: Interim Otter Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.10: CONFIDENTIAL Interim Otter Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.11: Interim Water Vole Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.12: Interim Breeding Bird Surveys Technical Report, of the PEIR;**
 - **Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR.**

- 3.1.1.6 This PEIR will offer a comprehensive overview of the MHPGC Project's potential environmental impacts and mitigation measures, presenting preliminary data to stakeholders for review and feedback. The PEIR will also be informed by the ongoing pre-application consultation process.
- 3.1.1.7 Following statutory consultation, comments will be reviewed and considered, where appropriate, in preparation of the Environmental Statement (ES) that will accompany the application to the Planning Inspectorate (PINS) for development consent.

3.2 Legislative and policy context

3.2.1 Overview

- 3.2.1.1 The full relevant legislation and policy context for the MHPGC Project has been detailed in **Volume 1, Chapter 5: Policy and Legislation, of the PEIR**. This section sets out the legislation and planning policy that is relevant to the terrestrial ecology and terrestrial and intertidal ornithology assessment.

3.2.2 Legislation

Habitats Regulations

- 3.2.2.1 The Council Directive 92/43/EEC (The Habitats Directive) entered into force in 1992 in the EU and aimed to maintain or restore natural habitats and species of importance (listed) to within a favourable conservation status (FCS). The Regulations which transpose the requirements of the Habitats and Bird Directives into UK and Scottish and are of relevance to the project, are listed below, and are hence referred to as the 'Habitats Regulations' (UK Government, 2017a).
- The Conservation of Offshore Habitats and Species Regulations 2017;
 - The Conservation of Habitats and Species Regulations 2017.
- 3.2.2.2 These requirements of the Habitats Regulations are met in the consenting process through the use of Habitat Regulations Assessment (HRA), which requires a project to demonstrate, using evidence, that there will be no Adverse Effects on the Integrity on the overall ecological coherence of the national site network (previously referred to as European sites). The sensitive sites (hosting habitats and species of value) include:
- SAC designated for Annex 1 habitats;
 - SPA designated for the protection of valued bird species.
- 3.2.2.3 Ramsar Sites, are also, as of 21 May 2026, covered by the regulations, following amendments introduced by the Planning and Infrastructure Act 2025.

Conservation of Habitats and Species Regulations 2017

- 3.2.2.4 The Conservation of Habitats and Species Regulations 2017 (as amended) (UK Government, 2017), transposes the EC Habitats Directive into national law and sets out the provisions for the protection and management of species and habitats of European importance, including the network of European Sites Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) across Europe. It extends to England and Wales onshore and within 12nm, and to a limited extent Scotland and Northern Ireland. Following the UK's exit from the European Union the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 was introduced to make the legislation operable in the UK and refers to the network of designated sites as the National Site Network on land and at sea, including both the inshore and offshore marine areas in the UK. The National Site Network includes existing SACs and SPAs alongside new SACs and SPAs designated under these Regulations.
- 3.2.2.5 In addition to providing for the designation and protection of the National Site Network, the Habitats Regulations provide strict protection for plant and animal species as EPS. Derogations from prohibitions are transposed into the Habitats Regulations by way of a licensing regime that allows an otherwise unlawful act to be carried out lawfully for specified reasons and providing certain conditions are met. Under the Habitats Regulations, competent authorities have a general duty, in the exercise of any of their functions, to have regard to the Habitats Directive and Birds Directive including in the granting of consents or authorisations. They may not authorise a plan or project that

may adversely affect the integrity of a European site, with certain exceptions (considerations of overriding public interest).

European Protected Species Legislation

- 3.2.2.6 European Protected Species (EPS) are animals and plants listed in Annex IV of the Habitats Directive, which are afforded protection under the Habitats Regulations. If an activity is likely to have a risk of disturbance or injury to an EPS, under law, a licence is required. These licences are often sought after consent and prior to construction, where detail of the project design is known, and the actual risk can be more accurately defined. These are transposed into UK legislation via the Habitats Regulations and amendments to the Wildlife & Countryside Act 1981 (as amended).

Convention of Wetlands of International Importance especially as Waterfowl Habitat 1971 (the 'Ramsar Convention')

- 3.2.2.7 The Ramsar Convention on Wetlands of International Importance (referred to as the Ramsar Convention; United Nations, 1994) is an international treaty for the conservation and sustainable use of designated wetland areas, known as Ramsar sites. The Ramsar Convention came into force in 1976.
- 3.2.2.8 Ramsar sites are wetlands of international importance designated under the criteria of the Ramsar Convention (i.e., the wetland supports 20,000 waterbirds and/or supports 1% of the individuals in a population of one species or subspecies of waterbird).
- 3.2.2.9 In the UK, Ramsar sites are protected under the national site network, in the same way as SPAs and SACs.

The Convention on the Conservation of European Wildlife and Natural Habitats 1979 (the 'Bern Convention')

- 3.2.2.10 The principal aims of the Bern Convention are the conservation and protection of the wild plant and animal species (and the natural habitats thereof) listed in Appendices I and II of the Convention (Council of Europe, 1979). It also seeks to increase cooperation between governments and to regulate the exploitation of species listed in Appendix III, which includes migratory fish species, cetaceans and pinnipeds.

The Convention on Migratory Species of Wild Animals 1979 (the 'Bonn Convention')

- 3.2.2.11 Provides protection for endangered migratory species (listed in Appendix I) and their habitats. Appendix II species are those that have an unfavourable conservation status that require international agreements for their conservation and management (United Nations, 1979). The legal requirement for the strict protection of Appendix I and Appendix II species is provided by the Wildlife & Countryside Act (1981) (UK Government, 1981).

The EU Water Framework Directive (2000/60/EC) (WFD) as enacted into domestic law by the Water Environment (Water Framework Directive) (England and Wales) (Amendment) Regulations 2017

The Water Framework Directive (WFD) originates from the EU but has been retained in UK law following the UK withdrawal from the EU (UK Government, 2017b). A fundamental requirement of the WFD is to attain 'Good Ecological Status', or 'Good Ecological Potential' within each defined water body by December 2027 at the latest and to ensure that any deterioration in status is prevented. The Eel (England and Wales) Regulations 2009

- 3.2.2.12 The Eel Regulations 2009 includes legal provisions to avoid actions that impede/obstruct eel migration/passage (UK Government 2009). The Regulations require that eel passes or screened be installed to facilitate safe passage of eels around man-made barrier to maintain their natural migration routes, and may impose 'close' seasons during critical periods of the life cycle of this species to support population recovery.

Natural Environment and Rural Communities (NERC) Act 2006

- 3.2.2.13 The Natural Environment and Rural Communities (NERC) Act places a duty on the Secretary of State to maintain lists of species and habitats which are regarded as being of principal importance for the conservation and enhancement of biodiversity in England (UK Government, 2006). These habitats of principal importance (HPI) and species of principal importance (SPI) are used to guide decision makers in implementing their duties to have regard to the conservation of biodiversity in England when carrying out their normal functions.

Countryside and Rights of Way Act 2000 ('the CROW Act')

- 3.2.2.14 The Countryside and Rights of Way Act (the 'CROW Act') 2000 details further measures for the management and protection of Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation (UK Government, 2000). The Act places a responsibility on public bodies/local authorities to enforce access and protection rules and to incorporate biodiversity considerations into their functions, with penalties for damage or misuse of land.

The Hedgerows Regulations 1997

- 3.2.2.15 The Hedgerows Regulations 1997 includes legal provisions that protect 'important' hedgerows from damage or destruction, where 'important' is defined as hedgerows that have existed for 30 years or more and satisfy at least one of the criteria listed in Part II of Schedule 1 of the Hedgerow Regulations (UK Government, 1997).

Badger Protection Act 1992

- 3.2.2.16 Badgers and their setts are fully protected under the Badger Protection Act of 1992 (UK Government, 1992). Under this legislation, it is considered an offense to:
- Intentionally capture, kill or injure a badger;
 - Damage, destroy or obstruct access to a badger's sett;
 - Disturb badgers in setts, treat a badger cruelly or bait/dig for badgers;
 - Deliberately send or intentionally allow a dog into a sett.
- 3.2.2.17 Licensing is therefore required for activities that would result in impacts to badgers and their setts.

Wildlife and Countryside Act 1981

- 3.2.2.18 The Wildlife and Countryside Act 1981 forms the basis of much of the statutory wildlife protection in the UK. Part I deals with the protection of plants, birds and other animals and Part II deals with the designation of SSSIs (UK Government, 1981).
- 3.2.2.19 The Act covers the following broad areas:
- Wildlife – listing endangered or rare species in need of protection and creating offences for killing, disturbing or injuring such species. Additionally, the disturbance of any nesting bird during breeding season is also noted as an offence, with further protection for species listed on Schedule 1. Measures for preventing the establishment of non-native plant and animal species as listed on Schedule 9 are also provided;
 - Nature Conservation – protecting those sites which are National Nature Reserves (NNR) and SSSIs;
 - Public Rights of Way – placing a duty on the local authority (to maintain a definitive map of footpaths and rights of way. It also requires that landowners ensure that footpaths and rights of way are continually accessible;
 - Miscellaneous General Provisions.
- 3.2.2.20 The Act is enforced by local authorities.

Salmon and Freshwater Fisheries Act 1975 (SAFFA) (UK Government, 1975)

- 3.2.2.21 The Salmon and Freshwater Fisheries Act (SAFFA) 1975 covers regulation of fisheries in England and Wales and includes legislation that restricts the introduction of polluting effluents, the obstruction of fish passage (screens, dams, weirs, culverts etc.), illegal means of fishing, permitted times of legal fishing and fishing licensing (which covers electric fishing).

The Environment Act 2021

- 3.2.2.22 The Environment Act 2021 (passed in November 2021) translates aspects of the government's "A Green Future: Our 25 Year Plan to Improve the Environment" into legislation (UK Government, 2021). The Act includes biodiversity elements such as Local Nature Recovery Strategies to support a Nature Recovery Network. The Local Nature Recovery Strategies are intended to guide where Public Authorities focus their nature recovery efforts. The Act further introduced the 'biodiversity duty' which states that all Public Authorities have a duty to conserve and enhance biodiversity including restoring and enhancing species populations and habitats, as well as protecting them, and must have regard to relevant Local Nature Recovery Strategies in the process.
- 3.2.2.23 Biodiversity Net Gain (BNG) will be mandatory for projects requiring development consent under the Planning Act 2008 where an application for development consent is made on or after 2 November 2026. Schedule 15 of The Environment Act 2021 introduces the statutory framework for projects requiring development consent to achieve a minimum of 10% BNG through the insertion of Schedule 2A into the Planning Act 2008. Mandatory BNG applies to projects requiring development consent, or components of these projects, as far as the mean low-water mark, including the intertidal zone but not the marine environment beyond it. (Department for Environment, Food and Rural Affairs (DEFRA), 2026)

The Environmental Targets (Biodiversity) (England) Regulations 2023 (UK Government, 2023)

- 3.2.2.24 The Environmental Targets (Biodiversity) Regulations 2023 sets out legally binding targets to protect the environment, improve air and river quality, and boost nature (UK Government, 2023). With reference to freshwater and marine biodiversity; Atlantic salmon (*Salmo salar*), brown trout (*Salmo trutta*), European eel (*Anguilla Anguilla*), and white-clawed crayfish (*Austropotamobius pallipes*) are listed as priority species in the framework.

3.2.3 National policy

National Policy Statements

- 3.2.3.1 National Policy Statements (NPS) set out the primary policy framework for a Development Consent Order (DCO) under which the MHPGC Project will be considered. This framework includes guidelines, requirements and criteria that the MHPGC Project must meet to obtain consent and proceed with development. **Table 3-1** provides details of the NPS relevant to terrestrial ecology and terrestrial and intertidal ornithology and how and where they are covered in the PEIR:
- Overarching NPS for energy (EN-1) (Department for Energy Security and Net Zero (DESNZ), 2025a);
 - NPS for renewable energy infrastructure (EN-3) (DESNZ, 2025b);
 - NPS for electricity networks infrastructure (EN-5) (DESNZ, 2025c).

Table 3-1: Summary of the NPS provisions relevant to terrestrial ecology and terrestrial and intertidal ornithology

Summary of relevant NPS provisions	How and where this is considered in the PEIR
NPS EN-1	
The Government has set 13 legally binding targets for England under the Environment Act 2021, covering the areas of: biodiversity; air quality; water; resource efficiency and waste reduction; tree and woodland cover; and Marine Protected Areas (MPAs). Meeting the legally binding targets will be a shared endeavour that will require a whole of government approach to delivery. The Secretary of State have regard to the ambitions, goals and targets set out in the Government's Environmental Improvement Plan 2023 for improving the natural environment and heritage. This includes having regard to the achievement of statutory targets set under the Environment Act. (NPS EN-1, paragraph 4.3.20).	The baseline terrestrial ecology and terrestrial and intertidal ornithology environment is described in Section 3.4. Designated sites, protected species, SPI and key features are stated in the relevant Survey Annex in Volume 3, Annexes 3.1 to 3.13 of the PEIR. Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10. Opportunities and details surrounding BNG are set out in in Volume 3, Annex 3.6: Initial Terrestrial and Intertidal Biodiversity Net Gain Assessment, of the PEIR. An air quality assessment has been undertaken for the onshore environment within the MHPGC Project Study Area within Volume 3, Chapter 7: Onshore Air Quality, of the PEIR. The findings of that assessment have been considered in identifying likely significant effects on biodiversity receptors in this chapter at Section 3.9.2.
Environmental net gain is an approach to development that aims to leave the natural environment in a measurably better state than beforehand. Projects should therefore not only avoid, mitigate and compensate harms, following the mitigation hierarchy, but also consider whether there are opportunities for enhancements. (NPS EN-1, paragraph 4.6.1).	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10. The approach to mitigation is discussed in Section 3.8. Opportunities and details surrounding BNG are set out in Volume 3, Annex 3.6: Initial Terrestrial and Intertidal Biodiversity Net Gain Assessment, of the PEIR. In line with CoT57 An Outline Biodiversity Gain Plan will be prepared and submitted with the application for development consent.
BNG is an essential component of environmental net gain. Projects in England should consider and seek to incorporate improvements in natural capital, ecosystem services and the benefits they deliver when planning how to deliver BNG. (NPS EN-1, paragraph 4.6.2).	
Currently BNG policy in England only applies to terrestrial and intertidal components of projects. Principles for Marine Net Gain are currently being rolled out by the Government, who will provide guidance in due course. There are provisions in the Environment Act 2021 to allow Marine Net Gain to be made mandatory for NSIPs in the future. (NPS EN-1, paragraph 4.6.3).	
Onshore or offshore Energy NSIPs should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity, and the wider environment where possible. (NPS EN-1, paragraph 4.6.6).	
In England, applicants for onshore elements of any development are encouraged to use the latest version of the biodiversity metric to calculate their biodiversity baseline and present planned biodiversity net gain outcomes. This calculation data should be presented in full as part of their application. (NPS EN-1, paragraph 4.6.7).	
Where possible, this data should be shared, alongside a completed biodiversity metric calculation, with the Local Authority, Natural England and, where relevant, the EA, for discussion at the preapplication stage as it can help to	

Summary of relevant NPS provisions	How and where this is considered in the PEIR
highlight biodiversity and wider environmental issues which may later cause delays if not addressed. (NPS EN-1, paragraph 4.6.8)	
Biodiversity net gain should be applied after compliance with the mitigation hierarchy and does not change or replace existing environmental obligations. (NPS EN-1, paragraph 4.6.10),	
Biodiversity net gain can be delivered onsite or wholly or partially offsite. The NPS encourages details of any off-site delivery of biodiversity net gain to be set out within the application for development consent. (NPS EN-1, paragraph 4.6.11),	
When delivering biodiversity net gain off-site, developments should do this in a manner that best contributes to the achievement of relevant wider strategic outcomes, for example by increasing habitat connectivity, enhancing other ecosystem service outcomes, or considering use of green infrastructure strategies. Reference should be made to relevant national or local plans and strategies, to inform off-site biodiversity net gain delivery. If published, the relevant strategy is the Local Nature Recovery Strategy (LNRS). If an LNRS has not been published, the relevant consenting body or planning authority may specify alternative plans, policies or strategies to use. (NPS EN-1, paragraph 4.6.12),	
In addition to delivering biodiversity net gain, developments may also deliver wider environmental gains and benefits to communities relevant to the local area, and to national policy priorities, such as: reductions in GHG emissions, reduced flood risk, improvements to air, water or soil quality, climate adaptation, landscape enhancement, increased access to natural greenspace, and/or, the enhancement, expansion or provision of trees and woodlands.	
The scope of potential gains will be dependent on the type, scale, and location of specific projects. Applicants should look for a holistic approach to delivering wider environmental gains and benefits through the use of nature-based solutions and Green Infrastructure. (NPS EN-1, paragraph 4.6.13),	
The Environment Act 2021 mandated the preparation of LNRSs across England. They are a new system of spatial strategies for nature recovery and will play a major role in providing detail on the best locations to create, enhance and restore nature and deliver wider environmental benefits. LNRSs will also agree priorities for nature recovery and map the most valuable existing areas for nature. They will be critical in delivering government targets for species abundance and habitat creation commitments, as well as other pressing environmental outcomes for water and flood risk, carbon and tree planting and woodland creations. LNRSs will also drive the creation of a Nature Recovery Network (NRN), a major commitment in the government's Environmental Improvement Plan. (NPS EN-1, paragraph 4.6.14)	
Although achieving biodiversity net gain is not currently an obligation on applicants, Schedule 15 to the Environment Act 2021 contains provisions which, when commenced, mean the Secretary of State may not grant an application for a DCO	

Summary of relevant NPS provisions	How and where this is considered in the PEIR
unless satisfied that a biodiversity gain objective is met in relation to the onshore development in England to which the application relates (NPS EN-1, paragraph 4.6.19).	
The NPPF (NPPF Section 19 – see Table 3.2 below) sets out planning policies for England in relation to planning for biodiversity and geological conservation and the Natural Environment Planning Practice Guidance provides advice on the implementation of these policies (NPS EN-1, paragraph 5.4.3).	
The highest level of biodiversity protection is afforded to sites identified through international conventions. The Habitats Regulations set out sites for which an HRA will assess the implications of a plan or project, including Special Areas of Conservation and Special Protection Areas (NPS EN-1, paragraph 5.4.4).	As part of this chapter the process of identifying designated sites has been undertaken in accordance with the approach set out in Section 3.4 . Designated sites are stated in the relevant Survey Annex in Volume 3, Annexes 3.1 to 3.13, of the PEIR and listed in Section 3.4.6 of this chapter.
Energy infrastructure projects have the potential to deliver significant benefits and enhancements beyond Biodiversity Net Gain, which result in wider environmental gains (see Section 4.6 on Environmental and Biodiversity Net Gain). The scope of potential gains will be dependent on the type, scale, and location of each project (NPS EN-1, paragraph 5.4.22).	Assessment of potential impacts on designated sites from the MHPGC Project are included within Section 3.9 . The approach to mitigation is discussed in Section 3.8 .
As a matter of policy, the following should be given the same protection as sites covered by the Habitats Regulations and an HRA will also be required (NPS EN-1, paragraph 5.4.5): • Potential Special Protection Areas and possible Special Areas of Conservation; • Listed or proposed Ramsar sites; • Sites identified, or required, as compensatory measures for adverse effects on Special Protection Areas, Special Areas of Conservation, and any of the other sites covered by this paragraph.	A Habitats Regulations Assessment (HRA) has been prepared for the MHPGC Project to assess the potential for the MHPGC Project to affect designated sites. This assessment is set out in Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR .
Many SSSIs are also designated as sites of international importance and will be protected accordingly. Those that are not, or those features of SSSIs not covered by an international designation, should be given a high degree of protection. Most National Nature Reserves are notified as SSSIs (NPS EN-1, paragraph 5.4.7).	As part of this chapter the process of identifying designated sites has been undertaken in accordance with the approach set out in Section 3.4 . Designated sites are stated in the relevant Survey Annex in Volume 3, Annexes 3.1 to 3.13, of the PEIR and listed in Section 3.4.6 of this chapter.
Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits (including need) of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs (NPS EN-1, paragraph 5.4.8).	Assessment of potential impacts on designated sites from the MHPGC Project are included within Section 3.9 . The approach to mitigation is discussed in Section 3.8 .
Sites of regional and local biodiversity and geological interest, which include Regionally Important Geological Sites, Local Nature Reserves and Local Wildlife Sites, are areas of substantive nature conservation value and make an important contribution to ecological networks and nature's recovery. They can also provide wider benefits including public access (where agreed), climate mitigation and helping to tackle air pollution (NPS EN-1, paragraph 5.4.13).	
National planning policy expects plans to identify and map Local Wildlife Sites, and to include policies that not only secure their protection from harm or loss but also help to	

Summary of relevant NPS provisions	How and where this is considered in the PEIR
enhance them and their connection to wider ecological networks (NPS EN-1, paragraph 5.4.14).	
Irreplaceable habitats are habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity (NPS EN-1, paragraph 5.4.15).	The baseline terrestrial ecology and terrestrial and intertidal ornithology environment is described in Section 3.4 Designated sites, protected species, SPI, HPI and key features are stated in the relevant Survey Annex in Volume 3, Annexes 3.1 to 3.13, of the PEIR .
Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Keepers of Time, the government's policy for ancient and native trees and woodlands in England sets out the government's commitment to maintain and enhance the existing area of ancient woodland, maintain and enhance the existing resource of known ancient and veteran trees, excluding natural losses from disease and death, and to increase the percentage of ancient woodland in active management. Ancient and veteran trees found outside ancient woodland are also particularly valuable. Other types of irreplaceable habitats include blanket bog, limestone pavement, coastal sand dunes, spartina salt marsh swards, mediterranean saltmarsh scrub, and lowland fen (NPS EN-1, paragraph 5.4.16).	A full review of notable habitats, including ancient woodland, was completed as part of the baseline characterisation for the MHPGC Project. Attention was paid to features such as ancient or veteran trees during walkover surveys. Any such features were recorded as target notes during UKHab surveys. The detailed methodologies followed for these surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR . The findings of the UKHab surveys are set out in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR . No ancient woodland, veteran trees or irreplaceable habitats have been identified in surveys to date.
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 (including those outside England and Wales), on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats (NPS EN-1, paragraph 5.4.18).	The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5 and which sites were scoped in/scoped out and justification for doing so are detailed in Section 3.6 The approach to mitigation is discussed in Section 3.8 .
The applicant should provide environmental information proportionate to the infrastructure where EIA is not required to help the Secretary of State consider thoroughly the potential effects of a proposed project. (NPS EN-1, paragraph 5.4.19).	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.9 .
Many individual species receive statutory protection under a range of legislative provisions. Other species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales, as well as for their continued benefit for climate mitigation and adaptation and thereby requiring conservation action (NPS EN-1, paragraph 5.4.17).	The baseline terrestrial ecology and terrestrial and intertidal ornithology environment is described in Section 3.4 Designated sites, protected species, SPI, HPI and key features are stated in the relevant Survey Annex in Volume 3, Annexes 3.1 to 3.13, of the PEIR .
Applicants should include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both construction and operational phases (NPS EN-1, paragraph 5.4.33).	The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5 , and which sites were scoped in/scoped out and justification for doing so are detailed in Section 3.6 . The approach to mitigation is discussed in Section 3.8 . This will also be included within the ES.
Applicants should consider any reasonable opportunities to maximise the restoration, creation, and enhancement of wider biodiversity, and the protection and restoration of the ability of habitats to store or sequester carbon as set out under Section 4.6 (NPS EN-1, paragraph 5.4.34).	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.9 . Opportunities and details surrounding BNG are set out in Volume 3, Annex 3.14: Initial Terrestrial and

Summary of relevant NPS provisions	How and where this is considered in the PEIR
Consideration should be given to improvements to, and impacts on, habitats and species in, around and beyond developments, for wider ecosystem services and natural capital benefits, beyond those under protection and identified as being of principal importance. This may include considerations and opportunities identified through Local Nature Recovery Strategies, and national goals and targets set through the Environment Act 2021 and the Environmental Improvement Plan (NPS EN-1, paragraph 5.4.35).	Intertidal Biodiversity Net Gain Assessment, of the PEIR.
The design of energy NSIP proposals will need to consider the movement of mobile/migratory species such as birds, fish and marine and terrestrial mammals and their potential to interact with infrastructure. As energy infrastructure could occur anywhere within England and Wales, both inland and onshore and offshore, the potential to affect mobile and migratory species across the UK and more widely across Europe (transboundary effects) requires consideration, depending on the location of development. Applicants should consider relevant plan policies in marine plans in England (NPS EN-1, paragraph 5.4.23).	Transboundary effects are considered within Section 3.11 of this chapter.
Applicants should include appropriate avoidance, mitigation, compensation and enhancement measures as an integral part of the proposed development. In particular, the applicant should demonstrate that (NPS EN-1, paragraph 5.4.36): • During construction, they will seek to ensure that activities will be confined to the minimum areas required for the works; • The timing of construction has been planned to avoid or limit disturbance; • During construction and operation best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised, including as a consequence of transport access arrangements; • Habitats will, where practicable, be restored after construction works have finished; • Opportunities will be taken to enhance existing habitats rather than replace them, and where practicable, create new habitats of value within the site landscaping proposals. Where habitat creation is required as mitigation, compensation, or enhancement, the location and quality will be of key importance. In this regard habitat creation should be focused on areas where the most ecological and ecosystems benefits can be realised; • Mitigations required as a result of legal protection of habitats or species will be complied with.	The approach to mitigation is discussed in Section 3.8. The mitigation hierarchy has been followed in identifying the scope of works and mitigation to be embedded in the scheme. Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR also sets out the approach to site selection and consideration of alternative options.
NPS EN-3	
Paragraph 2.3.6: States that any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the urgent need for this type of infrastructure.	The project need is discussed in Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR.
Paragraph 2.5.2 require proposals for renewable energy infrastructure to demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10.

Summary of relevant NPS provisions	How and where this is considered in the PEIR
existence/co-location with other marine and terrestrial uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.	
Paragraph 2.8.112 States: An assessment of the effects across the intertidal/coastal zone should demonstrate compliance with mitigation measures and include information, where relevant, about: - Any alternative landfall sites that have been considered by the applicant during the design phase and an explanation for the final choice; - Any alternative cable installation methods that have been considered by the applicant during the design phase and an explanation for the final choice; - Potential loss of habitat; - Disturbance during cable installation, maintenance/repairs and removal (decommissioning); - Potential risk from invasive and non-native species; - Predicted rates at which the intertidal zone might recover from temporary effects, based on existing monitoring data; - Protected sites.	Consideration of alternative landfall sites is included in Volume 1, Annex 3.1: Selection and Refinement of Cable Landfall, of the PEIR. Consultation with relevant statutory and non-statutory stakeholders has been carried out through the Evidence Plan Process (EPP) and Expert Working Groups (EWGs) and is discussed in Section 3.3. Baseline survey methodologies have also been presented and disseminated to the terrestrial ecology and terrestrial and intertidal ornithology EWG. The approach to mitigation is discussed in Section 3.8. Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10.
Paragraph 2.8.187 states: At the earliest possible stage, alternative ways of working should be employed to avoid environmental impacts. Where impacts cannot be avoided, measures to reduce and mitigate impacts should be employed.	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10 .
NPS EN-5	
Paragraph 2.2.10 states: Applicants must take into account Schedule 9 to the Electricity Act 1989 to preserve natural beauty, conserve flora and fauna and mitigate as is reasonable. In formulating proposals for new electricity networks infrastructure Applicants should “do what [they] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.”	Impacts to terrestrial ecology and terrestrial and intertidal ornithology are assessed based on the maximum design scenario (MDS) as set out in Table 3 . The assessment of the potential impacts of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology is set out in Section 3.10 . The approach to mitigation is discussed in Section 3.8 .
Paragraph 2.5.1 states: Electricity networks infrastructure can allow for excellent opportunities to: i.e. reconnect important habitats via green corridors, biodiversity stepping zones, and reestablishment of appropriate hedgerows.	A survey of hedgerows has been undertaken, as described in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR . Opportunities for enhancements and details surrounding BNG are set out in Volume 3, Annex 3.14: Initial Biodiversity Net Gain Assessment, of the PEIR .
Paragraph 2.9.25 states: In such cases the Secretary of State should only grant development if they are satisfied that the benefits accruing from the former proposal clearly outweigh any environmental impacts that it presents, the mitigation hierarchy has been followed, and that any technical obstacles associated with it are surmountable.	The approach to mitigation is discussed in Section 3.8 .

National Planning Policy Framework

- 3.2.3.2 The National Planning Policy Framework (NPPF) has the potential to be considered important and relevant to the Secretary of State (SoS) consideration of the MHPGC Project (Department for Levelling Up, Housing and Communities, 2026). **Table 3-2** provides details of the elements of the

NPPF that are relevant to terrestrial ecology and terrestrial and intertidal ornithology and how and where they are covered in the PEIR or will be covered within the ES.

Table 3-2: Summary of NPPF requirements relevant to terrestrial ecology and terrestrial and intertidal ornithology

Policy	Key Provisions	How and where this is considered in the PEIR
Planning policies and decisions should contribute to conserving and enhancing the natural and local environment. (NPPF Section 19)	Paragraph N1 states: Planning policies and decisions should safeguard and enhance the natural and local environment by using Local Nature Recovery Strategies, Protected Landscape Management Plans, River Basin Management Plans, National Forest Strategies, Community Forest Plans and other relevant evidence at the most appropriate level to: a) Set out the hierarchy of international, national and locally designated sites and areas of importance for their landscape, geodiversity or biodiversity value in the plan area, and identify other features which require particular consideration in managing development due to their environmental value such as chalk streams; b) Identify opportunities for the conservation, enhancement and recovery of landscapes, sensitive waterbodies, habitats and priority or threatened species, including through habitat restoration, the use of nature-based solutions, and the creation and strengthening of ecological networks that are more resilient to current and future pressures (including opportunities which exist at a catchment or landscape scale across plan boundaries); c) Steer the location of development, including through site allocations, in ways which utilise land of least environmental value where that would be consistent with other policies in this Framework. This should include limiting the scale and extent of development within Protected Landscapes, avoiding the use of higher quality agricultural land where land of poorer quality is available and avoiding and minimising harm to designated sites of importance for nature. Areas which could become of particular importance for nature identified in Local Nature Recovery Strategies should be taken into account as opportunities to integrate development with environmental restoration, but should not necessarily preclude the allocation of land for development; and d) Set out standards for green infrastructure provision, in a way which complements and/or incorporates those for recreational land (as set out in policy HC1). These should draw upon Natural England's Green Infrastructure Standards for England, tailored as necessary to local circumstances.: 2. Development plans should only set local standards for biodiversity net gain which are in excess of the statutory net gain requirement where this is for specific site allocations, and is fully	The approach to mitigation is discussed in Section 3.8. Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10. The approach to site selection is discussed in Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR.

Policy	Key Provisions	How and where this is considered in the PEIR
	justified and deliverable. Local standards should not extend to categories of development which are exempt from statutory biodiversity net gain.	
Improving the natural environment. (NPPF Section 19)	Paragraph N2 states: To contribute positively to the natural environment, and support nature's recovery, development proposals should: - Consider the environmental qualities of land proposed for development, including habitats, landscape character and the natural beauty of the countryside, and identify opportunities for those qualities to be conserved or enhanced (including through requirements for biodiversity net gain where these apply); - Take into account the quality of agricultural land (including that classified as best and most versatile agricultural land, and its grade), and if significant development of agricultural land is necessary, use areas of poorer quality land where possible; - Take suitable opportunities to connect to and strengthen ecological networks that extend beyond the site, drawing on the measures proposed by Local Nature Recovery Strategies, National Forest Strategies and Community Forest Plans, where present, and other relevant assessments; - Conserve and enhance existing natural features of visual, historic or nature conservation value (such as established trees and hedgerows) where possible; and use appropriate landscaping to help create a well-designed place and integrate the development into its surroundings; - Use green infrastructure provided as part of the scheme and nature-based solutions to secure multiple benefits: such as for biodiversity; surface water and pollution management (including maintaining flow rates and water quality); climate change mitigation and adaptation, and recreation; - Minimise any adverse impacts on biodiversity and include features which support priority or threatened species such as swifts, bats and hedgehogs. Development proposals should incorporate integrated nest boxes (commonly known as swift bricks) into their construction unless there are compelling technical reasons which prevent their use, or would make them ineffective; and - ensure that green infrastructure and other features to support nature are located and designed to minimise risk of future failure, and that appropriate measures are in place for any necessary long-term management.	The approach to site selection is discussed in Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR. The baseline terrestrial ecology and terrestrial and intertidal ornithology is described in Section 3.4. All relevant designated sites and areas for wildlife conservation and species afforded extra protections under The Conservation of Habitats and Species Regulations 2017 and Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are described in Section 3.4. Mitigation measures are discussed in Section 3.8. An Initial Biodiversity Net Gain Assessment has been undertaken for the project in Volume 3, Annex 3.6: Initial Terrestrial and Intertidal Biodiversity Net Gain Assessment, of the PEIR. In line with CoT57 An Outline Biodiversity Gain Plan will be prepared and submitted with the application for development consent.
Improving the natural environment. (NPPF Section 19)	Paragraph N2 (2) states: If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated	The approach to mitigation is discussed in Section 3.8 . Construction, operation and maintenance and

Policy	Key Provisions	How and where this is considered in the PEIR
	or, as a last resort, compensated for, then the development should be refused. (3) Development proposals may incorporate biodiversity enhancements which exceed the statutory objective for biodiversity net gain, but this should only be a requirement where it is set out in up-to-date development plan policies for specific site allocations. Decision-makers should not give weight to other development plan policies which require biodiversity gains which go beyond the statutory framework, including where a policy requires gains for development proposals which are exempt.	decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10. An Initial Biodiversity Net Gain Assessment has been undertaken for the project in Volume 3, Annex 3.6: Initial Terrestrial and Intertidal Biodiversity Net Gain Assessment, of the PEIR. In line with CoT57 An Outline Biodiversity Gain Plan will be prepared and submitted with the application for development consent.
Areas of particular importance for biodiversity and geodiversity (NPPF Section 19)	Paragraph N6 states: To support the conservation of important habitats, species and sites of geodiversity value, development proposals affecting: a. A site of international importance, which for the purpose of this policy is a habitats site, should be refused unless: i. An appropriate assessment has concluded that the proposal will not adversely affect the integrity of the site (either individually or in combination with other developments), or the proposal can satisfy the derogation tests; and/or ii. The impact of development on the relevant protected features of the protected site is being addressed through an Environmental Delivery Plan which has been made and the developer has committed to paying the nature restoration levy. b. A site of national importance, which for the purpose of this policy is one designated as a Site of Special Scientific Interest, should only be supported if: i. There would be no adverse effect (either individually or in combination with other developments) on the site's features of special scientific interest; or ii. The benefits of the development in the location proposed clearly outweigh both likely impact on the features of special scientific interest, and any broader impact on the national network of Sites of Special Scientific Interest; or iii. The impact of development on the relevant protected feature of the protected site is being addressed through an Environmental Delivery Plan which has been made and the developer has committed to paying the nature restoration levy. A site of local importance, which for the purpose of this policy is one designated as Local Nature Reserve or identified as a local wildlife site, local geological site or equivalent in the development plan, should only be supported if:	All relevant designated sites are described in Section 3.4. Potential interactions with designated sites are assessed within Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.

Policy	Key Provisions	How and where this is considered in the PEIR
	i. There would not be a significant adverse effect on the integrity of the site; or ii. The benefits of development in the location proposed clearly outweigh the likely impact on the features which make the site valuable for nature conservation.	
Areas of particular importance for biodiversity and geodiversity (NPPF Section 19)	2. Irrespective of a site's status in nature conservation terms, development proposals which would entail the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists. 3. This policy applies to development on land inside or outside a designated area, if it would have an impact on the identified biodiversity or geodiversity value of the area concerned.	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10. This will also be included within the ES. Potential interactions with designated sites are assessed within Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.

3.2.4 Marine planning policy context

3.2.4.1 The following marine plans are relevant to terrestrial ecology and terrestrial and intertidal ornithology in the context of intertidal ornithology, and have informed the assessment of preliminary effects in this chapter, their relevance to the MHPGC Project is outlined in **Table 3-3**:

- The UK Marine Policy Statement (MPS) (DEFRA, 2020);
- Northeast Inshore and Offshore Marine Plan (MMO, 2024).

Table 3-3: Marine planning policy relevant to terrestrial ecology and terrestrial and intertidal ornithology

Marine plan description	How and where this is considered in the PEIR
UK Marine Policy Statement (MPS)	
This is a policy framework prepared and adopted under section 44 of the Marine and Coastal Access Act 2009, which gives it a statutory basis. The framework aims to achieve sustainable development in the UK's marine area by balancing economic, social, and environmental considerations.	Where impacts are considered possible for intertidal ornithology these are covered in Section 3.9 . Where impacts on the offshore/marine environment, with respect to offshore ecology and ornithology, are considered possible, these are covered in Volume 2, Chapter 3 to 6, of the PEIR .
Northeast Inshore and Offshore Marine Plan	
NE-MPA-1	
• Proposals that support the objectives of MPAs and the ecological coherence of the MPA network will be supported; • Proposals that may have adverse impacts on the objectives of MPAs must demonstrate that they will, in order of preference: – a. avoid; – b. minimise; – c. mitigate adverse impacts,	Where impacts are considered possible for intertidal ornithology, these are covered in Section 3.9 . Where impacts on the offshore/marine environment are possible, including intertidal ecology in the context of MPAs, these are covered in Volume 2, Chapter 5 and 6 of the PEIR .

Marine plan description	How and where this is considered in the PEIR
– d. with due regard given to statutory advice on an ecologically coherent network.	
NE-BIO-1/2	
• Proposals that enhance the distribution of priority habitats/habitat adaptation/connectivity and priority/native species will be supported. • Proposals that may have significant adverse impacts on the distribution of priority habitats/habitat adaptation/connectivity and priority species/native species migration must demonstrate that they will, in order of preference: – a. avoid; – b. minimise; – c. mitigate; – d. compensate for significant adverse impacts.	Where impacts are considered possible, these are covered in Section 3.9 . Where impacts on the offshore/marine environment are considered possible, these are covered in Volume 2, Chapter 3 to 6, of the PEIR .
NE-CE-1	
• Proposals which may have adverse cumulative effects with other existing, authorised or reasonably foreseeable proposals must demonstrate that they will, in order of preference: – a. avoid; – b. minimise; – c. mitigate significant adverse cumulative and/or in combination effects.	Where cumulative impacts are considered possible, these are covered in Section 3.10 . Where impacts on the offshore/marine environment are considered possible, these are covered in Volume 2, Chapter 3 to 6, of the PEIR .
NE-UWN-2	
• Proposals that result in the generation of impulsive or non-impulsive noise must demonstrate that they will, in order of preference: – a. avoid; – b. minimise; – c. mitigate significant adverse impacts on highly mobile species; – d. if it is not possible to mitigate significant adverse impacts, proposals must state the case for proceeding	Where noise impacts are possible these are covered in Section 3.9 . Where impacts on the offshore/marine environment are possible, these are covered in Volume 2, Chapter 3 to 6, of the PEIR .

3.2.5 Local policy context

3.2.5.1 The MHPGC Project lies within the jurisdiction of Durham County Council. The following local policy that is relevant to terrestrial ecology and terrestrial and intertidal ornithology and has informed the assessment of preliminary effects in this chapter, their relevance to the MHPGC Project is outlined in **Table 3-4**.

- County Durham Plan 2020-2035 (Durham Local Plan) (Durham County Council, 2020);
- County Durham Landscape Strategy (Durham County Council, 2008).

Table 3-4: Local policy relevant to terrestrial ecology and terrestrial and intertidal ornithology

Policy description	How and where considered in the PEIR
Durham Local Plan	
Policy 27: States Proposals will be permitted for new or extensions to existing energy generation, utility transmission facilities, telecommunication masts or other broadcast and broadband equipment which facilitate the electronic transfer of data where it can be demonstrated that the scheme will not cause significant adverse impacts or that its benefits outweigh any adverse negative effects.	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10 , with specific reference to proposed mitigation measures, as per Section 3.8 .
Policy 41: States proposals for new development will not be permitted if significant harm to biodiversity or geodiversity resulting from the development cannot be avoided, or appropriately mitigated, or, as a last resort, compensated for. Proposals for new development will be expected to minimise impacts on biodiversity by retaining and enhancing existing biodiversity assets and features and providing net gains for biodiversity including by establishing coherent ecological networks.	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10 . Embedded mitigation proposed as part of MHPGC is detailed in Section 3.8 . An Initial Biodiversity Net Gain Assessment has been undertaken for the project in Volume 3, Annex 3.6: Initial Terrestrial and Intertidal Biodiversity Net Gain Assessment, of the PEIR . In line with CoT57 an Outline Biodiversity Gain Plan will be prepared and submitted with the application for development consent. It will include details of the MHPGC Project's assessment and the measures proposed to secure and deliver the project's statutory Biodiversity Gain objective. A Detailed Biodiversity Gain Plan will be developed substantially in accordance with the outline plan.
Policy 42: States development that has the potential to have an effect on internationally designated site(s), (including all development within 0.4 kilometres of the sites, as shown on Map B of the policies map document), either individually or in-combination with other plans or projects, will need to be screened in the first instance to determine whether significant effects on the site are likely and, if so, will be subject to an Appropriate Assessment.	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10 . Potential interactions with designated sites are assessed within Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR .
Policy 43: States in all cases where development impacts adversely on a national or local designated site (i.e. SSSI, NNR, Local Nature Reserve (LNR), Local Wildlife Site (LWS)), mitigation, or as a last resort compensation, must be provided and it must be demonstrated that the proposed mitigation or compensatory measures are appropriate to the designations assigned to the site and deliver clear net gains for the habitats and/or species assemblages the site is designated for.	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology; and designated sites are assessed in Section 3.10 as well as Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR .
County Durham Landscape Strategy	

Policy description	How and where considered in the PEIR
The County Durham Landscape Strategy covers the broad issues of climate change, biodiversity, geodiversity, cultural heritage, tranquillity and green infrastructure. The biodiversity objectives aims are to: • Support and encourage the conservation and enhancement of biodiversity; • Promote and develop a landscape scale approach to Biodiversity in County Durham • Promote an integrated approach to action on landscape and biodiversity and particularly through the use of natural area partnerships; • Secure a 'positive audit' for biodiversity in new development; • Promote biodiversity in landscape design.	Construction, operation and maintenance and decommissioning effects of the MHPGC Project relevant to terrestrial ecology and terrestrial and intertidal ornithology are assessed in Section 3.10. Biodiversity Net Gain is detailed in Appendix 3.6: Initial Biodiversity Net Gain Assessment, of the PEIR.

3.3 Consultation and engagement

3.3.1 Scoping

- 3.3.1.1 A Scoping Report for the MHPGC Project was issued to the Planning Inspectorate (PINS) and MD-LOT in February 2025 (RPS, 2025). Following consultation with the appropriate statutory bodies, PINS (on behalf of the SoS) and MD-LOT both provided Scoping Opinions in March 2025 (PINS, 2025; MD-LOT, 2025, respectively). Additional feedback on the proposed EIA methodology and scope, as set out in the EIA Scoping Report, was sought from the MMO.
- 3.3.1.2 **Table 1-1** in sets out the key comments raised during the scoping process specific to terrestrial ecology and terrestrial and intertidal ornithology, with details of how these comments have been addressed within the PEIR.

Table 3-5: Summary of scoping responses relevant to terrestrial ecology and terrestrial and intertidal ornithology

Comment	How and where this is considered in the PEIR
Durham County Council	
The ES should thoroughly assess the potential for the proposal to affect designated sites. European sites (e.g. designated Special Areas of Conservation and Special Protection Areas) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (as amended). In addition paragraph 194 of the NPPF requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site. Should a Likely Significant Effect on a European/Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an	A Habitats Regulations Assessment (HRA) has been prepared for the MHPGC Project to assess the potential for the MHPGC Project to affect designated sites. This assessment is set out in Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.

Comment	How and where this is considered in the PEIR
Appropriate Assessment, in addition to consideration of impacts through the EIA process	
Consideration of marine and coastal habitats, as well as the potential effects on marine species, is an important aspect of the assessment, particularly in relation to construction and operational impacts. The inclusion of offshore ecology within the EIA ensures that potential interactions with designated sites, protected species, and marine ecosystems are adequately evaluated.	Consideration of the offshore environment and the potential for construction and operational impacts from the MHPGC Project on offshore ecology and ornithology, including marine protected species and marine ecosystems, are set out within Volume 2, Chapter 2 to 6, of the PEIR. Potential interactions with coastal designated sites are assessed within Section 3.9 as well as Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.
The Environmental Statement (ES) should provide a robust methodology for assessing ecological effects, including appropriate baseline surveys, impact assessments, and mitigation measures. Where relevant, assessments should align with best practice guidance and statutory requirements to ensure that any potential ecological impacts are effectively identified and addressed. Overall, the proposed scope for the ecological assessments is considered appropriate, and no concerns have been identified at this stage regarding the inclusion of these topics within the EIA.	The terrestrial ecology and terrestrial and intertidal ornithology baseline surveys have been completed for the MHPGC project. The detailed methodologies followed for these surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The findings of the baseline surveys are set out in Volume 3, Annex 3.1 to 3.13, of the PEIR. The impact assessments is set out in Section 3.9 and mitigation measures in Section 3.8 as well as Section 3.9.
Environment Agency (EA)	
Omission of recent (2024) legislation pertaining to biodiversity net gain (BNG). Risk of not considering new environmental definitions in legislation in respect of BNG, such as 'irreplaceable habitat', along with related obligations with regard to said habitats. Please include the following legislation, policy and guidance: Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. (Refer Appendix C3)	A full suite of terrestrial ecology and terrestrial and intertidal ornithology field surveys have been undertaken since the scoping stage to inform the current baseline. The baseline surveys completed to inform the impact assessment are set out in Section 3.4. The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024 did not initially apply to projects requiring development consent however, from 2 November 2026 there will be a legal requirement under the Planning Act 2008 for projects requiring development consent to deliver a BNG commitment. An initial BNG assessment has been prepared for the MHPGC Project following current DEFRA guidance for NSIPs, which is applicable to projects requiring development consent and is set out in Volume 3, Annex 3.6: Initial Biodiversity Net Gain Assessment, of the PEIR.
Proposed Zone of Influence (Zol) may not be sufficient to capture all potential impacts on waterbodies. Risk of not considering effects on ecological features beyond this Zol (e.g. features located greater than 250m downstream). Hydrological connectivity should be considered when defining Zol for watercourses. Where migratory fish could be affected, the Zol may need to be much wider. The most precautionary approach would be to consider all downstream habitat and consider upstream habitats when considering migratory fish. (Refer Appendix C4)	Hydrological connectivity, and the associated potential for upstream and downstream effects on watercourses within the MHPGC Project PEIR Red Line Boundary: Onshore, has been evaluated initially through Volume 3, Chapter 1: Water Resources and Flood Risk, of the PEIR . In addition, aquatic ecology surveys are being undertaken that extend to at least 250m up and downstream beyond the MHPGC Project PEIR Red Line Boundary: Onshore. The data from these surveys will be presented in the impact assessment within the ES. The detailed methodology followed for said surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR .
The level of baseline information available for the onshore elements is limited, with only walkover surveys being carried out. The initial scoping process has been informed by very limited data. Important information such as the	UK Habitat Classification (UKHab) surveys have been completed for the MHPGC Project. The detailed methodology followed for said surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial

Comment	How and where this is considered in the PEIR
distribution of habitats or the proportion of the site accessed has been absent from this process, potentially impacting the appropriateness of site selection and limiting the value of the scoping process. Further consultation should be undertaken when further ecology baseline information is available regarding scope of assessment and option selection outcomes. Ideally UKHab surveys would be undertaken for ecology, allowing for a less generic scoping assessment and to provide an indication of any further surveys that may need to be undertaken. (Refer Appendix C5)	and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR, including for all surveys to date being completed within the optimal survey season and by suitably qualified ecologists during the optimal survey period for the species of interest. At time of writing, the surveys have a coverage of approximately 92% of all land within the MHPGC Project PEIR Red Line Boundary: Onshore. Access to the full area for the project has not been possible to date due to access restrictions and health and safety concerns. The findings of the UKHab surveys are set out in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.
Proposals for potentially required freshwater surveys do not detail any kind of riparian habitat, hydromorphological or geomorphological assessment methods. Hydromorphological assessments are mentioned elsewhere in the Scoping Report, but no methods are provided. Not carrying out such assessments could mean that impacts and mitigation requirements are not properly assessed. Where watercourses are affected, proposals for riparian habitat assessments should be considered. Please consult the Environment Agency (EA) on the appropriateness of such assessments. Dependent upon the nature of the Proposed Development, such assessments may be required to inform the Guidelines for EclA and WFD assessments. They may also be required to inform any associated requirements for avoidance, mitigation and/or compensation measures. Modular River Physical (MoRPH) surveys (surveys the define the quality and function of river habitat) may be sufficient to address this issue. (Refer Appendix C6)	UKHab and RCA surveys, (including MoRPh surveys) of watercourses and associated riparian habitats, have been completed for the MHPGC Project. The detailed methodology followed for said surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The findings of the UKHab and RCA surveys are set out in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.
Natural England (NE)	
Natural England (NE) advises that changes to marine processes and benthic ecology could cause an indirect impact on mobile interest features from designated sites through changes to supporting habitats and prey availability. Ecosystem impacts should be thoroughly considered within the relevant receptor chapters throughout the ES/Application documents. (Refer Annex A, Section 13)	Where there are likely significant effects on the offshore environment these are covered in Volume 2, Chapter 3 to 6, of the PEIR. The potential for impacts on mobile interest features of marine and terrestrial designated sites has been assessed in a HRA. Consideration of LSEs are set out in Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report, prepared to accompany the PEIR and an AA in Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR. Inter-related effects are further considered in Volume 4, Chapter 5: Inter-related effects of this PEIR.
NE advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance on such matters. Guidelines for EclA have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM). Ecological Impact Assessment (EclA) is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EclA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.	Sensitive ecological receptors have been identified and those included in the assessment are identified in Section 3.6. EclA has been undertaken as part of the EIA process following the methodology set out in Section 3.5, with assessment presented in Section 3.9. A hybrid approach has been followed to align with the CIEEM EclA guidance in conjunction with the EIA approach consistent with other chapters in the PEIR. The requirements of NPPF and other national and local policies set out in Section 3.2 have been considered as. Habitat creation and enhancement measures will be determined once the project design has been defined, and

Comment	How and where this is considered in the PEIR
The National Planning Policy Framework (NPPF) sets out guidance on how to take account of biodiversity interests in planning decisions and the framework that the responsible authority should provide to assist developers. Further guidance is set out in Planning Practice Guidance on the natural environment. (Refer Annex A, Section 3.1)	will be outlined in the Outline Landscape and Ecological Management Plan (CoT43) at the ES stage. The approach to Biodiversity Net Gain is set out in Section 3.5.7.
The development Site is within or may impact on the following European/ internationally designated nature conservation sites: • Durham Coast SAC; • Northumbria Coast SPA; • Northumbria Coast Ramsar Site; • Castle Eden SAC; • Teesmouth and Cleveland Coast SPA; • Teesmouth and Cleveland Coast Ramsar Site; • Thrislington SAC; • Northumberland Marine SPA; • Coquet Island SPA; • Farne Islands SPA; • Lindisfarne SPA; • Lindisfarne Ramsar. The ES should thoroughly assess the potential for the proposal to affect internationally designated sites of nature conservation importance / European sites, including marine sites where relevant. European sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations'). Under Regulation 63 of the Habitats Regulations, an appropriate assessment must be undertaken in respect of any plan or project which is - likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and - not directly connected with or necessary to the management of the site. The consideration of likely significant effects should include any functionally linked land outside the designated site. These areas may provide important habitat for mobile species populations that are qualifying features of the site, for example birds, mammals and fish. This can also include areas which have a critical function to a habitat feature within a designated site, for example by being linked hydrologically or geomorphologically. Should a likely significant effect on a European/Internationally designated site be identified (either alone or in-combination) or be uncertain, the competent authority (in this case the Secretary of State) may need to prepare an appropriate assessment in addition to the consideration of impacts through the EIA process. Further guidance is set out in Planning Practice Guidance on appropriate assessment. This should also take into account any agreed strategic mitigation solution that may be being developed or implemented in the area to address recreational	The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20: Preliminary assessment to determine potential for significant effects. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section Commitments adopted as part of the MHPGC Project3.8 as well as Section 3.9. The potential for the proposal to affect internationally designated sites/European sites has been screened in the Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report and assessed within the Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR; and potential impacts and mitigation measures are outlined in Section 3.9 of Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR. For terrestrial ecology and intertidal ornithology the Northumbria Coast SPA and Ramsar and Durham Coast SAC are considered in the above documents. The potential for effects on mobile qualifying features using Functionally Linked Land (FLL) located outside of designated sites was also considered.

Comment	How and where this is considered in the PEIR
disturbance, nutrients, or other impacts. (Refer Annex A, Section 3.3) NE's SSSI Impact Risk Zones can be used to help identify the potential for the development to impact on a SSSI. The development Site is within or may impact on the following SSSIs: • Hesledon Moor West SSSI; • Hesledon Moor East SSSI; • Hawthorn Dene SSSI; • Durham Coast SSSI; • Eppleton Grassland SSSI; • Pig Hill SSSI; • Stony Cut Cold Hesledon SSSI; • Tuthill Quarry SSSI; • Dabble Bank SSSI; • Tunstall Hills; • Ryhope Cutting SSSI. The ES should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects. (Refer Annex A, Section 3.5)	The methodologies for assessing sensitivity, magnitude and significance are set out in Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR, and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20. In relation to Durham Coast SSSI, the impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section 3.8 as well as Section 3.9.
Applicants should check to see if a mitigation licence is required using NE guidance on licensing NE wildlife licences. Applicants can also make use of Natural England's charged service Pre Submission Screening Service for a review of a draft wildlife licence application. Natural England then reviews a full draft licence application to issue a Letter of No Impediment (LONI) which explains that based on the information reviewed to date, that it sees no impediment to a licence being granted in the future should the DCO be issued. This is done to give the Planning Inspectorate confidence to make a recommendation to the relevant Secretary of State in granting a DCO. The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts (GCN; <i>Triturus cristatus</i>), reptiles, birds, water voles (<i>Arvicola amphibius</i>), badgers (<i>Meles meles</i>) and bats). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area. The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.	The impacts of all phases of the MHPGC Project have been assessed in Table 3-20. The information collected from the terrestrial ecology and terrestrial and intertidal ornithology surveys has been supported by the completion of a desk study. This has been informed by historic data and data collated from local biological record centres, nature conservation organisations and local groups. The desk study for each habitat and species of interest is set out in the relevant annexes (Volume 1, Annex 3.2 to Volume 3, Annex 3.13, of the PEIR) for the MHPGC Project. Terrestrial ecology and terrestrial and intertidal ornithology surveys have been completed for the MHPGC Project. The detailed methodology followed for said surveys is set out in Volume 3, Annex 3.1 Terrestrial Ecology and Terrestrial and intertidal Ornithology Survey Methodologies Technical Report, of the PEIR including for all surveys being completed by suitably qualified ecologists during the optimal survey period for the species of interest and in accordance with current best practice guidance. The need for NE licences will be determined as the project design develops. Prior to DCO, we will review if any LONIs are required and will consult with NE on this. Part of the MHPGC Project PEIR Red Line Boundary: Onshore falls within the Amber Risk Zone for GCN and NE have confirmed that if required, the DLL is an option for the applicant. Both the GCN Survey Area and the GCN Study Area have been informed by potential linkages to surrounding habitat, as well as the potential interaction of GCN within the wider context of the MHPGC Project. Volume 3, Annex 3.8: Interim Great Crested Newt Survey Technical Report, of the PEIR sets out the GCN surveys undertaken the

Comment	How and where this is considered in the PEIR
NE has adopted standing advice for land based protected species, which includes guidance on survey and mitigation measures. A separate protected species licence from Natural England or Defra may also be required. <u>District Level Licensing for great crested newts</u> Where strategic approaches such as District Level Licensing (DLL) for GCN are used, a LONI will not be required. Instead, the developer will need to provide evidence to the Examining Authority (ExA) on how and where this approach has been used in relation to the proposal, which must include a counter-signed Impact Assessment and Conservation Payment Certificate (IACPC) from Natural England, or a similar approval from an alternative DLL provider. The DLL approach is underpinned by a strategic area assessment which includes the identification of risk zones, strategic opportunity area maps and a mechanism to ensure adequate compensation is provided regardless of the level of impact. In addition, NE (or an alternative DLL provider) will undertake an impact assessment, the outcome of which will be documented in the IACPC (or equivalent). If no GCN surveys have been undertaken, NE's risk zone modelling may be relied upon. During the impact assessment, NE will inform the applicant whether their scheme is within one of the amber risk zones and therefore whether the Proposed Development is likely to have a significant effect on GCN. The IACPC will also provide additional detail including information on the Proposed Development's impact on GCN and the appropriate compensation required. By demonstrating that the DLL scheme for GCN will be used, consideration of GCN in the ES can be restricted to cross-referring to the NE (or alternative provider) IACPC as a justification as to why significant effects on GCN populations as a result of the Proposed Development would be avoided. (Refer Annex A, Section 3.6)	MHPGC Project, together with findings from the desk study. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section 3.8 as well as Section 3.9.
Priority habitats and species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. Lists of priority habitats and species can be found here. Natural England does not routinely hold species data. Such data should be collected when impacts on priority habitats or species are considered likely. Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. (Refer Annex A, Section 3.7)	Protected species surveys have been completed for the MHPGC Project. The detailed methodology followed for said surveys is set out in Volume 3, Annex 3.1 Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The information collected from the protected species surveys has been further supported by the completion of a desk study. This has been informed by historical data and data collated from local biological record centres, nature conservation organisations and local groups. The desk study for each habitat and species of interest is set out in the relevant annexes (Volume 3, Annex 3.2 to Annex 3.13, of the PEIR). UKHab and National Vegetation Classification (NVC) surveys, have been completed for the MHPGC Project. The detailed methodology followed for said surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The findings of the UKHab and NVC surveys are set out in Volume 3, Annex 3.2: UK Habitat Classification, National

Comment	How and where this is considered in the PEIR
	Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR. Consideration has been made in regard to designated sites including SSSIs and LWSs. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were assessed and justification for doing so are detailed in Table 3-20. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section 3.8 as well as Section 3.9.
An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, botanical surveys should be carried out at appropriate times of the year, to establish whether any scarce or priority species are present. (Refer Annex A, Section 3.7)	UKHab and NVC surveys, have been undertaken for the MHPGC Project. The detailed methodology followed for said surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR, including for all surveys to date being completed within the optimal survey season and by suitably qualified ecologists during the optimal survey period for the species of interest. The findings of the UKHab and NVC surveys is set out in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR. All other surveys are detailed in the relevant annexes and have surveyed for scarce or priority species including further targeted botany, ornithological and terrestrial/aquatic invertebrate surveys. At the time of writing, 92% of the UHab Survey Area has been surveyed. NVC surveys are also completed with initial results presented in Section 3.4 and full results will be presented as part of the ES. Section 3.9 assesses the MHPGC Project against the detail in the annexes based on survey work completed to date, with the ES presenting assessment based on survey results that are ongoing.
The ES should include details of: - Any historical data for the site affected by the proposal (e.g. from previous surveys); - Additional surveys carried out as part of this proposal; - The habitats and species present; - The status of these habitats and species (e.g. whether priority species or habitat); - The direct and indirect effects of the development upon those habitats and species; - Full details of any mitigation or compensation measures; - Opportunities for biodiversity net gain or other environmental enhancement; - Ancient Woodland, ancient and veteran trees. (Refer Annex A, Section 3.7)	Data gathered during previous surveys in 2023/24 has been included in the assessment of the MHPGC Project alongside data from surveys undertaken in 2025/26. Surveys have been undertaken for habitats, a range of protected species including badger, otter (<i>Lutra lutra</i>), water vole, GCN, bats, and breeding, wintering and intertidal birds, included in Volume 3, Annex 3.2 to 3.13, of the PEIR. The impact assessment is set out in Section 3.9. Opportunities and details surrounding BNG are set out in Volume 3, Annex 3.6: Initial Biodiversity Net Gain Assessment, of the PEIR. A full review of notable habitats, including ancient woodland, was completed as part of the baseline characterisation for the MHPGC Project. Attention was paid to features such as ancient woodland and ancient or veteran trees during walkover surveys. Any such features were recorded as target notes during UKHab surveys. Noting that there is no Ancient Woodland present within the MHPGC PEIR Red Line Boundary: Onshore. The detailed methodologies followed for these surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey

Comment	How and where this is considered in the PEIR
	Methodologies Technical Report, of the PEIR. The findings of the UKHab surveys are set out in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.
The ES should assess the impacts of the proposal on the ancient woodland and any ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement. Ancient woodland is an irreplaceable habitat of great importance for its wildlife, its history, and the contribution it makes to our diverse landscapes. Paragraph 186 of the National Planning Policy Framework (NPPF) sets out the highest level of protection for irreplaceable habitats and development should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy exists. (Refer Annex A, Section 3.7)	A full review of notable habitats, including ancient woodland, was completed as part of the baseline characterisation for the MHPGC Project. Standard and best practice assessment methodology were implemented for the terrestrial ecology and terrestrial and intertidal ornithology baseline surveys. Attention was paid to features such as ancient or veteran trees during walkover surveys. Any such features were recorded as target notes during UKHab surveys. Noting that there is no Ancient Woodland present within the MHPGC PEIR Red Line Boundary: Onshore. The detailed methodologies followed for these surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The findings of the UKHab surveys are set out in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section 3.8 as well as Section 3.9.
The Environment Act 2021 includes NSIPs in the requirement for mandatory BNG, with the biodiversity gain objective for NSIPs defined as at least a 10% increase in the pre-development biodiversity value of the on-site habitat. It is the intention that BNG should apply to all terrestrial NSIPs accepted for examination from November 2025. This includes the intertidal zone but excludes the subtidal zone (i.e. below MLWS). Projects that span both offshore and onshore will be subject to BNG requirements for the onshore components only. (Refer Annex A, Section 3.8)	The date for BNG to become mandatory for projects requiring development consent is 2 November 2026. The MHPGC Project has begun the BNG process based on latest guidance provided by DEFRA. An initial BNG assessment has been undertaken for the onshore elements of the MHPGC Project and is set out within Volume 3, Annex 3.6: Initial Biodiversity Net Gain Assessment, of the PEIR.
The ES should take account of the risks of air pollution and how these can be managed or reduced. This should include taking account of any strategic solutions or Shared Nitrogen Action Plans (SNAPs), which may be being developed or implemented to mitigate the impacts of air quality. (Refer Annex A, Section 8)	An air quality assessment has been undertaken for the onshore environment, including consideration of nitrogen deposition for sensitive ecological features within the MHPGC Project Study Area within Volume 3, Chapter 7: Onshore Air Quality, of the PEIR.
NE advise that the Northumbria Coast SPA is also included due to potential impact on their supporting habitats. The Durham Coast SAC citation highlights the vulnerability of habitat communities present on the sea cliffs. It states the communities “are largely maintained by natural processes including exposure to sea spray, erosion and slippage of the soft Magnesian Limestone bedrock and overlying glacial drifts, as well as localised flushing by calcareous water”. Changes to these processes from the development should be fully explored in the ES. (Refer Annex B, Point No. 13)	Both the breeding, wintering and intertidal survey areas, together with the wider study area, were informed by potential functional linkages to key ornithological sites and the potential importance of the Sites for qualifying bird species associated with that designation. The desk study in these reports sets out the sites notified for ornithological features within 10km of the MHPGC PEIR Red Line Boundary: Onshore. Designated sites within the MHPGC ornithological study areas are shown Volume 3, Annex 3.12 and Annex 3.13, of the PEIR. The ornithological surveys made inclusion of transects along the coast within intertidal and cliff habitats within

Comment	How and where this is considered in the PEIR
	the MHPGC PEIR Red Line Boundary: Onshore to account for species for which these designated sites are notified. The assessment of potential direct and indirect impacts on designated sites during the construction and operational and maintenance phases of the MHPGC Project, including Northumbria Coast SPA and Ramsar and Durham Coast SAC, are detailed Section 3.9. A detailed assessment of LSEs and impacts to Northumbria Coast SPA and Ramsar and Durham Coast SAC from the construction, operation and maintenance, and decommissioning of the MHPGC Project has been carried out in the HRA, set out within Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report, prepared to accompany the PEIR and Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.
NE acknowledges that impacts on birds have been split out in geographical categories for the purpose of setting out a scope of an ES, however, impacts on terrestrial and intertidal birds may occur from both terrestrial and marine activities. NE advise that every ornithological receptor will need to be assessed across the land/sea boundary. (Refer Annex B, Point No. 27)	Detailed breeding bird surveys have been undertaken for the MHPGC Project in the 2023, 2025 and 2026 breeding seasons. Wintering bird surveys were undertaken in 2023/2024 and 2025/2026 and will be repeated in 2026/2027. Intertidal bird surveys were undertaken between 2023/2024 and 2025/2026 (ongoing at the time of writing). The detailed methodologies followed for said surveys have been set out in Volume 3, Annex 3.1 Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. In addition to the intertidal bird surveys, the breeding bird survey made inclusion of transects along the coast within the Breeding Bird Survey Area to account for seabirds and waders potentially breeding within intertidal and cliff habitats within the MHPGC Project PEIR Red Line Boundary. Potential impacts and mitigation, where necessary, have been outlined within Section 3.9.
Onshore and intertidal ornithology - Use of the Waterbird Disturbance Mitigation Toolkit (Cutts, N., Hemingway, K. and Spencer, J., 2013). NE recognises that this reference has useful disturbance information but does not agree with the levels, conclusions and thresholds in the toolkit. The assessment of disturbance will need to show evidence of the likely changes from baseline levels so it is important to have data on background levels for the EIA. (Refer Annex B, Point No. 28)	The Volume 3, Annex 3.13 Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR does not rely on Cutts 2013 to determine disturbance impacts. The report sets out the wintering bird surveys undertaken for the MHPGC Project, together with the findings from the desk study. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section 3.8 as well as Section 3.9.
Project-specific intertidal surveys have determined that these habitats are used by a variety of non- breeding (wintering and passage migrant) wader species for feeding and roosting. Survey data for intertidal bird surveys have not been provided as part of the scoping report so no detailed comments on their validity can be offered from NE. NE would welcome engagement through our Discretionary Advice Service (DAS) on surveys completed to date and what is proposed. (Refer Annex B, Point No. 30)	Detailed intertidal bird surveys have been completed for the MHPGC Project, in line with the methodologies agreed with Natural England via DAS engagement. The detailed methodology followed for said surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The intertidal bird survey made inclusion of high tide and low tide surveys along the coast within the intertidal bird Survey Area to account for waterbirds and waders using the intertidal and cliff habitat and the sea on passage/to overwinter within the MHPGC PEIR Red Line Boundary. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section 3.8 as well as Section 3.9.

Comment	How and where this is considered in the PEIR
Wetland Bird Survey (WeBS) data indicates that the intertidal area within the Offshore and Intertidal Ornithology Study Area is of limited importance to the species of designated sites. NE is aware that the WeBS coverage of the two sectors is limited. Additionally, WeBs is also usually counted at the high tide roosts so can miss foraging habitats. (Refer Annex B, Point No. 31)	Detailed intertidal bird surveys have been included for the MHPGC Project, in line with the methodologies agreed with Natural England via DAS engagement. The detailed methodology followed for said surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The intertidal bird survey made inclusion of high tide and low tide surveys along the coast within the intertidal bird Survey Area to account for waterbirds and waders using the intertidal and cliff habitat and the sea on passage/to overwinter within the MHPGC PEIR Red Line Boundary. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section Commitments adopted as part of the MHPGC Project3.8 as well as Section 3.9.
The scoping boundary currently includes three areas of Ancient Woodland (Cherry Knowle Dene; Hawthorn Dene and Ryhope Dene). Table 8.44 notes that the designed in mitigation measure reference number MM-100 will ensure that ancient woodland would be retained with a minimum buffer of 25m from any surface construction works (>6m depth from trenchless installation). Natural England welcomes the commitment to avoid the ancient woodland as it is an irreplaceable habitat. If a trenchless technique is to be used beneath areas of ancient woodland, the ES must include a full impact assessment of the expected effects on the woodland, including any indirect hydrological changes and detailed mitigation proposed to ensure that no impacts on the habitat result from this project. (Refer Annex B, Point No. 34)	The MHPGC PEIR Red Line Boundary: Onshore excludes the areas of ancient woodland that were identified within the MHPGC Project Scoping Boundary. The MHPGC Project will therefore avoid these areas of ancient woodland and trenchless crossings are therefore not required to avoid this habitat. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were assessed and justification for doing so are detailed in Table 3-20. The impact assessments is set out in Section 3.9 and, where required, mitigation measures in Section 3.8 as well as Section 3.9.
NE strongly advise that the applicant engages with NE through DAS as designated site assessments are of critical importance to the NSIP process. (Refer Annex B, Point No. 35)	Engagement between NE and the Applicant has been completed via DAS engagement, the EPP and Expert Working Group (EWG) meetings. Ongoing consultation with the Onshore and Ecology and Onshore and Intertidal Ornithology Expert Working group is detailed in Table 3-6 below. A detailed assessment of LSEs and potential impacts to designated sites from the construction, operation and maintenance and decommissioning of the MHPGC Project has been carried out in the HRA, set out within Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report, prepared to accompany the PEIR and Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.
Impacts on Durham Coast SAC. The ES must consider the potential for direct impacts and indirect impacts during construction, operation and decommissioning to qualifying features. Any potential for impacts upon the designated site must be considered, including changes to coastal processes. (Refer Annex B, Point No. 36)	Durham Coast SAC overlaps and is directly linked to the MHPGC PEIR Red Line Boundary: Onshore. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5 and have been aligned with CIEEMs Guidelines for Ecological Impact Assessment in the UK and Ireland (latest update: Version 1.3, September 2024), and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20. The assessment of the potential impacts during the construction, operation and maintenance and

Comment	How and where this is considered in the PEIR
	decommissioning phases of the MHPGC Project are detailed in Section 3.9. A detailed assessment of LSEs and potential impacts to Durham Coast SAC from the construction, operation and maintenance and decommissioning of the MHPGC Project has been carried out in the HRA, set out within Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report, prepared to accompany the PEIR and Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.
Impacts to the Northumbria Coast SPA and Ramsar site. The ES and HRA must consider both direct impacts to SPA and Ramsar species, and supporting habitats within the designated site boundary, and those which are utilising areas outside of the Site boundary which are functionally linked to the designated sites. (Refer Annex B, Point No. 37)	Northumbria Coast Special Protection Area (SPA) and Ramsar site are both outside of the MHPGC Project PEIR Red Line Boundary. However, both the Breeding Bird Survey Area and Study Area, and the Wintering and Intertidal Bird Survey Area and Study Area, have been informed by potential linkages to the SPA and Ramsar and the potential interactions of bird species MHPGC and these sites. The desk study in Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Birds Surveys Technical Report, of the PEIR and Volume 3, Annex 3.12: Interim Breeding Birds Surveys Technical Report, of the PEIR sets out the sites notified for ornithological features within 10km of the MHPGC Project PEIR Red Line Boundary. The breeding, intertidal and wintering bird surveys conducted by MHPGC Project made inclusion of transects along the coast within intertidal and cliff habitats within the MHPGC PEIR Red Line Boundary to account for species for which these designated sites are notified.
Impacts on: • Castle Eden SAC • Teesmouth and Cleveland Coast SPA and Ramsar Site • Thrislington SAC The ES and HRA must examine the possibility of indirect impacts to these sites resulting from pollution, hydrological and air quality changes. (Refer Annex B, Point No. 38)	The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20. Castle Eden Dene SAC and Thrislington SAC were initially considered within the HRA as they were highlighted as part of the MHPGC Project Scoping Opinion but were screened out on the basis that they fall outside of the MHPGC Project Zol, as set out in Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report, prepared to accompany the PEIR. It is considered that the Teesmouth and Cleveland Coast SPA and Ramsar site lies within foraging distance from the MHPGC PEIR Red line Boundary of some of the qualifying species. An examination of LSEs of the possibility of indirect impacts to Teesmouth and Cleveland Coast SPA and Ramsar site has been set out in Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report, prepared to accompany the PEIR.
Impacts on Hesledon Moor West SSSI: NE advises that this site is avoided when selecting the location of the onshore cable and Land Substation (LSS) as any reduction in notified habitat at this site would result in the site being classed as in unfavourable condition. Additionally, the conservation value of the site is largely determined by structural diversity and water quality and therefore indirect effects from the project results from to changes in the water quality and quantity entering the site	The Hesledon Moor West SSSI lies adjacent to the MHPGC PEIR Red Line Boundary: Onshore. An assessment of potential impacts to Hesledon Moor West SSSI during construction is included in Section 3.9. The hydrological connectivity between Hesledon Moor West and Hesledon Moor East is considered and the methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites

Comment	How and where this is considered in the PEIR
via hydrological pathways could lead to negative effects. Natural England advises that these impact pathways are assessed in the ES alongside any other impacts which are likely to occur to the designated site from the project during any phase of the development. (Refer Annex B, Point No. 39)	were scoped in/scoped out and justification for doing so are detailed in Table 3-20.
Impacts on Hesledon Moor West SSSI: NE advises that this site is avoided when selecting the location of the onshore cable and LSS as any reduction in notified habitat at this site would result in the site being classed as in unfavourable condition. There are connected hydrological pathways between Hesledon Moor West and Hesledon Moor East so any influence on hydrology at Hesledon Moor West may affect Hesledon Moor East and vice versa. Fen communities are sensitive to eutrophication so changes in nutrient inputs from flow pathways or other connected pathways can impact the notified habitat. Natural England advises that these impact pathways are assessed in the ES alongside any other impacts which are likely to occur to the designated site from the project during any phase of the development. (Refer Annex B, Point No. 40)	The Hesledon Moor East SSSI lies partially within the MHPGC Project PEIR Red Line Boundary: Onshore. An assessment of potential impacts to Hesledon Moor East SSSI during construction is included in Section 3.9. In the event that crossing Hesledon Moor East SSSI by the onshore export cable or AC connection cable is required in the final design, the Applicant has committed to utilising trenchless techniques (CoT51) to avoid direct impacts. The hydrological connectivity between Hesledon Moor West and Hesledon Moor East is considered and the methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20.
NE advises that the Hawthorn Dene SSSI is avoided when selecting the location of the onshore cable as a loss of 0.5ha of the woodland would result in the Site being considered unfavourable condition. The Site is also designated as ancient woodland which has developed over hundreds of years so any loss of this habitat would not be easily restored or mitigated elsewhere. Northumbrian Water Sewage Treatment Works are on the edge of the SSSI and discharge into the dene. NE is aware of potential repair work needed to one of their outfall pipes which would impact a small area of the designated woodland. The applicant should engage with Northumbrian Water to assess any cumulative effects from this proposal and any other projects they may have. Increased nutrients transported into the Site via connected watercourses could lead to invasive non-native species (INNS) dominating the understorey and potential seed dispersal/spread from disturbance to surrounding ground. The Site is currently under pressure from Himalayan balsam (<i>Impatiens glandulifera</i>) so NE advises that the applicant must consider potential spread of this species further into the Site alongside any other impacts which are likely to occur to the designated site from the project during any phase of the development. (Refer Annex B, Point No. 41)	The Hawthorn Dene SSSI lies adjacent to the south of the MHPGC PEIR Red Line Boundary: Onshore. An assessment of impotent impacts to Hawthorn Dene SSSI is included in Section 3.9. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20. The Cumulative Effects Assessment (CEA) is set out in Volume 1, Annex 4.3: Cumulative Screening and Location Plan and CEA methodology has been set out in Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR. Projects that were screened into the CEA are presented and assessed within Table 3-21. Any INNS including, for example, giant hogweed (<i>Heracleum mantegazzianum</i>), Japanese knotweed (<i>Fallopia japonica</i>) and Himalayan Balsam identified during UKHab surveys were marked, where identified, as Target Notes and are included in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR. The Outline Biosecurity Protocol (CoT48) for the management of the spread of INNS during the construction of the MHPGC Project will be set out within a Code of Construction Practice (CoCP) and submitted as part of the application for development consent.
NE advises that Durham Coast SSSI is avoided when selecting the location of the landfall and onshore cable routes. The ES must examine impacts to the SSSI during landfall works if landfall within the boundaries of the designated site cannot be avoided. (Refer Annex B, Point No. 42)	The Durham Coast SSSI lies partially within the MHPGC PEIR Red Line Boundary: Onshore. The site will be avoided via landfall installation works utilising trenchless techniques. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20.
Impacts on the following designated sites should be assessed:	Potential impacts to Stony Cut Cold Hesledon, Dabble Bank and Tunstall Hills and Ryhope Dene Cutting SSSIs

Comment	How and where this is considered in the PEIR
• Eppleton Grassland SSSI; • Pig Hill SSSI; • Tuthill Quarry SSSI; • Stony Cut Cold Hesledon SSSI; • Dabble Bank SSSI; • Tunstall Hills and Ryhope Cutting SSSI. The ES must examine the possibility of impacts to these SSSI from the project and identify appropriate mitigation. (Refer Annex B, Point No. 43)	were initially considered as they were highlighted as part of the MHPGC Project Scoping Opinion but have not been considered further within the PEIR on the basis that they fall outside of the MHPGC Project Zol based on the MHPGC PEIR Red Line Boundary: Onshore. Eppleton Grassland SSSI lies 1.8km northwest of the MHPGC PEIR Red Line Boundary: Onshore, Pig Hill SSSI lies 1.8km to the west of the MHPGC PEIR Red Line Boundary: Onshore and Tuthill Quarry SSSI lies 1.8km to the southwest of the MHPGC PEIR Red Line Boundary: Onshore. These are considered to lie within the Zol of the MHPGC Project. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20.
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Temporary and permanent impacts, both direct and indirect, to habitats and species within the proposed development Scoping Boundary and relevant zone of influence (Zol) (operation and decommissioning) This matter as listed in table 8.42 of the Scoping Report is very broad (i.e. permanent and temporary impacts, direct and indirect, on species and habitats). It is not clear what specific impacts are proposed to be scoped in or out, particularly in respect of the operation and decommissioning, as justification for scoping out these phases is not provided. It is also unclear whether this matter includes impacts on designated sites. The ES should make clear the specific impacts considered in the ES. For ease of understanding these should be broken down further e.g. habitat loss, disturbance etc. With regards to the operational phase, it is unclear at this stage whether there would be any LSE on important ecological features during the O&M phase arising from temporary/permanent impacts on habitats and species. As the O&M activities are not fully described and the important ecological receptors not yet determined, the Inspectorate considers that it does not have sufficient justification to agree to scope this matter out for the operational phase. In the absence of information such as evidence demonstrating clear agreement with relevant consultation bodies, the Inspectorate is not able to agree to scope these matters from the assessment. The ES should include an assessment of impacts at all phases of the proposed development, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of an LSE. With regards to decommissioning impacts see comments at ID 4.3.5 below. On the basis that the cable would remain buried, the Inspectorate is content to scope out an assessment of decommissioning impacts associated with the buried cable. The ES should, however, consider likely impacts associated with the removal of above ground infrastructure, where likely significant effects to habitats and species could occur. (ID 4.3.1)	The temporary and permanent potential impacts, both direct and indirect, to habitats, species and designated sites within the MHPGC PEIR Red Line Boundary: Onshore and Zol that are scoped in/scoped out are set out within Table 3-20 and justification for doing so is provided. Specific potential impacts are broken down and split across the component phases of the MHPGC Project, including construction, operation and maintenance and the decommissioning phase, set out in Section 3.9.
The proposed development should avoid ancient woodland as an irreplaceable habitat. If a trenchless technique is to be used to install the cable beneath areas	A full assessment of potential construction techniques is detailed in Section 3.9. The MHPGC PEIR Red Line Boundary: Onshore excludes the areas of ancient

Comment	How and where this is considered in the PEIR
of ancient woodland, the ES should include an assessment of effects on the woodland, including any indirect hydrological changes, where LSEs could occur. Any mitigation relied upon should be clearly described, including how it is to be secured. (ID 4.3.10)	woodland that were identified within the MHPGC Project Scoping Boundary. The MHPGC Project will therefore avoid these areas of ancient woodland and trenchless crossings are therefore not required to avoid this habitat.
The ES should include information to demonstrate whether the MHPGC Project is located within a risk zone for GCN. If the applicant enters into the DLL scheme, NE will undertake an impact assessment and inform the applicant whether their scheme is within one of the amber risk zones and therefore whether the MHPGC Project is likely to have a significant effect on GCN. The outcome of this assessment will be documented on an Impact Assessment and Conservation Payment Certificate (IACPC). The IACPC can be used to provide additional detail to inform the findings in the ES, including information on the proposed development's impact on GCN and the appropriate compensation required. (ID 4.3.11)	Noted. GCN surveys have been completed for the MHPGC Project. The survey methodology and results is set out in Volume 3, Annex 3.8: Interim Great-crested Newt Surveys Technical Report, of the PEIR . Assessment of potential impacts on GCN is presented in Section 3.9 . The MHPGC PEIR Red Line Boundary: Onshore falls within DLL amber and green risk zones for GCN. The requirement for additional mitigation measures such as Natural England Mitigation Licences or DLL will be determined once the project design has been defined and will be set out at the ES stage.
Further surveys considered – freshwater habitats and species The applicant should seek to agree the scope of further surveys required and appropriate methodologies with relevant consultation bodies, such as the Environment Agency. (ID 4.3.12)	UKHab and RCA surveys, including that of watercourses and associated riparian habitats, have been completed for the MHPGC Project. A suite of terrestrial freshwater ecology surveys has also been undertaken in 2026. The detailed methodology followed for said surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR .
This includes potential future repair works to Northumbrian Water Sewage Treatment Works on the edge of Hawthorn Dene SSSI. The ES should consider potential hydrological impacts to the SSSI, including potential cumulative effects, where LSE could occur. (ID 4.3.13)	The Hawthorn Dene SSSI lies adjacent to the south of the MHPGC PEIR Red Line Boundary: Onshore, considered to be within the Zol of the MHPGC Project. The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, Section 3.5 , and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20 . The CEA that are screened in are set out in Volume 1, Annex 4.4: Cumulative Screening and Location Plan, of the PEIR and CEA methodology has been set out in Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR . Projects that were screened into the CEA are presented and assessed within
Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request. (ID 4.3.14)	Any data that relates to the presence and locations of species such as badgers, rare birds, and plants is provided as confidential annexes, as appropriate.
The Scoping Report provides little justification in support for scoping this matter out for the operation and decommissioning phases. Reference is made only to construction phase activities. As the precise cable route has not yet been determined and thus the proximity of designated sites to the proposed development, the ES should include an assessment of potential damage, degradation or loss of habitats within designated	The methodologies for assessing sensitivity, magnitude and significance are set out in Section 3.5, Section 3.5 and which sites were scoped in/scoped out and justification for doing so are detailed in Table 3-20 . An air quality assessment has been undertaken for the onshore environment, within the MHPGC Project Study Area within Volume 3, Chapter 7: Onshore Air Quality, of the PEIR .

Comment	How and where this is considered in the PEIR
conservation sites during all phases of the proposed development, where LSE could occur. The assessment of impacts on designated sites should include consideration of direct effects, together with effects arising from pollution, hydrological changes, and changes to air quality, where LSE could occur. The assessment should be informed by the findings of other ES chapters, for example air quality and water quality. (ID 4.3.2)	The assessment of potential impacts during the construction, operation and maintenance, and decommissioning phases of the MHPGC Project are detailed in Section 3.9. The CEA that are screened in are set out in Volume 1, Annex 4.4: Cumulative Screening and Location Plan and CEA methodology has been set out in Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR. Projects that were screened into the CEA are presented and assessed within Table 3-21. The CEA that are screened in are set out in Volume 1, Annex 4.4: Cumulative Screening and Location Plan and CEA methodology has been set out in Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR. Projects that were screened into the CEA are presented and assessed within Section 3.10. A detailed assessment of LSEs and potential impacts to designated sites within the Zol of the MHPGC Project from the construction, operation and maintenance and decommissioning of the MHPGC Project has been carried out in the HRA, set out within Habitats Regulations Assessment/Habitats Regulations Appraisal Screening Report, prepared to accompany the PEIR and Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.
Habitat fragmentation and impacts on species dispersal, including protected and/ or notable species, and species listed on designated site citations. Direct removal and/or degradation of irreplaceable, protected or notable habitats (operation and decommissioning). The Scoping Report provides little justification to scope this matter out for the operation and decommissioning phases. Although O&M activities are likely to be small scale and infrequent, it is unclear at this stage whether decommissioning activities would result in direct removal or degradation of irreplaceable, protected or notable habitats. In the absence of information such as evidence demonstrating clear agreement with relevant consultation bodies, the Inspectorate is not able to agree to scope these matters from the assessment. The ES should include an assessment of this matter, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of an LSE. (ID 4.3.3)	The assessment considers habitat fragmentation potential impacts on species dispersal and irreplaceable habitats during the construction, operation and maintenance and decommissioning phases of the MHPGC Project are detailed Section 3.9.
Damage or destruction of bird nests, and loss of roosting, breeding, foraging, hibernating or resting habitat of protected and/or notable species (operation). It is unclear from the description in table 8.42 whether this potential impact relates to the works at the substation only or the entire onshore scheme. Similarly, no justification has been provided to explain why this matter is to be scoped out during operation and whilst sensitive clearance is identified for the construction phase at table 8.44, it is unclear if this would continue for O&M. In the absence of information such as evidence demonstrating clear agreement with relevant consultation bodies, the Inspectorate is not able to agree to scope this matter from the assessment. The ES should include an assessment of this matter, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of an LSE. (ID 4.3.4)	Noted. Impacts scoped into the assessment at each stage of the MHPGC Project are set out in Section 3.6. Potential impacts including permanent or temporary land take/land use change, fragmentation of habitats, and increased noise, vibration, light and movement levels, and the associated effects on protected and notable species are scoped into the assessment for the construction, operation and maintenance and decommissioning stages. The associated assessment is presented in Section 3.9.

Comment	How and where this is considered in the PEIR
The Scoping Report states that cable would be left in situ once decommissioned and therefore any habitats and species and designated sites above or in close proximity to the underground cable would remain undisturbed. The Inspectorate agrees that where the proposed development cable corridor elements are to be left in situ and there would be no impacts to habitats, species or designated areas from decommissioning activities along the cable corridor, this matter can be scoped out of the assessment. The ES should, however, consider likely impacts associated with the removal of above ground infrastructure, where likely significant effects to habitats, species and designated sites could occur. (ID 4.3.5)	Noted. Impacts scoped in and out of the assessment for all stages of the MHPGC Project are presented in Section 3.6, which considers the MDS set out in Section 3.7. Impacts associated with removal of above ground infrastructure have been considered in the assessment (see Section 3.9) where likely significant effects to habitats, species and designated sites could occur.
The Inspectorate recommends that the ES should identify whether the proposed development has the potential for significant transboundary effects, and if so, what these are, and which EEA States would be affected. The Inspectorate will undertake a transboundary screening on behalf of the SoS in due course. (ID 2.2.4 and ID 4.3.6)	The potential transboundary impacts are screened within Volume 1, Annex 4.3: Transboundary Screening, of the PEIR and transboundary effects are assessed within Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR.
The Scoping Report states that the assessment would consider nationally and locally statutory designated sites within a 10km buffer where there are bat and/ or ornithological interest features. At present, tables 8.39 and 8.40 do not include any such sites beyond a 2km buffer. Figures 8.13 and 8.14 do however show there are SSSIs beyond the 2km buffer. The ES should include an assessment of all designated sites within the Zol, where LSE could occur. The ES should be accompanied by a clear figure presenting the designated sites, including SSSIs designated for bats and/ or ornithological interest within the proposed 10km Zol and considered in the assessment. At present the 10km buffer/ Zol is not presented. The figures should include a clear key and labels to identify designated sites, including SSSIs. (ID 4.3.7)	The protected species Survey Areas and Study Areas have been informed by potential linkages to surrounding habitat, including designated sites, as well as the potential interaction of protected species within the wider context of the MHPGC Project. Figures showing the designated sites, including SSSIs designated for protected species are included in the Volume 3, Chapter 3 Terrestrial Ecology and Terrestrial and Intertidal Ornithology Annexes, of the PEIR.
The Zol from the proposed development to mapped waterbodies and watercourses should consider potential hydrological links rather than limiting the study area to 250m, particularly where support migratory fish may be present. (ID 4.3.8)	Fish surveys commenced in summer 2026 and at the time of writing remain ongoing. These surveys have been undertaken in accordance with the Zol suggested to ensure sufficient coverage of the potential impacts on fish species. The methodology for these surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.
The bats and artificial lighting guidance referenced in tables 8.44 and 8.47 has been updated. See Institution of Lighting Professionals (ILP) and Bat Conservation Trust (BCT) Guidance Note GN08/23: Bats and Artificial Lighting At Night (2023). The ES should refer to the latest ILP/ BCT guidance to inform the principles of the lighting design and mitigation. (ID 4.3.9)	Noted. Management of lighting during construction will be subject to an Outline Construction Artificial Light Emissions Management Plan (CoT25), and the Outline Landscape and Ecology Management Plan (CoT43) will include mitigation measures relating to protected or notable species and/or sensitive habitats. Further information corresponding to lighting will be provided in these outline documents at the ES stage once the project design has been defined, and will accord with the ILP/BCT guidance where relevant.

3.3.2 Further consultation and engagement

- 3.3.2.1 The scope, methodology and findings of the ecological surveys completed to date have been discussed and, where appropriate, agreed with stakeholders via Terrestrial Onshore Ecology and Terrestrial Onshore and Intertidal Ornithology EWG meetings. Two EWG meetings have been held to date; EWG 1 on 11 November 2025 and EWG2 on 5 August 2026.
- 3.3.2.2 As part of the ongoing consultation with the Onshore Ecology and Onshore and Intertidal Ornithology EWG, three technical notes have been issued for the purpose of seeking advice and agreement on the proposed MHPGC Project approach.
- 3.3.2.3 The first technical note was issued to NE on the 16 July 2025 and outlined the MHPGC Project's proposed scope of onshore and intertidal ecological and ornithological surveys. NE provided their feedback on the 112 September 2025. Feedback is set out in **Table 3-6**. This technical note was subsequently issued to all EWG members on the 25 November 2025
- 3.3.2.4 A second technical note was issued on 17 October 2025 and set out the detailed methodologies to surveys scoped in for the MHPGC Project, informed by feedback received on the first technical note. The EA and NE provided their feedback, with dated 6 and 7both received on the 7 November 2025, respectively. Comments received as part of this feedback are set out in **Table 3-6**.
- 3.3.2.5 The third technical note was issued to the EWG members on the 22 July 2026 and outlined the MHPGC Project's response to previous feedback from the EWG members and minutes from the meeting EWG 1. This technical note was reissued on 19 August 2026 following the second EWG meeting. At time of writing, No feedback has been received so far from any EWG member regarding this technical note.
- 3.3.2.6 No other consultation or engagement has been completed in relation to the surveys beyond that set out in the above.

Table 3-6: Summary of further consultation and engagement

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
11.09.2025	Natural England – Response to Technical Note	NE has no further observations on the proposed scope of protected species surveys, the thresholds set and the best practice guidance referenced.	Noted. No further consideration within the PEIR. Surveys have been completed in line with the methodologies agreed.
11.09.2025	Natural England – Response to Technical Note	The briefing note states UK Habitat Surveys are proposed of the MHPGC Project Scoping Boundary and a surrounding 30m buffer and that NVC surveys have been scoped in but are limited to areas with suitable habitats/species present only, as determined from the UK Habitat Surveys. NE advises that the scope is adapted so that NVC surveys are undertaken for Hesledon Moor East SSSI, Hesledon Moor West SSSI, Hawthorn Dene SSSI, and Durham Coast SSSI where they are likely to be impacted directly or indirectly. Additionally, if indirect effects to other protected sites are predicted, we recommend that these are also subject to an NVC survey. We advise that this is undertaken to enable assessment and future monitoring	NVC surveys have been completed for the MHPGC Project. The detailed methodology followed for said surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The habitats included within the NVC survey scope were adapted to ensure that advice from Natural England was considered. The following SSSIs: Hesledon Moor East SSSI, Hesledon Moor West SSSI, Hawthorn Dene SSSI, and Durham Coast SSSI; have been identified for NVC surveys as they are within the survey area, plus a 30m buffer from the MHPGC Project PEIR Red Line Boundary: Onshore, which accounts for any indirect impacts. The survey buffer was extended to 100m with respect to

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
		requirements if impacts cannot be avoided.	the Hawthorn Dene SSSI to include greater coverage of the designated site Further detail is set out within Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.
11.09.2025	Natural England – Response to Technical Note	NE advises that the briefing note be updated to include the timing of the wintering bird surveys to establish whether 24 months of site-specific survey data is met so that NE can provide further advice on whether the proposed methods are sufficient.	Wintering bird surveys have been carried out for the MHPGC Project and are set out within Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR. The detailed methodology for wintering bird surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The wintering bird surveys involved six visits between October 2023 to March 2024, and further six visits undertaken between October 2025 and March 2026. Wintering Birds surveys will continue from October 2026 to March 2027.
11.09.2025	Natural England – Response to Technical Note	NE advises that the briefing note be updated to clarify the timing of the intertidal bird surveys i.e. whether the surveys will result in a complete set of baseline data covering two years, so that NE can provide further advice on whether the proposed methods are sufficient.	Intertidal surveys have been carried out for the MHPGC Project and are set out within Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR. The detailed methodology for intertidal bird surveys has been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The intertidal bird surveys were undertaken between April 2023 and March 2024 and between October 2025 and March 2026 alongside the wintering bird surveys, continuing through to September 2026, to provide two non-consecutive years of intertidal ornithology baseline data. These surveys are ongoing and will be reported on in the Environmental Statement.
11.09.2025	Natural England – Response to Technical Note	NE advises that the monthly intertidal bird surveys should include a survey during high tide and low tide. NE advises that the survey methods are reviewed to ensure sufficient data has been obtained and that detail of the surveys should be noted in an updated briefing note and any survey reports.	Intertidal surveys have been carried out for the MHPGC Project and are set out within Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR. The detailed methodology followed for said surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
			The intertidal bird survey made inclusion of high tide and low tide surveys along the coast within the intertidal bird Survey Area to account for waterbirds and waders using the intertidal and cliff habitat and the sea on passage/to overwinter within the MHPGC Project PEIR Red Line Boundary.
11.09.2025	Natural England – Response to Technical Note	NE assumes that the repeated intertidal survey locations will be unchanged from those surveyed in 2023/2024. NE advises that the briefing note and any survey reports be updated to clarify the locations. As the exact landfall location of the cable is subject to a process of refinement, NE advises that additional survey areas may be required as the full Scoping Boundary plus a buffer has not been surveyed.	Intertidal surveys have been carried out for the MHPGC Project and are set out within Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR . The detailed methodology followed for said surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR . The intertidal bird surveys made inclusion of high tide and low tide surveys along the coast within the intertidal bird Survey Area to account for waterbirds and waders using the intertidal and cliff habitat and the sea on passage/to overwinter within the MHPGC PEIR Red Line Boundary. The survey extent for intertidal bird surveys up to March 2026 included both northern and central landfall options, within the MHPGC Scoping Red Line Boundary. Then from March 2026 – September 2026 surveys cover the Central Landfall only within the MHPGC Project PEIR Red Line Boundary, due to route planning and site selection.
11.09.2025	Natural England – Response to Technical Note	NE advises that the briefing note be updated to clarify the period for the updated (2025) breeding bird surveys so that NE can provide further advice on whether the proposed methods are sufficient.	Breeding bird surveys have been carried out for the MHPGC Project and are set out within Volume 3, Annex 3.12: Interim Breeding Bird Surveys Technical Report, of the PEIR . The detailed methodology followed for breeding bird surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR . The breeding bird surveys involved six visits completed between April and July 2023, and a further six visits completed between April and July 2025. Six visits have also been completed between March and July 2026, the full results of which will be presented in the ES.
11.09.2025	Natural England – Response to Technical Note	NE advises that the survey buffer applied for the ornithological surveys should be reviewed to ensure that it provides the baseline for indirect effects from the project,	The detailed methodology followed for ornithological surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
		particularly disturbance effects from noise and visual disturbance.	Ornithology Survey Methodologies Technical Report, of the PEIR. The ornithological survey areas are considered to represent the area within which potential impacts on ornithology would occur, including potential indirect effects from noise and visual disturbance, as suggested by NE.
11.09.2025	Natural England – Response to Technical Note	NE notes that it should be known what features are likely to be present where the project will create an increase of over 3dB in noise to what is experienced at the baseline. This is particularly important for the non-breeding/intertidal survey extents. NE advises that the type of noise that could be generated should be clearly defined within assessments to ensure that noise evidence is reported using the most relevant metrics for understanding the worst-case scenario. NE recommends that baseline noise data at ecological receptors is obtained for the assessments and that modelling is undertaken to establish any zones of potential bird displacement from disturbance resulting from the proposal. Modelling should be presented in map form and be inclusive of the following data: - Noise contours using the relevant noise metric, presented with and without noise-reduction measures; - Marked buffer distances to account for bird sightlines, presented with and without screening measures; - The red line boundaries of any projects within the scope of in-combination assessments.	The detailed methodology followed for ornithological surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The ornithological survey areas are considered to represent the area within which potential impacts on ornithology would occur, including potential indirect effects from noise and visual disturbance, as suggested by NE. Noise impacts are considered in Volume 3, Chapter 6: Onshore Noise and Vibration, of the PEIR. As part of this assessment, ecology and ornithology designated sites have been included as receptors. The impact of noise on ornithological receptors is assessed in Section 3.9. The requirement for targeted baseline noise data collection and modelling is being considered and will be included in the ES where required.
11.09.2025	Natural England – Response to Technical Note	NE advises that species-specific considerations to survey design should be a consideration. For example, species such as curlew (<i>Numenius arquata</i>) are known to be disturbed up to 650m away by human activity. Additionally, NE advises that if habitats that might be of value to wildfowl or waders sheltering during harsh weather are present, these should be checked during such weather, if it is safe and possible to do so.	Intertidal surveys have been carried out for the MHPGC Project and are set out within Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR. The detailed methodology followed for said surveys have been set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The species-specific considerations mentioned by NE were incorporated into the survey design, including considering

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
			species such as extending the buffer to 650m to account for non-breeding curlew.
06.11.2025	EN0210005 – Environment Agency, November 2025	EA-01 – Fish Surveys: Provide clarity regarding the conditions/criteria used to determine whether fish surveys are scoped in, with specific attention to “migratory fish”.	Fish surveys are to be undertaken between June 15th and 25th September 2026 and are ongoing at the time of writing. These surveys are being conducted with a Zol of at least 250m from the PEIR Red Line Boundary, to ensure sufficient coverage of the potential impacts on fish species. Due to data processing and analysis and the results of these surveys will be included in the ES. The methodology for these surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.
06.11.2025	EN0210005 – Environment Agency, November 2025	EA02 – Permits Required for Fish Surveys: Ensure that a permit is obtained from the Environment Agency prior to any fish surveys taking place. A permit is required to use any equipment other than rod and line.	Noted. Necessary permits were obtained from the Environment Agency prior to fish surveys being undertaken, specifically a Fisheries Regulations 2 (FR2) permit
06.11.2025	EN0210005 – Environment Agency, November 2025	EA03 – Invasive Non-Native Species (INNS): Provide confirmation that INNS will be considered as part of the UKHab survey or a separate INNS survey.	INNS have been recorded during the UKHab surveys as Target Notes. This survey identified INNS and so a targeted survey was not deemed necessary. UKHab survey results will be set out in Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR. The detailed methodology followed for said surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.
06.11.2025	EN0210005 – Environment Agency, November 2025	EA04 – Water Vole Surveys: Water vole surveys - Ensure that a minimum of two surveys for field signs will be carried out, as per best practice guidance. The surveys should be completed between April to September, with one undertaken during the first half (mid-April to end of June), and one taken in the second half (July to September). The surveys should be carried out two months apart.	Two survey visits for water vole have been completed during the appropriate survey period. The first field survey visit was undertaken in September 2025 during the second half of the season. A further survey was completed in April 2026 during the first half of the season. A final survey was undertaken in September 2026 during the second half of the season to provide data from two survey visits during the same season. The results of this final survey will be included within the ES. Water vole surveys have been undertaken for the MHPGC Project and

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
			will be set out in Volume 3, Annex 3.11: Interim Water Vole Technical Report, of the PEIR . The detailed methodology followed for said surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR .
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 1 – Natural England has produced standing advice for avoiding harm or disturbance to protected species . This has been produced to assist applicants to understand the impact of developments on protected species and what surveys are likely to be required. The methods listed within the Technical Note should follow this guidance, which appears to be the case. For the intertidal bird surveys methods, we note that it has been clarified that the surveys planned for October 2025 to March 2026 inclusive will be undertaken at high and low tide and that high tide counts will establish maximum counts of bird species within intertidal habitats and low tide counts will assess the spatial distribution of non-breeding species and help determine the important foraging areas. It is not clear from the Technical Note if the same method was employed for the historical surveys undertaken from April 2023 to March 2024. Any differences in survey methods will need to be clearly explained in survey reports and if required, details of how different types of survey methodologies have been reconciled will need to be provided within the future assessments.	The intertidal bird Survey Area for the 2025/2026 surveys was extended to cover the rocky reef habitat to the north of the Landfall (north of the MHPGC Project PEIR Red Line Boundary). In addition, the survey programme has been extended to run until September 2026. The survey extent for intertidal bird surveys up to March 2026 included both northern and central landfall options, included within the MHPGC Scoping Red Line Boundary. Then from March 2026 – September 2026 surveys cover the central landfall within the MHPGC Project PEIR Red Line Boundary only, due to route planning and site selection. There were differences in survey methodology between the 2023–2024 and 2025–2026 intertidal surveys (through-the-tide timed counts vs. high and low-tide WeBS-style counts, respectively). However, all intertidal bird surveys cover high-tide and low-tide count data, and are therefore comparable from a methodological perspective (notwithstanding that survey extent was refined between the survey periods). Data, including an explanation of how different methodologies have been reconciled, will be detailed in Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR. Intertidal bird surveys completed to date are detailed in Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Birds Surveys Technical Report, of the PEIR.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 2 - Natural England's standing advice referenced above notes that all surveys should be completed by qualified ecologists and follow best practice guidelines. Natural England agrees with the list of guidance provided for each survey type within the Technical Note but notes that for	Noted. All surveys have been completed by suitably qualified ecologists, employing survey methodologies aligned with best practice guidance, as per Chapter 3, Annex 3.1 Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
		the proposed intertidal ecological surveys there is no reference in Section 5.12 to the <i>Natural England Baseline Characterisation Surveys and Cable Best Practice Guidance</i> . This guidance provides Natural England's advice on the survey requirements of intertidal surveys for cable projects. We advise that you add this guidance to the list for this survey type and review it against the proposed methods.	The Applicant thanks Natural England for confirming agreement with the list of guidance provided. The Applicant confirms due consideration and reference to the <i>Natural England Baseline Characterisation Surveys and Cable Best Practice Guidance</i> has been given in the intertidal ecology survey methodology. The results from the intertidal ecology survey will be presented within the ES.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 3 (NVC Surveys) - Natural England welcomes the applicant's proposal to survey designated sites using NVC methods and that the scope has been adapted following our previous DAS Advice (Our Ref: 517315). As noted previously, the survey extent should include areas where indirect effects are predicted (for example from deposition resulting from increased construction traffic). Natural England advice that this is undertaken to enable assessment and future monitoring requirements if impacts cannot be avoided.	The habitats included within the NVC survey scope were adapted to ensure that advice from Natural England was considered. The following SSSIs: Hesledon Moor East SSSI, Hesledon Moor West SSSI, Hawthorn Dene SSSI, and Durham Coast SSSI; have been identified for NVC surveys as they are within the survey area, plus a 30m buffer from the MHPGC Project PEIR Red Line Boundary: Onshore, which accounts for any indirect impacts. The survey buffer was extended to 100m with respect to the Hawthorn Dene SSSI to include greater coverage of the designated site NVC surveys are completed for the MHPGC Project and interim results are set out within Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR . The detailed methodology followed for said surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR .
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 3 (Ornithological surveys: Wintering Birds) - Non-breeding terrestrial ornithological surveys were completed between October 2023 and March 2024. Surveys will be undertaken monthly between October 2025 and March 2026 (inclusive). Therefore, two non-consecutive years of data will be available for the assessments which we concur with and have no further comments.	Noted. Further wintering bird surveys are scheduled to take place between October 2026 and March 2027 to provide two consecutive years of survey data.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 3 (Ornithological surveys: Intertidal birds) - Monthly intertidal bird surveys were undertaken between April 2023 and March 2024 (excluding June 2023). The second	The intertidal bird survey methodology has been adapted based on Natural England's advice and will be extended to September 2026. Detailed intertidal bird surveys have been included for the MHPGC Project and are set out within

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
	A018810), November 2025	year of survey will be undertaken monthly between October 2025 and March 2026 (inclusive). Natural England advise that the survey period for the second year of survey is extended to September 2026 as this will then provide a full set of data covering the same period as the first year and will provide a representative dataset of intertidal birds features of the designated sites present during the wintering period, passage and breeding seasons.	Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR. The detailed methodology for said surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 3 (Ornithological surveys: Intertidal birds, cont.) - Natural England notes that Figure 2.3 of the Technical Note shows that the intertidal bird Survey Area for the 2025/6 surveys has been extended from what was shown on Figure 7.27 of the Morven Hawthorn Pit Grid Connection Project Environmental Impact Assessment Scoping Report Feb 2025. The area has been extended to cover the full areas of red line boundary currently under consideration for the landfall location. We welcome the inclusion of this extended survey area into this year of survey because to the north of the scoping area is a rocky reef habitat which is known to be used by foraging waders.	Comment noted. The intertidal bird Survey Area for the 2025/2026 surveys was extended to cover the rocky reef habitat to the north of Landfall (north of the PEIR Red Line Boundary), and the survey programme has been extended to run until September 2026. The survey extent for intertidal bird surveys up to March 2026 included both northern and central landfall options within the MHPGC Scoping Red Line Boundary. Then from March 2026 – September 2026 surveys cover the central landfall within the MHPGC Project PEIR Red Line Boundary only, due to route planning and site selection. Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Birds Surveys Technical Report, of the PEIR presents interim results for intertidal bird surveys.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 3 (Ornithological surveys: Breeding season bird) - Breeding season bird surveys were completed between April and June 2023. Surveys will be undertaken monthly between March and early July 2026. Therefore, two breeding seasons of non-consecutive years of data will be available for the assessments which we concur with and have no further comments.	Noted. Further breeding bird surveys are ongoing between March and July 2026 to provide two consecutive years of survey data. To clarify, breeding bird surveys were completed between April - July in 2025, not March – July. The Application wishes to apologise for the confusion. It is assumed Natural England meant 2025 and not 2026 in their original response. Data is therefore available for the following periods: • April – July 2023 • April – July 2025 • March – July 2026
07.11.2025	530880 – Natural England	Response to Question 3 (Ornithological surveys: Breeding	The ornithological Survey Areas are considered to represent the area within

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
	Discretionary Advice Service (UDS A018810), November 2025	season bird) Disturbance effects - If works are located close to the limits of the red line boundary in locations where designated site features may be susceptible to disturbance effects, then it is Natural England's view that the proposed survey extents may not be sufficient. As per our previous DAS advice (Our Ref: 517315), Natural England advises that the buffer applied to the ornithological surveys should ensure that the results provide a baseline for assessing all impacts to the features of designated sites. Natural England therefore recommends that a wider buffer is considered in these areas for the forthcoming surveys to ensure there is sufficient baseline data.	which potential impacts on ornithological features of interest to designated sites could occur, including potential indirect effects from noise and visual disturbance, as suggested by Natural England. Based upon Natural England advice (UDS A018810), the buffers were extended up to 500m north and south of the Red Line Boundary for intertidal surveys, and 650m for WBS (to account for non-breeding curlew). The detailed methodology followed for ornithological surveys is out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 3 (Ornithological surveys: Breeding season bird) Disturbance effects, cont. - On page 34 of the Technical Note, within the section on breeding season bird surveys, it is stated that potential indirect effects (from noise and visual disturbance) will be considered as part of the assessment where there is a likelihood of significant effects occurring. It also states that noise surveys completed for the MHPGC Project will be used to inform the consideration of potential disturbance of ecological and ornithological receptors in proximity to the MHPGC Project. We welcome this approach, however, wish to clarify that our previous DAS advice (Our Ref: 17315), regarding disturbance effects applies to any time of year. Therefore, the assessment of these effects should not be limited to breeding bird features.	Where impacts associated with noise and visual disturbance are considered to be possible for ornithological receptors (breeding birds, wintering birds, intertidal and passage birds), these are included in the assessment in Section 3.9.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 3 (Other Survey Types) - Natural England has no further comments on the coverage of other survey types from those listed above.	Noted.
07.11.2025	530880 – Natural England Discretionary Advice Service (UDS A018810), November 2025	Response to Question 4 - Natural England agrees that the survey list is comprehensive and that the rationale for scoping out surveys seems justified however, it must be noted that no results have been	Noted. Results of completed/ongoing surveys are provided in Section 3.4.

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
		supplied to confirm what protected or notable species may be present.	
19.12.2025	Natural England – Response EWG1 Meeting Minutes (including draft agreements)	Natural England is aware that significant numbers of purple sandpiper, turnstone and sanderling can occur on the coast in late spring and early autumn and not just during the core ‘wintering’ period. Therefore, by not repeating year 2 of the intertidal surveys in late spring and early autumn it may mean a full representation may not be achieved. Natural England notes that not undertaking specific surveys during a period where notified features may be present, coupled with the fact that the Durham Coast has poor WeBS coverage may result in a reliance on a precautionary approach to assessments. Natural England, therefore, continues to advise that the second year of survey is repeated as per the methods of the first year to provide a full two-year representative baseline of the intertidal area.	The MHPGC Project considered the feedback provided by Natural England and amended the proposed survey programme to include a full second year of intertidal bird surveys. The intertidal bird dataset for the MHPGC Project comprises the following periods: • April 2023 to March 2024 (completed). • October 2025 to September 2026 (ongoing). In addition, the MHPGC Project has undertaken a third year of breeding bird surveys from March to July 2026 inclusive and will be undertaking a third year of wintering bird surveys across the 2026/2027 winter period. This additional survey year is intended to ensure that the MHPGC Project is supported by a current and representative baseline, including two consecutive years of wintering bird data. The detailed methodology followed for said surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR.
19.12.2025	Natural England – Response EWG1 Meeting Minutes (including draft agreements)	Natural England states that further information or detail is required. Natural England notes the Technical Note: MVCNS-J4901-RAM-20004 Morven Hawthorn Pit Grid Connection Project Onshore and Intertidal Ecology and Ornithology Survey Methodology October 2025 stated that surveys for white-clawed crayfish would be scoped in if there was watercourses suitable for the white-clawed crayfish present and if the project has the potential to directly impact the suitable habitats. Natural England states it is not clear whether watercourses suitable for the white-clawed crayfish have been identified from the information supplied to date. Natural England advises that evidence that white-clawed crayfish are unlikely to be significantly impacted will be required.	The MHPGC Project reviewed the feedback provided by Natural England and amended the proposed survey programme to include dedicated, White-Clawed Crayfish (WCC) (<i>Austropotamobius pallipes</i>) surveys. These surveys have been undertaken within suitable habitats located inside the MHPGC Project PEIR Red Line Boundary: Onshore. The detailed methodology followed for these surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR. The results of the surveys will be presented and discussed within the ES.
19.12.2025	Natural England – Response EWG1 Meeting Minutes (including draft agreements)	Natural England states that further information or detail is required. Natural England notes the Technical Note: MVCNS-J4901-RAM-20004 Morven Hawthorn Pit Grid Connection Project Onshore and	The MHPGC Project reviewed the feedback provided by Natural England and amended the proposed survey programme to include dedicated fish surveys. These surveys have been undertaken within suitable habitats

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
		Intertidal Ecology and Ornithology Survey Methodology October 2025 stated that surveys for fish would be scoped in if there were watercourses suitable for fish present and if the project has the potential to directly impact the suitable habitats. Natural England states it is not clear whether watercourses suitable for fish have been identified from the information supplied to date. Natural England advises that evidence that fish are unlikely to be significantly impacted will be required.	located inside the MHPGC Project PEIR Red Line Boundary: Onshore. The detailed methodology followed for these surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report , of the PEIR. The results of the surveys will be presented and discussed within the ES.
19.12.2025	Natural England – Response EWG1 Meeting Minutes (including draft agreements)	Natural England states that further information or detail is required. Natural England notes the Technical Note: MVCNS-J4901-RAM-20004 Morven Hawthorn Pit Grid Connection Project Onshore and Intertidal Ecology and Ornithology Survey Methodology October 2025 stated that surveys for aquatic macroinvertebrates would be scoped in if there were watercourses suitable for aquatic macroinvertebrates present and if the project has the potential to directly impact the suitable habitats. Natural England states it is not clear whether watercourses suitable for aquatic macroinvertebrates have been identified from the information supplied to date. Natural England advises that evidence that aquatic macroinvertebrates are unlikely to be significantly impacted will be required.	The MHPGC Project reviewed the feedback provided by Natural England and amended the proposed survey programme to include dedicated aquatic macroinvertebrates surveys. These surveys have been undertaken within suitable habitats located inside the MHPGC Project PEIR Red Line Boundary: Onshore. The detailed methodology followed for these surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report , of the PEIR. The results of the surveys will be presented and discussed within the ES.
19.12.2025	Natural England – Response EWG1 Meeting Minutes (including draft agreements)	Natural England states that further information or detail is required. Natural England notes the Technical Note: MVCNS-J4901-RAM-20004 Morven Hawthorn Pit Grid Connection Project Onshore and Intertidal Ecology and Ornithology Survey Methodology October 2025 stated that surveys for aquatic macrophytes would be scoped in if there were watercourses suitable for aquatic macrophytes present and if the project has the potential to directly impact the suitable habitats. Natural England states it is not clear whether watercourses suitable for aquatic macrophytes have been identified from the information supplied to date. Natural England advises that evidence that aquatic macrophytes are unlikely to be	The MHPGC Project reviewed the feedback provided by Natural England and amended the proposed survey programme to include dedicated aquatic macrophytes surveys. These surveys have been undertaken within suitable habitats located inside the MHPGC Project PEIR Red Line Boundary: Onshore. The detailed methodology followed for these surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report , of the PEIR. The results of the surveys will be presented and discussed within the ES.

Date	Consultee and response type	Comment	How and where this is considered in the PEIR
		significantly impacted will be required.	
19.12.2025	Natural England – Response EWG1 Meeting Minutes (including draft agreements)	Natural England states that further information or detail is required. Natural England notes the Technical Note: MVCNS-J4901-RAM-20004 Morven Hawthorn Pit Grid Connection Project Onshore and Intertidal Ecology and Ornithology Survey Methodology October 2025 stated that surveys for aquatic macrophytes would be scoped in if there were ponds present of sufficient quality to support a population of species that are of increased biodiversity value and if the project has the potential to directly impact the suitable habitats. Natural England states it is not clear whether ponds have been identified from the information supplied to date. Natural England advises that evidence these are unlikely to be significantly impacted will be required.	The MHPGC Project reviewed the feedback provided by Natural England and amended the proposed survey programme to include dedicated pond surveys. These surveys have been undertaken within suitable habitats located inside the MHPGC Project PEIR Red Line Boundary: Onshore. The detailed methodology followed for these surveys will be out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report , of the PEIR. The results of the surveys will be presented and discussed within the ES.
15.12.2025	Environment Agency – Response to EWG 1	With regard to the list of surveys (fish, pond, white clawed crayfish, aquatic macroinvertebrates, macrophytes) which are ‘Surveys Considered to be Potentially Required’, the EA states that further information is required. The EA notes that the Natural England Survey Briefing Note July 2025, states that surveys will be scoped in if suitable habitat is identified and the habitat is directly impacted by the development. The EA requests confirmation on whether there will be no direct impacts on all watercourses and ponds and confirmation on whether direct impacts take into account access crossings as well trenchless crossing techniques.	The MHPGC Project reviewed the feedback provided by Environment Agency and amended the proposed survey programme to include dedicated fish, pond, WCC, aquatic macroinvertebrates and macrophytes surveys. These surveys have been undertaken within suitable habitats located inside the MHPGC Project PEIR Red Line Boundary: Onshore. The detailed methodology followed for these surveys is set out in Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report , of the PEIR. The results of the surveys will be presented and discussed within the ES.

3.4 Baseline characterisation

3.4.1 Overview

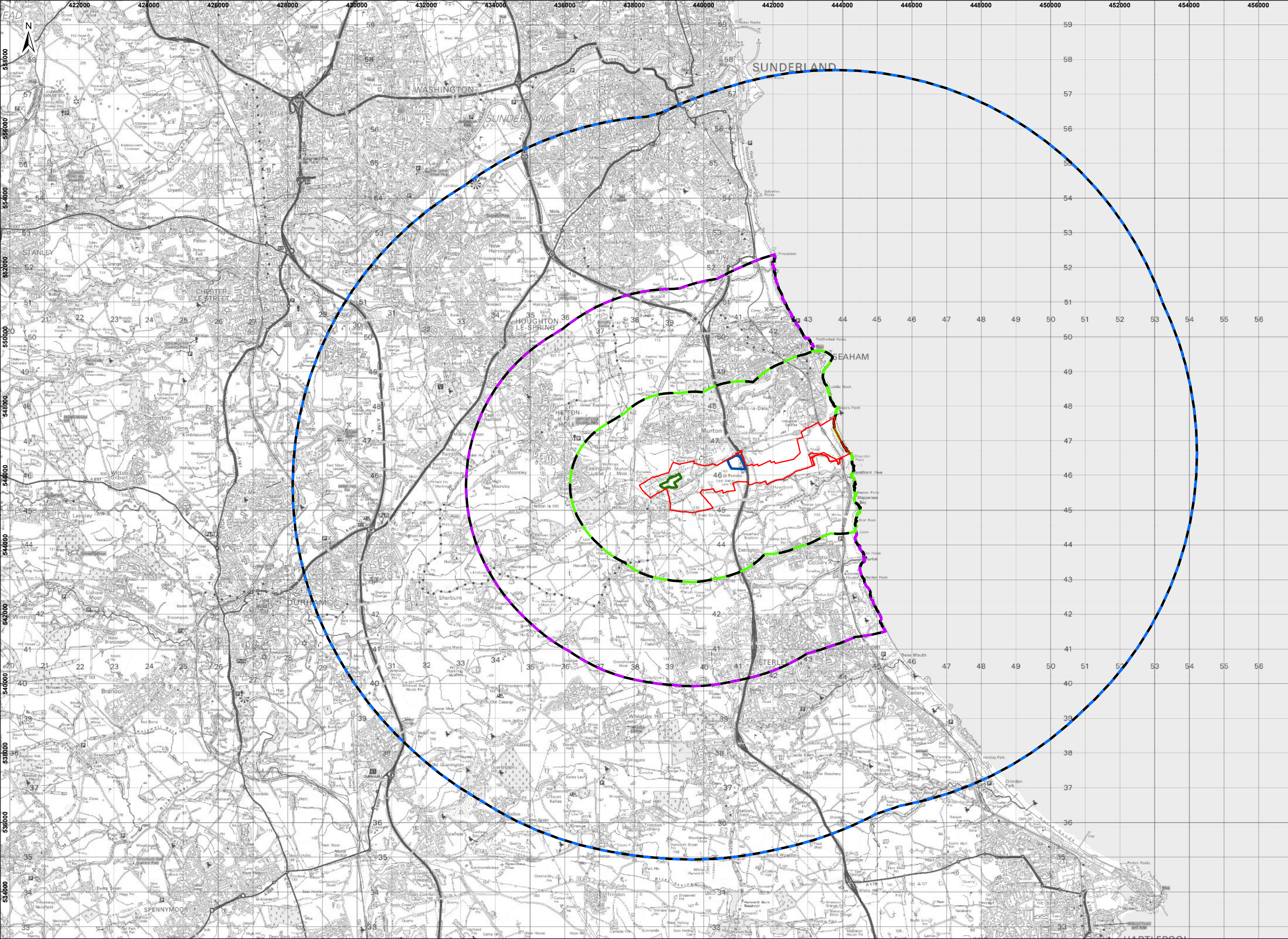
- 3.4.1.1 **Volume 1, Chapter 2: Project Description, of the PEIR** sets out the description of the MHPGC Project and **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** sets out the overarching approach that has been used in developing the preliminary environmental information.
- 3.4.1.2 This section describes the methods and data sources used to characterise the baseline for terrestrial ecology and terrestrial and intertidal ornithology within the relevant study areas and describes the existing baseline characteristics.

3.4.2 Study Areas

- 3.4.2.1 The term ‘Study Area’ is used to evaluate the maximum spatial extent for which an impact (direct or indirect) can reasonably be expected to occur for a particular ecological receptor group (i.e. species/species assemblages and/or habitat/s) subject to desk-based research. Several Study Areas have been utilised for the purposes of ecological assessment in line with good practice guidance and with respect to the MHPGC Project and are detailed below:
- Desk-study Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 10km buffer for ornithological designated sites, 10km buffer for bat designated sites; and a 2km buffer for other terrestrial designated sites);
 - UKHab Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 2km buffer applied);
 - Badger Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 2km buffer applied);
 - Bat Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 10km buffer applied);
 - Reptile Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 2km buffer applied);
 - GCN Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 2km buffer applied);
 - Otter Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 5km buffer applied);
 - Water Vole Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 2km buffer applied);
 - Breeding Bird Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 10km buffer applied);
 - Wintering, Passage and Intertidal Bird Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 10km buffer applied);
 - White-clawed Crayfish Study Area (the MHPGC PEIR Red line Boundary: Onshore, with a 2km buffer applied);
 - Freshwater Fish, Macroinvertebrates and Macrophyte Study Area (watercourses intersected by, and hydrologically connected to, the MHPGC PEIR Red Line Boundary: Onshore within 2km upstream and downstream).
- 3.4.2.2 The Ecology and Ornithology Study Areas are shown on **Figure 3.1**

3.4.3 Survey Areas

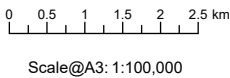
- 3.4.3.1 The Survey Area is defined as the area in which potential direct and indirect impacts to ecological and ornithological receptors are likely to occur.
- 3.4.3.2 The Survey Area used by the suite of terrestrial ecological and terrestrial and intertidal ornithological surveys are specific to the surveys being undertaken. The Survey Area for each survey type is stated in the relevant technical report (**Volume 3, Annex 3.1 to Volume 3, Annex 3.13, of the PEIR**) and listed below. The survey areas are shown in **Figure 3.2**. Information on the coverage for each species-specific Survey Area that has been undertaken to inform the PEIR is included in **Table 3-7**.
- 3.4.3.3 Where surveys are for relatively stationary receptors, the survey area is smaller (e.g. for UKHab surveys, a Survey Area of the MHPGC PEIR Red Line Boundary: Onshore plus 30m was used). Where receptors are more mobile, or the potential for impacts to occur covers a greater area, the Survey Area recognises a larger buffer (e.g. a maximum buffer of 650m is recommended for curlew [Goodship and Furness, 2022]; GCN uses a 250m buffer around the MHPGC PEIR Red Line Boundary: Onshore).



- LEGEND**
- MHPGC PEIR Red Line Boundary: Onshore
 - Green LSS Option Area
 - Blue LSS Option Area
 - Reptile, Water Vole, Great Crested Newt, Badger, UKHab, National Vegetation Classification (NVC), River Condition Assessment and Hedgerow Study Area (2km Buffer)
 - Otter Study Area (5km Buffer)
 - Breeding Birds, Wintering and Intertidal Birds and Bats Study Area (10km Buffer)

Project Name:
MORVEN HAWTHORN PIT GRID CONNECTION PROJECT

Drawing Title:
FIGURE 3.1: TERRESTRIAL ECOLOGY AND TERRESTRIAL AND INTERTIDAL ORNITHOLOGY STUDY AREA

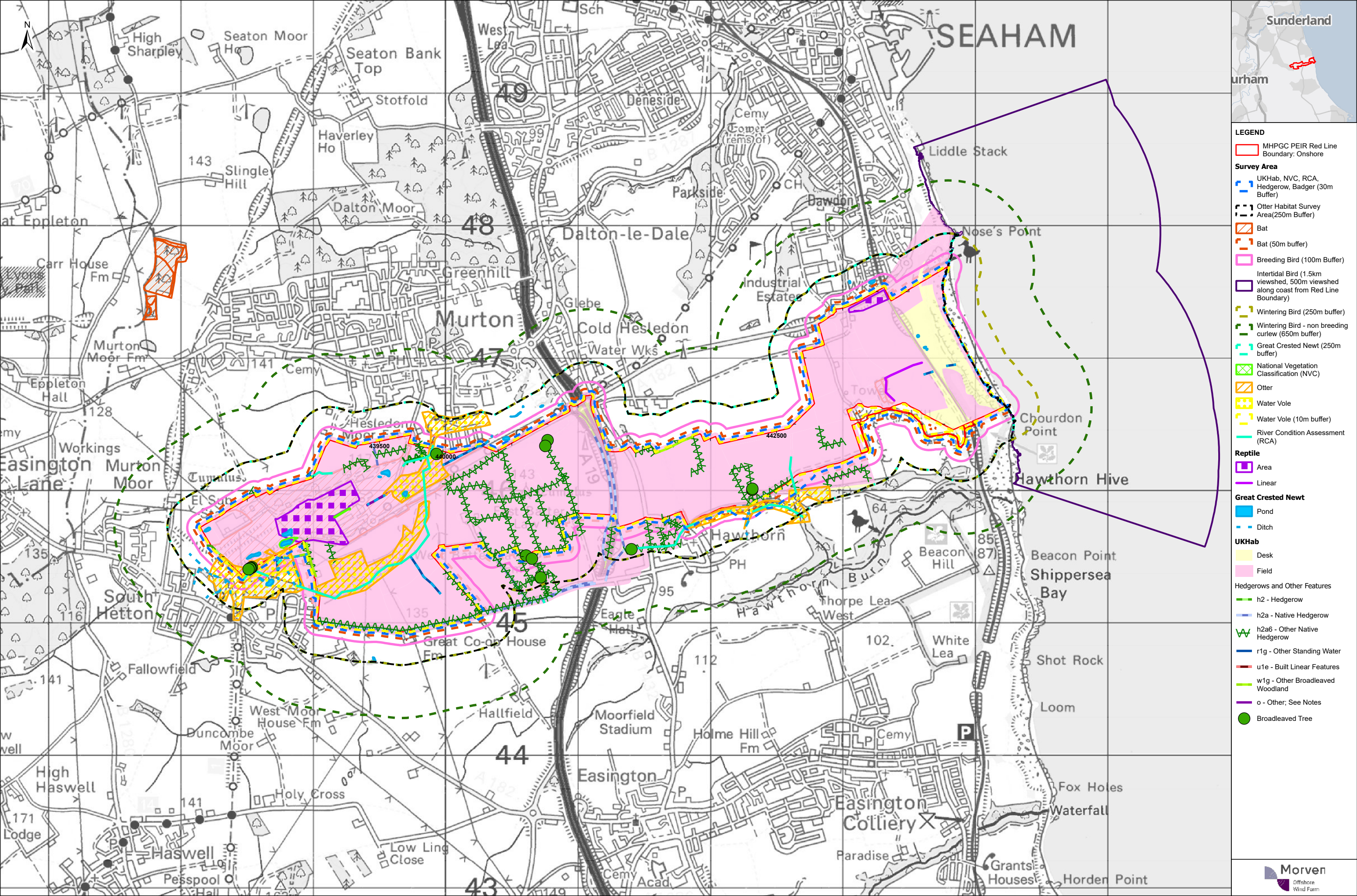


Geodetic Information:
Datum: OSGB 1936
Projection: British National Grid

Data Sources:
BP, Ordnance Survey

Service Layer Credits:
GB Background: Contains OS data © Crown Copyright and database right 2026. Contains data from OS Zoomstack
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Drawing Number: MHPGC-WSP-PEIR-BIO-146				
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Project Name:
MORVEN HAWTHORN PIT GRID
CONNECTION PROJECT

Drawing Title:
FIGURE 3.2: TERRESTRIAL ECOLOGY AND TERRESTRIAL AND INTERTIDAL
ORNITHOLOGY SURVEY AREA

0 0.5 km
Scale@A3: 1:25,000

Geodetic Information:
Datum: OSGB 1936
Projection: British National Grid

Data Sources:
BP, Ordnance Survey

Service Layer Credits:
GB Background: Contains OS data © Crown Copyright and database right 2026. Contains data from OS Zoomstack
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3.4.4 Relevant guidance

3.4.4.1 The preliminary assessment has been carried out in accordance with the following guidance documents:

- CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2024);
- Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase I: Expectations for pre-application baseline data for designated nature conservation and landscape receptors to support offshore wind applications (Natural England, 2022);
- Biodiversity – Code of Practice for Planning and Development: BS 42020:2013 (British Standards Institution, 2013);
- Ancient Woodland, Ancient Trees and Veteran Trees: Advice for Making Planning Decisions (Natural England and Forestry Commission, 2022).

3.4.5 Baseline data sources

Desk study

3.4.5.1 The purpose of the desk study was to collect and analyse existing baseline data in relation to protected species records, and designated sites notified for terrestrial ecology and terrestrial and intertidal ornithology, within the Ecology and Ornithology Study Areas. The existing baseline data have been gathered using the below list.

- DEFRA Multi-Agency Geographic Information for the Countryside (MAGIC) Map (Natural England, n.d.);
- Environmental Records Information Centre North East (ERIC NE, n.d.);
- National Biodiversity Network (NBN) Atlas (NBN Atlas, 2026);
- Fish, macroinvertebrate and macroinvertebrate survey data from the Ecology and Fish Data Explorer (Department of Environment Food & Rural Affairs, 2026)

3.4.5.2 Desk study results are set out within the relevant technical report annexes, except for aquatic receptors. As aquatic surveys are ongoing and the associated technical reports had not been completed at the time of PEIR preparation, desk study results for aquatic receptors are presented below in **Section 3.4.6**. Fish, macroinvertebrate and macrophyte records were obtained from the Ecology and Fish Data Explorer (Defra, 2026) for watercourses intersected by, and hydrologically connected to, the MHPGC PEIR Red Line Boundary: Onshore within 2km upstream and downstream. Additional records were obtained from the Environmental Records Information Centre North East (Nature England, 2026) for a search area extending 2km from the MHPGC PEIR Red Line Boundary: Onshore. White-clawed crayfish records were obtained from Nature England (2026) and the NBN Atlas (2026) for a search area extending 2km from the MHPGC PEIR Red Line Boundary: Onshore.

Site specific surveys

3.4.5.3 To inform the PEIR, site-specific surveys have been undertaken, listed in **Table 3-7**. Due to timescales for data processing and analysis survey data collected after April 2026 will be included in the ES.

Table 3-7: Summary of site-specific surveys undertaken to inform the PEIR.

Survey Type	Dates	Coverage	Relevant Technical Report (Annex)
UKHab	Phase 1 habitat surveys undertaken between May 2022 and June 2023. UKHab surveys were undertaken on: • 10 – 12 June 2025; • 28 July – 01 August 2025; • 18 – 20 August 2025;	UKHab Survey Area, defined as the MHPGC PEIR Red line Boundary: Onshore, with an additional 30m buffer.	Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.

Survey Type	Dates	Coverage	Relevant Technical Report (Annex)
	01 – 02 April 2026; 06 – 10 July 2026.		
NVC	NVC surveys were undertaken alongside UKHab surveys on: 10 – 12 June 2025; 28 July – 01 August 2025; 18 – 20 August 2025. To provide full survey coverage of the NVC Survey Area, further surveys in 2026 were undertaken on: 06 – 10 July 2026 19 August 2026	NVC Survey Area, defined as identified habitats of higher ecological value within the MHPGC PEIR Red line Boundary: Onshore, or within an additional 30m buffer. The survey buffer was extended to 100m with respect the Hawthorn Dene SSSI to include greater coverage of the designated site.	Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.
RCA	RCA surveys were undertaken on 12 - 14 August 2025	RCA Survey Area, defined as suitable watercourses within the MHPGC PEIR Red Line Boundary: Onshore, or within an additional 30m buffer.	Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.
Hedgerow	Hedgerows were identified and mapped alongside UKHab surveys on: 10 – 12 June 2025; 28 July – 01 August 2025; 18 – 20 August 2025; 06 – 07 April 2026; 06 – 10 July 2026. Surveys to determine the importance of hedgerows were undertaken in 2025-2026 and will be fully reported in the ES.	Hedgerow Survey Area, defined as all relevant hedgerows within the MHPGC PEIR Red Line Boundary: Onshore, or within an additional 30m buffer.	Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR.
Badger	Initial walkover undertaken between March 2023 and between July and November 2024. Badger surveys undertaken between 22 – 25 September 2025.. Camera trap monitoring undertaken between October 2025 and February 2026. Further camera trap monitoring was undertaken between August and September 2026.	Badger Survey Area, determined as habitat considered to be suitable to support badger (such as woodland, scrub, verges, and grassland habitats which provide foraging and commuting) within a 30m buffer surrounding the MHPGC PEIR Red line Boundary: Onshore.	Volume 3, Annex 3.3: Interim Badger Surveys Technical Report and Volume 3, Annex 3.4: CONFIDENTIAL Interim Badger Surveys Technical Report, of the PEIR.
Bats	PRA and GLTA surveys were undertaken in the week of the 15 September 2025. Further surveys, including PRA, GLTA, Emergence and Transect surveys, are ongoing in 2026. Those completed at time of writing include:	The survey area considered for bats was made up of several survey areas including the PRA/GLTA Survey Area and the Bat Emergence Survey Area: The Bat Survey Area has been defined as	Volume 3, Annex 3.5: Interim Bat Surveys Technical Report and Volume 3, Annex 3.6: CONFIDENTIAL Interim Bat Surveys Technical Report, of the PEIR.

Survey Type	Dates	Coverage	Relevant Technical Report (Annex)
	• PRF/GLTA: 20 - 24 April 2026; • Transect survey: 17 June 2026; • Emergence survey: 18 June 2026; • Transect survey: 20 – 24 July 2026; • Emergence survey: 20 – 24 July 2026; • Tree climbing survey: 20 – 24 July 2026. Further bat surveys are continuing in 2026. Due to ongoing data collection and processing, results from surveys after May 2026 will be reported in the ES at DCO application.	inclusive of habitats within the MHPGC PEIR Red Line Boundary: Onshore , and an additional 50 metre (m) buffer, considered suitable to support bat roosts.	
Reptiles	Initial walkover surveys were undertaken in March 2023 and July 2024. Updated walkover surveys were undertaken between June and August 2025 with artificial refugia placed in suitable habitats and checked once every week between September and October 2025.	Reptile Survey Area, defined as inclusive of habitats within the MHPGC PEIR Red Line Boundary: Onshore considered suitable to support native reptile species	Volume 3, Annex 3.7: Interim Reptile Surveys Technical Report, of the PEIR.
GCN	Initial walkover surveys were undertaken in March 2023 and between July and November 2024. GCN surveys were carried out between 19 and 22 May 2025; and between 20 and 22 April 2026.	Great Crested Newt Survey Area, defined as any suitable waterbodies within and up to 250m surrounding the MHPGC PEIR Red Line Boundary: Onshore.	Volume 3, Annex 3.8: Interim Great-crested Newt Surveys Technical Report, of the PEIR.
Otter	Initial walkover surveys were undertaken in March 2023 and between July and November 2024. Otter surveys undertaken in the week of 08 September 2025. In April 2026, survey coverage gaps from the 2025 surveys were completed apart from Hesledon Moor East SSSI. Further surveys were undertaken in August and September 2026 to complete coverage, including Hesledon Moor East SSSI and shall be reported on in the ES.	Otter Survey Area, defined as inclusive of habitats within and up to 250m surrounding the MHPGC PEIR Red Line Boundary: Onshore, considered suitable to support otter.	Volume 3, Annex 3.9: CONFIDENTIAL Interim Otter Surveys Technical Report, of the PEIR.
Water vole	Initial walkover surveys were undertaken in March 2023 and between July and November 2024. Water vole surveys were undertaken in the week of 08 September 2025. In April 2026, survey coverage gaps from the 2025 surveys were	Water Vole Survey Area, defined as inclusive of habitats within and up to 10m surrounding the MHPGC PEIR Red Line Boundary: Onshore, considered suitable to support water vole.	Volume 3, Annex 3.10: Interim Water Vole Surveys Technical Report, of the PEIR.

Survey Type	Dates	Coverage	Relevant Technical Report (Annex)
	undertaken apart from Hesledon Moor East SSSI. Further surveys were undertaken in September 2026 and shall be reported on in the ES.		
Breeding bird	2025 breeding bird surveys were undertaken on the following dates: • 02 – 04 April 2025; • 29 April – 02 May 2025; • 19 – 22 May 2025; • 11 – 13 June 2025; • 25 – 26 June 2025; • 16 – 18 July 2025. 2026 breeding bird surveys were undertaken between March and July 2026: • 25 – 27 March 2026; • 13 – 15 April 2026; • 06 – 08 May 2026; • 06 – 08 June 2026; • 24 – 26 June 2026; • 07 – 09 July 2026.	Breeding Bird Survey Area comprises the MHPGC PEIR Red Line Boundary: Onshore, with a 100m buffer applied.	Volume 3, Annex 3.11: Interim Breeding Bird Surveys Technical Report, of the PEIR.
Wintering and passage bird	2025/2026 wintering and passage bird surveys were undertaken on the following dates: • 20 – 23 October 2025; • 24 – 26 November 2025; • 16 – 18 December 2025; • 14 – 16 January 2026 • 11 – 13 February 2026; • 12 – 13 March 2026. At the time of writing, the next wintering/passage bird survey season commences in October 2026.	Wintering/passage Bird Survey Area comprises the MHPGC PEIR Red Line Boundary: Onshore, with a 250m buffer applied. Extended to 650m, where appropriate, (the maximum non-breeding distance for curlew).	Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR.
Intertidal bird	2023/2024 intertidal bird surveys were undertaken on the following dates: • 21 April 2023 & 24 April 2023; • 16 May 2023 & 23 May 2023; • 4 July 2023 & 6 July 2023; • 21 August 2023 & 30 August 2023; • 5 September 2023 & 28 September 2023; • 4 October 2023 & 16 October 2023; • 14 November 2023 & 27 November 2023.	Intertidal Bird Survey Area, comprises intertidal habitats present within the MHPGC PEIR Red Line Boundary, including a 1.5km viewshed from the coast (to cover subtidal/marine habitat) and a 500m buffer of habitats on land.	Volume 3, Annex 3.13: Interim Wintering, Passage and Intertidal Bird Surveys Technical Report, of the PEIR.

Survey Type	Dates	Coverage	Relevant Technical Report (Annex)
	5 December 2023 & 12 December 2023; 3 January 2024 & 10 January 2024; 15 February 2024 & 26 February 2024; 11 March 2024 & 14 March 2024. Intertidal bird surveys were undertaken alongside the wintering and passage bird surveys from October 2025 and continued until September 2026.		

Data limitations and assumptions

3.4.5.4 The presence of protected species at any given time is liable to fluctuate depending on range of factors, including climatic and other environmental drivers. As with any ecological study, the protected species surveys provide only a snapshot of the conditions within the Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Area prevailing at the time of survey. As such, all suitable habitats identified as having potential to support protected species are considered at all stages of the assessment via appropriate mitigation (i.e. pre-works surveys, etc.), even if signs of protected species are not found during field surveys.

3.4.5.5 It should be noted that the availability and quality of the information obtained during the desk study is reliant on third party responses and recorders. This varies for regions and different species groups. Furthermore, the comprehensiveness of information often depends on the level of coverage, the expertise and experience of the recorder and the submission of records to the local recorder. This is not considered to be a limitation of the desk study and its ability to inform the baseline of the MHPGC PEIR Red Line Boundary: Onshore, as this was further supplemented by the field surveys undertaken.

3.4.5.6 Due to access restrictions, private gardens, roads and carriageway embankments, railways and railway embankments and areas under construction were excluded from the relevant Survey Areas. Where access was not possible to private land, a review of satellite mapping, together with possible surveys from adjacent land, was utilised. Overgrown areas where access was restricted were not surveyed.

UKHab surveys

3.4.5.7 At time of writing, UKHab field surveys have been completed for approximately 92% of the UKHab Survey Area due to access limitations such as access refusals or on-site access restrictions.

3.4.5.8 The remaining 8% of the UKHab Survey Area were accessed indirectly based on surveys from adjacent parcels, using aerial photography and desk-based analysis of the inaccessible areas. Areas subject to aerial survey were predominantly built-up areas with little ecological value.

3.4.5.9 As it is only a small proportion of the UKHab Survey Area for which UKHab surveys have not been completed at time of writing, the use of aerial photography to fill in these gaps does not affect the validity of the baseline assessment. This is especially true considering that much of the unvisited habitats are either built-up areas (e.g., residential development, garden or hardstanding) or comprises agricultural land and associated habitats. Overall, the coverage and approach are considered appropriate and robust for the purposes of informing the baseline conditions reported within this chapter of the PEIR.

NVC surveys

3.4.5.10 NVC habitat surveys were completed for 8% of the NVC Survey Area in 2025 due to access limitations such as access refusals or on-site access restrictions.

3.4.5.11 Additional NVC surveys were undertaken in July 2026 with the aim to achieve complete coverage, where possible, including to areas where access was not afforded in 2025 as well as additional areas

requested by Natural England. Overall, the coverage and approach, together with the findings of the desk study, are considered appropriate and robust for the purposes of informing the baseline conditions reported within this chapter of the PEIR. The results of the 2026 NVC surveys will be reported in the ES.

RCA surveys

- 3.4.5.12 No significant limitations were noted for the RCA field survey. Surveys were completed for all suitable river/watercourses within the RCA Survey Area. Overall, the coverage and approach are considered appropriate and robust for the purposes of informing the baseline conditions reported within this chapter of the PEIR.

Hedgerow surveys

- 3.4.5.13 Hedgerow field surveys, specifically field surveys to map the locations of hedgerows and to undertake a preliminary assessment of type and condition, were completed for hedgerows within 85.1% of the UKHab Survey Area. The next stage of the hedgerow field surveys, specifically field surveys to confirm hedgerow type and condition, were completed in 2026 and shall be reported on in the MHPGC Project ES.
- 3.4.5.14 Overall, the coverage and approach are considered appropriate and robust for the purposes of informing the baseline conditions reported within this chapter of the PEIR.

Great crested newt surveys

- 3.4.5.15 It should be noted that while 32 waterbodies (20 ponds and 12 ditches) were identified within the Great Crested Newt Survey Area, surveyors were not able to survey 1 of the ditches due to access constraints.
- 3.4.5.16 In addition, the weather since GCN surveys began in 2025 has seen minimal rainfall (including 2026), meaning that conditions were considered to be dry during both the GCN survey seasons. As a result, of the 31 waterbodies (20 ponds and 11 ditches) that were able to be visited, the majority were either dried up or not present at the time of field survey and therefore not suitable for breeding GCN at that time. 12 waterbodies were sampled for eDNA with the remaining 19 waterbodies considered unsuitable for further surveying for breeding GCN, and were not sampled as a result. It should be noted that the ponds revisited in 2026 due to being dry in 2025, remained largely dry indicating they are not suitable for breeding GCN,
- 3.4.5.17 An HSI assessment was included in the proposed survey methodology, as set out in **Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR** but was not undertaken as part of the GCN survey programme. However, an amended approach was undertaken and all ponds and ditches holding standing water were scoped into the eDNA assessment. This approach is precautionary, as a HSI can rule out ponds that may still contain GCN, and resulted in a larger number of ponds being surveyed. Completion of field surveys for all identified ponds and ditches within the Great Crested Newt Survey Area, affords a precautionary approach to determining presence/absence of GCN within these waterbodies. Access restrictions and unseasonably dry conditions have meant some waterbodies have not been sampled for eDNA, further consideration for GCN presence may need to be considered as the project design evolves.

Water vole

- 3.4.5.18 There are habitats for which two field survey visits have not been completed to date. One further survey of these habitats was completed in September 2026 and shall be reported on in the MHPGC Project ES.

3.4.6 Overview of baseline environment

Desk Study

- 3.4.6.1 Information on ecology and ornithology within the study area was collected through a detailed review of existing studies and datasets. An analysis and results of ecological and ornithological record searches, identified from a review of available data, is detailed in the desk study sections of each individual baseline survey annex, **Volume 3, Annexes 3.2 to 3.13 of the PEIR**.

- 3.4.6.2 Desk study data on the distribution of designated sites is summarised in **Table 3-8** and **Table 3-9**. The desk study identified international statutory designated sites (one SAC and two SPA) within the respective Ecology and Ornithology Study Areas (**Figure 3.1**). This includes designated sites located within 200m of any roads modelled for construction traffic presented in **Volume 3, Chapter 5, Traffic and Transport, of the PEIR**.
- 3.4.6.3 Aquatic surveys are ongoing (results to be presented at the ES stage), the assessment of effects on aquatic receptors presented in this chapter are based predominantly on desk-based information. Therefore, detailed aquatic baseline desk study information is presented from **paragraph 3.4.6.34**.

Table 3-8: Ecological designated sites and relevant qualifying interests within the Ecology Study Area

Designated Site	Distance to the MHPGC PEIR Red line Boundary: Onshore	Relevant Qualifying Interest
International statutory designated biodiversity sites		
Durham Coast SAC	Lies partially within the MHPGC PEIR Red line Boundary: Onshore	• Vegetated sea cliffs of Atlantic and Baltic Coasts comprising complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub.
National statutory designated biodiversity sites		
Durham Coast SSSI	Lies partially within the MHPGC PEIR Red Line Boundary: Onshore	• Paramaritime magnesian limestone vegetation; • Species-rich dune system; • Entomologically rich - supports colonies of Northern brown argus butterfly (<i>Aricia artaxerxes salmaci</i>) and the least minor moth (<i>Photedes captiuncula</i>).
Hesledon Moor East SSSI	Lies partially within the MHPGC PEIR Red Line Boundary: Onshore, to the northeast of Jade Business Park	• Unimproved neutral pasture; • Base-rich mire.
Hesledon Moor West SSSI	Lies adjacent to the MHPGC PEIR Red Line Boundary: Onshore, to the southwest of Jade Business Park	• Fen, carr and heathland communities on acidic glacial drift overlying magnesian limestone.
Eppleton Grassland SSSI	Lies 1.8km to the northwest of the MHPGC PEIR Red Line Boundary: Onshore	• Mosaic of semi-natural habitat: – Unimproved neutral and acid grassland; – Fen-meadow and rush-pasture; – Swamps and tall-herb fen; • Scrub and woodland.
Pig Hill SSSI	Lies 1.8 km to the west of the MHPGC PEIR Red Line Boundary: Onshore	• Primary magnesian limestone grassland.
Tufthill Quarry SSSI	Lies 1.8 km to the southwest of the MHPGC PEIR Red Line Boundary: Onshore	• Primary and secondary species-rich calcareous grassland on magnesian limestone.
Hawthorn Dene SSSI	Lies adjacent to the south of the MHPGC PEIR Red Line Boundary: Onshore	• Semi-natural broadleaved woodland on magnesian limestone; • Magnesian limestone grassland; • Tall fen.
Other statutory biodiversity sites		
Noses Point LNR	Lies partially within the MHPGC PEIR Red Line Boundary: Onshore	• Magnesian limestone bedrock has given rise to a rare form of grassland

Designated Site	Distance to the MHPGC PEIR Red line Boundary: Onshore	Relevant Qualifying Interest
		with unique populations of plants and animals.
Easington LNR	Lies 1.6 km to the south of the MHPGC PEIR Red Line Boundary: Onshore	- High nature conservation value; - Durham Biodiversity Action Plan Priority Habitats (woodland, ponds, fens reed bed, brownfield mosaic and lowland meadow).
Non-statutory Sites		
Coop House Wood and Coop House Wood (1) LWS	Lies wholly within the MHPGC PEIR Red Line Boundary: Onshore, to the south of Jade Business Park	Damp woodland.
Hesledon Moor West LWS	Lies adjacent to MHPGC PEIR Red Line Boundary: Onshore, to the southwest of Jade Business Park	- Acid pasture. - Alder and willow car with tall herb and marsh communities.
Hesledon Moor East LWS	Lies partially within the MHPGC PEIR Red Line Boundary: Onshore, to the east of Jade Business Park	Semi-improved grassland with fringing scrub next to stream and marsh vegetation.
Hawthorn Quarry LWS	Lies partially within the MHPGC PEIR Red Line Boundary: Onshore, at its eastern extent	Quarry with plants typical of magnesian limestone.
Cold Hesledon Meadow LWS	Lies adjacent to the north of the MHPGC PEIR Red Line Boundary: Onshore, to the south of Cold Hesledon	- Damp meadow. - Magnesian limestone grassland on limestone cliff.
South Murton Marsh LWS	Lies 200m to the north of the MHPGC PEIR Red Line Boundary: Onshore, to the south of Murton	Marsh with tall herb species and ditches.
Cowtons Pond LWS	Lies 400m to the south of the MHPGC PEIR Red Line Boundary: Onshore	Pond and marsh which retains open water/extensive emergent vegetation.
Hawthorn Bridge Pumping Station LWS	Lies 550m to the south of the MHPGC PEIR Red Line Boundary: Onshore, at its southeastern extent, to the south of Hawthorn	Undisturbed sedge meadow/marsh.
South Hetton Pond LWS	Lies 600m to the southwest of the MHPGC PEIR Red Line Boundary: Onshore, to the south of South Hetton	Pond with extensive areas of bulrush (<i>Typha latifolia</i>).
Cold Hesledon Pond and Walkway LWS	Lies 600m to the north of the MHPGC PEIR Red Line Boundary: Onshore, to the east of Cold Hesledon	Pond with marshy area.
Hazel Dene LWS	Lies 700m to the north of the MHPGC PEIR Red Line Boundary: Onshore	Remnant of a small dene on ancient woodland.
Duncombe Moor LWS	Lies 750m to the southwest of the MHPGC PEIR Red Line Boundary: Onshore, to the south of South Hetton	- Species-rich spring fen containing wetland communities uncommon in the county. - Acid-grassland community
Murton Meadows LWS	Lies 850m to the north of the MHPGC PEIR Red Line Boundary: Onshore, to the east of Murton	Species-rich meadows used for horse grazing.
Dawdon Dene LWS	Lies 900m to the north of the MHPGC PEIR Red Line Boundary: Onshore	Ancient woodland (mixed deciduous).

Designated Site	Distance to the MHPGC PEIR Red line Boundary: Onshore	Relevant Qualifying Interest
Pesspool Lane Ponds LWS	Lies 1.1km to the south of the MHPGC PEIR Red Line Boundary: Onshore, to the southeast of South Hetton	Silty ponds in rough pasture.
Dalton Dene LWS	Lies 1.1km to the north of the MHPGC PEIR Red Line Boundary: Onshore, to the northeast of Murton	- Woodland on an ancient woodland site; - Dene slopes with herb-rich grassland.
Murton Grassland LWS	Lies 1.3km to the northwest of the MHPGC PEIR Red Line Boundary: Onshore	Unmanaged herb-rich neutral grassland with abundant leguminous species.
Murton Bridge Carr LWS	Lies 1.4km to the northwest of the MHPGC PEIR Red Line Boundary: Onshore	Carr and calcareous grassland.
Tuthill Quarry LWS	Lies 1.7km to the north of the MHPGC PEIR Red Line Boundary: Onshore	Magnesian limestone species.
Eppleton Railway LWS	Lies 1.8km to the northwest of the MHPGC PEIR Red Line Boundary: Onshore	Base-rich marshland, stream, heath and scrub woodland habitat which supports a variety of wetland herbs.
Elmore Vale LWS	Lies 1.9km to the west of the MHPGC PEIR Red Line Boundary: Onshore	- Variety of habitats: - Wetlands; - Scrub; - Ungrazed and horse-grazed grasslands.
Elmore Woods (1) and (2) LWS	Lies 1.9km to the southwest of the MHPGC PEIR Red Line Boundary: Onshore	Mixed woodland.

Table 3-9: Ornithological designated sites and relevant qualifying interests within the Ornithology Study Area

Designated Site	Distance to the MHPGC PEIR Red Line Boundary: Onshore	Relevant Qualifying Interest
Statutory Sites		
Durham Coast SSSI	Lies partially within the MHPGC PEIR Red Line Boundary: Onshore	Supports nationally important numbers of wintering shore birds and breeding little terns which contribute to the internationally important populations of the north-east coast. Migratory/wintering species: - Purple sandpiper (<i>Calidris maritima</i>); - Turnstone (<i>Arenaria interpres</i>); - Red knot (<i>Calidris canutus</i>); - Sanderling (<i>Calidris alba</i>). Breeding species: - Kittiwake (<i>Rissa tridactyla</i>); - Fulmar (<i>Fulmarus glacialis</i>); - Cormorant (<i>Phalacrocorax carbo</i>); - Little tern (<i>Sternula albifrons</i>).

Designated Site	Distance to the MHPGC PEIR Red Line Boundary: Onshore	Relevant Qualifying Interest
Northumbria Coast SPA	Lies 1.5km north of the MHPGC PEIR Red Line Boundary: Onshore	Migratory/wintering species: • Turnstone; • Purple sandpiper. Breeding species: • Little tern. • Arctic tern.
Northumbria Coast Ramsar	Lies 1.7km south of the MHPGC PEIR Red Line Boundary: Onshore	Migratory/wintering species: • Turnstone; • Purple sandpiper. Breeding species: • Little tern.
Durham Coast NNR	Lies 4.5 km south of the MHPGC PEIR Red Line Boundary: Onshore	Breeding species: • Little tern.
Teesmouth and Cleveland Coast SPA, SSSI and Ramsar	Lies 9.5km south of the MHPGC PEIR Red Line Boundary: Onshore	Migratory/wintering species: • Red knot; • Common redshank (<i>Tringa totanus</i>); • Teal (<i>Anas crecca</i>). Non-breeding waterbird assemblage: • Gadwall (<i>Mareca strepera</i>); • Northern shoveler (<i>Spatula clypeata</i>); • Sanderling (<i>Calidris alba</i>); • Eurasian wigeon (<i>Mareca penelope</i>); • Northern lapwing (<i>Vanellus vanellus</i>); • Herring gull (<i>Larus argentatus</i>); • Black-headed gull (<i>Chroicocephalus ridibundus</i>); • Shelduck (<i>Tadorna tadorna</i>); • Purple sandpiper; • Ringed plover (<i>Charadrius hiaticula</i>); • Common redshank; Ruff (<i>Calidris pugnax</i>); • Sandwich tern (<i>Thalasseus sandvicensis</i>). Breeding species: • Pied avocet (<i>Recurvirostra avosetta</i>); • Common tern (<i>Sterna hirundo</i>); • Little tern.

Designated Site	Distance to the MHPGC PEIR Red Line Boundary: Onshore	Relevant Qualifying Interest
Non-Statutory Sites		
Elemore Vale LWS	400 m west of the MHPGC PEIR Red Line Boundary: Onshore.	Variety of habitats, comprising wetlands, scrub, ungrazed and horse grazed grasslands. Breeding bird species include whitethroat (<i>Sylvia communis</i>), willow warbler (<i>Phylloscopus trochilus</i>), sedge warbler (<i>Acrocephalus schoenobaenus</i>), linnet (<i>Linaria cannabina</i>) and yellowhammer (<i>Emberiza citrinella</i>), whilst grasshopper warbler (<i>Locustella naevia</i>) has also been recorded and kestrels (<i>Falco tinnunculus</i>) regularly hunt over the area.
Hetton Lyons LWS	900m northwest of the MHPGC PEIR Red Line Boundary: Onshore.	Semi-improved neutral and acidic grasslands. Breeding wetland birds include; little grebe (<i>Tachybaptus ruficollis</i>), coot (<i>Fulica atra</i>), moorhen (<i>Gallinula chloropus</i>), mallard (<i>Anas platyrhynchos</i>) and reed bunting (<i>Emberiza schoeniclus</i>). Acid and neutral grassland are present and dry meadows have breeding populations of skylark (<i>Alauda arvensis</i>) and meadow pipit (<i>Anthus pratensis</i>).

Aquatic Desk Study

3.4.6.4 Aquatic habitat has been outlined in **Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR** and **Volume 3, Annex 3.8: Interim Great-crested Newt Surveys Technical Report, of the PEIR** which concluded that there is a limited extent of aquatic habitat within the MHPGC PEIR Red Line Boundary: Onshore, comprising:

- Five standing water ditches (r1g 50 – Other Standing Water (Ditch)), all of which were dry during the surveys;
- Two small watercourses: South Hetton Burn and a watercourse flowing into Hawthorn Dene, the latter of which was dry during the surveys;
- Eight ponds (r1g – Other Standing Water (Pond)), two of which were dry during the surveys.

Freshwater fish

3.4.6.5 No fish survey data were returned from the Environment Agency Ecology and Fish Data Explorer for the period 2016 to 2026 from watercourses intersected by the MHPGC PEIR Red Line Boundary: Onshore and hydrologically connected watercourses located within 2km upstream and downstream of the boundary. Two records of Atlantic cod (*Gadus morhua*) were returned from the Environmental Records Information Centre North East data search (Natural England, 2026) within 2km of the MHPGC PEIR Red Line Boundary: Onshore. Both records were located offshore in coastal waters of the North Sea, to the east of the MHPGC PEIR Red Line Boundary: Onshore. However, as all aquatic habitats identified within the MHPGC PEIR Red Line Boundary: Onshore are freshwater habitats, and Atlantic cod is a marine species, these records are not considered relevant to the baseline assessment. No other fish records were returned within 2km of the MHPGC PEIR Red Line Boundary: Onshore.

3.4.6.6 Based on aquatic habitats identified within the MHPGC PEIR Red Line Boundary: Onshore and surveys completed to date, aquatic features within the MHPGC PEIR Red Line Boundary: Onshore are likely to provide only limited habitat for freshwater fish. However, as fish and aquatic habitat

survey results were not available at the time of PEIR preparation, the presence of freshwater fish cannot be discounted from permanently wetted aquatic features within the MHPGC PEIR Red Line Boundary: Onshore. On a precautionary basis, freshwater fish are therefore assumed to be present within all ponds that were wet during surveys (six ponds) and South Hetton Burn. As the other watercourse and all ditches were dry at the time of survey, they are not considered suitable for freshwater fish. The baseline understanding of freshwater fish within the MHPGC PEIR Red Line Boundary: Onshore will be refined following completion of fish and aquatic habitat surveys and presented within the ES.

White-clawed crayfish

- 3.4.6.7 White-clawed crayfish (*Austropotamobius pallipes*) was historically widespread across Britain where conditions were suitable. Large populations were known from central Ireland, the Welsh Borderland region and England, except for the extreme southwest (Holdich and Rogers, 1997). White-clawed crayfish are not typically found in areas where invasive crayfish populations have established (e.g., signal crayfish (*Pacifastacus leniusculus*)). Although these species may coexist in some habitats for a short period, populations of white-clawed crayfish eventually decline due to competition, predation, and/or disease. As a result, many populations have since been lost across England, with most remaining populations now concentrated in northern and central England (Anderson *et al.*, 2021).
- 3.4.6.8 White-clawed crayfish typically inhabit clean, relatively hard, mineral-rich waters with a pH between 6.0 and 9.2 (Haddaway *et al.*, 2015). The species can be found in various environments such as lakes, reservoirs, water-filled quarries, rivers and streams where refuge is available in the form of large stones, submerged logs, debris and tree roots. Populations can also thrive in very small streams, provided there is adequate water flow (Rosewarne, Mortimer and Dunn, 2017). Although rarely, the species has been identified from streams, rivers and canals with deep, anoxic mud and little emergent vegetation, however overhanging tree roots, marginal vegetation and in-river debris (twigs, debris, vegetation) is increasingly important in these systems (Holdich *et al.*, 2006).
- 3.4.6.9 White-clawed crayfish have historically been recorded within parts of the wider River Wear catchment; however, no records were identified within 2km of the MHPGC PEIR Red Line Boundary: Onshore (NBN Atlas, 2026; Natural England, 2026). Review of available records indicates that the closest record is from 2012 and is located approximately 8.5km from the MHPGC PEIR Red Line Boundary: Onshore. No hydrological connectivity exists between the watercourse in which the species was recorded and any watercourses within the MHPGC PEIR Red Line Boundary: Onshore. Based on the aquatic habitats currently identified within the MHPGC PEIR Red Line Boundary: Onshore, the presence of white-clawed crayfish is considered unlikely. However, as aquatic surveys, including white-clawed crayfish eDNA surveys, are ongoing and the results were not available at the time of PEIR preparation, white-clawed crayfish has been retained as a receptor on a precautionary basis. Of the aquatic habitats identified within the MHPGC PEIR Red Line Boundary: Onshore, only South Hetton Burn is considered to provide potentially suitable habitat for white-clawed crayfish. This will be kept under review as survey results become available, with findings reported within the ES.

SPI and other conservation-notable aquatic macroinvertebrates

- 3.4.6.10 A total of five freshwater macroinvertebrate surveys from one site (Environment Agency Site 160574, Hawthorn Burn) undertaken during the period 2016 to 2026 were returned from the Environment Agency Ecology and Fish Data Explorer. The most recent survey undertaken by the Environment Agency at this location was in 2018. The survey location is situated approximately 2km from watercourses within the MHPGC PEIR Red Line Boundary: Onshore via hydrological connectivity. No SPI or other conservation-notable freshwater macroinvertebrate species were returned from the survey data. No records of SPI and other conservation-notable aquatic macroinvertebrates were returned from the Environmental Records Information Centre North East data search (Natural England, 2026).
- 3.4.6.11 The aquatic habitats identified within the MHPGC PEIR Red Line Boundary: Onshore, may support a general assemblage of aquatic macroinvertebrates. However, based on the information currently available, it is considered unlikely that watercourses within the MHPGC PEIR Red Line Boundary: Onshore support SPI and other conservation-notable aquatic macroinvertebrates. However, as macroinvertebrate surveys are ongoing and the results were not available at the time of PEIR preparation, SPI and other conservation-notable aquatic macroinvertebrates have been retained as

a receptor on a precautionary basis. On a precautionary basis, SPI and other conservation-notable aquatic macroinvertebrates are assumed to be present within all ponds that were wet during surveys (six ponds) and South Hetton Burn. As the other watercourse and all ditches were dry at the time of survey, they are considered unlikely to support SPI and other conservation-notable aquatic macroinvertebrates. The baseline understanding of SPI and other conservation-notable aquatic macroinvertebrates within the MHPGC PEIR Red Line Boundary: Onshore will be refined following completion of macroinvertebrate and aquatic habitat surveys and presented within the ES.

SPI and other conservation-notable aquatic macrophytes

- 3.4.6.12 No macrophyte survey data were returned from the Environment Agency Ecology and Fish Data Explorer for the period 2016 to 2026 from watercourses intersected by the MHPGC PEIR Red Line Boundary: Onshore and hydrologically connected watercourses located within 2km upstream and downstream of the boundary. No records of macrophytes were returned from the Environmental Records Information Centre North East data search (Natural England, 2026).
- 3.4.6.13 The aquatic habitats identified within the MHPGC PEIR Red Line Boundary: Onshore, may support a general assemblage of macrophytes. However, based on the information currently available, it is considered unlikely that watercourses within the MHPGC PEIR Red Line Boundary: Onshore support SPI and other conservation-notable macrophytes. However, as macrophyte surveys are ongoing and the results were not available at the time of PEIR preparation, SPI and other conservation-notable aquatic macrophytes has been retained as a receptor on a precautionary basis. On a precautionary basis, SPI and other conservation-notable aquatic macrophytes are assumed to be present within all ponds that were wet during surveys (six ponds) and South Hetton Burn. As the other watercourse and all ditches were dry at the time of survey, they are considered unlikely to support SPI and other conservation-notable aquatic macrophytes. The baseline understanding of SPI and other conservation-notable aquatic macrophytes within the MHPGC PEIR Red Line Boundary: Onshore will be refined following completion of macrophyte surveys and presented within the ES.

Field survey information

Habitats Present – UKHab survey

- 3.4.6.14 The desk study confirmed records of a number of protected and notable flora species within the Study Area.
- 3.4.6.15 The desk study identified that the UKHab Survey Area is dominated by agricultural habitats, mainly cereal crops with areas of grazing pasture. There are small patches of broadleaved woodland and scrub, particularly in the western area of the UKHab Survey Area, while the eastern area comprises more grassland habitats around the coastal cliffs and shingle beach at the coast.
- 3.4.6.16 Arable and Horticulture Cropland (c1) - The most common habitat recorded in the UKHab Survey Area was cereal crops (c1c). The crops recorded included wheat and barley with fields presenting as high intensity agriculture with field margins either narrow or absent.
- 3.4.6.17 Fen Marsh and Swamps (F2) - Wetland areas were recorded at six locations, all around Jade Business Park. These areas were typically smaller areas in lower laying habitat where water collects. This included potential man-made wetlands around drainage features. Both reedbeds (f2e – priority habitat) and other wetlands (f2f) were recorded.
- 3.4.6.18 Grassland (G) - Other Neutral Grassland (g3c) was recorded on ten occasions, around Jade Business Park and to its west. Many of the fields within the UKHab Survey Area were classed as modified grassland (g4) as they were improved grazing pasture. Other calcareous grassland (g2c) also recorded on the eastern edge of the Survey Area.
- 3.4.6.19 Heathland and Scrub (H) - Two areas of Gorse scrub (h3e) were recorded within the UKHab Survey Area, with an area to the west of Jade Business Park and an area on Batter Law Hill. Seven areas of mixed scrub (h3h) were recorded within the UKHab Survey Area, mostly around Jade Business Park and its access road from the east. Blackthorn scrub (h3a) was also present in a localised parcel to the south of the Survey Area. Linear features of Native hedgerow (h2a- Priority Habitat) and other native hedgerow (h2a6) including hedgerow with trees (h2a-11 and h2a6-11) recorded.

- 3.4.6.20 Rivers and Streams (r1) – other standing water (r1g) including Priority (40) and non-Priority (41) Ponds present, some of which dry at the time of survey. Moreover, several Standing open water (ditch) (r1g-50) and canals (ditch) (r1- 50) and other rivers and streams (r2b) has been recorded.
- 3.4.6.21 Maritime Cliff and Slopes (s2a – Priority habitat) recorded, mostly unvegetated with some shelves of magnesian limestone species.
- 3.4.6.22 Other Littoral Rock (t1f) – exposed rock at base of sea cliffs.
- 3.4.6.23 Saline Lagoons (t2g5) – Priority habitat (H1150) – saline pools at base of cliffs.
- 3.4.6.24 Beach (t2h) – pebble beach between littoral rock and maritime cliff habitat on the east of the Survey Area.
- 3.4.6.25 Urban (U1) - Urban habitats recorded include buildings (u1b5), developed land – sealed surface (u1c) and other developed land (u1b6). This includes roads, parking areas, areas under construction and gardens. Built linear feature (u1e) also recorded. Furthermore, suburban mosaic of developed and natural surface (u1d) including open mosaic habitats on previously developed land (80 – Priority Habitat) recorded to the west of Jade Business Park.
- 3.4.6.26 Woodland (W) - An area of Other Lowland Mixed Deciduous Woodland (w1f – Priority Habitat) and Lowland Mixed Deciduous Woodland (w1f7 – Priority Habitat) was recorded at the western end of Coop House Wood. Other Broadleaved Woodland (w1g) was recorded as the dominant habitat around Jade Business Park on all sides. Two areas of Other Woodland, Mixed were recorded either side of the Long Run, the access road to the east of Jade Business Park. Areas of Other Woodland, Mixed (w1h), and Mainly Broadleaved (w15h) was recorded to the north of Hawthorn. Other broadleaf woodland (line of trees) (w1g-33) also recorded.
- 3.4.6.27 Invasive species recorded include giant hogweed, Himalayan balsam, and Japanese knotweed.

Receptor-specific field surveys

Table 3-10: Summary of site-specific surveys

Species/ Habitat	Summary of Key Results
UKHab	Results to date are summarised in the section above.
NVC	Four NVC communities were identified within the Survey Area including two areas of MG10 – <i>Holcus lanatus</i> – <i>Juncus effusus</i> rush pasture community, a S12 – <i>Typha latifolia</i> swamp community and a S4 – <i>Phragmites australis</i> swamp and reedbeds community.
Hedgerow	43 hedgerows were identified within the Hedgerow Survey Area, of which the majority were classed as h2a6 – Other native hedgerows.
Watercourses	- Two watercourses within the RCA Survey Area underwent MoRPh field surveys, and were classified as straight sinuous rivers; - South Hetton Burn was classified as being in moderate condition; - Hillfield Burn was classified as being in fairly good condition.
Pond	Survey data are not available for inclusion within the PEIR and will be incorporated into the ES following completion and analysis.
Badger	- The results of the badger surveys are presented in Volume 3, Annex 3.4: CONFIDENTIAL Interim Badger Surveys Technical Report, of the PEIR. - Field signs indicating the potential presence of badger within the Badger Survey Area were recorded.
Bat	37 trees recorded with PRF within the MHPGC PEIR Red Line Boundary: Onshore. - Brown long-eared bat (<i>Plecotus auritus</i>) roosts were confirmed as present via endoscope in two trees in Morton Woods (Tree 7 and 8), outside the Preliminary Roost Assessment (PRA)/Ground Level Tree Assessment (GLTA) Survey Area. - Bat activity results are not available for inclusion within the PEIR and will be incorporated into the ES following completion and analysis.
Reptile	No reptiles were recorded within the Reptile Survey Area.

Species/ Habitat	Summary of Key Results
GCN	No positive environmental DNA (eDNA) results were returned for the waterbodies sampled within the GCN Survey Area.
Otter	- Otter field signs were recorded within the Otter Survey Area; two potential holts (inactive) and six slides. - Field signs of otter including less recent spraints and two inactive couches were identified outside the MHPGC PEIR Red Line Boundary: Onshore.
Water vole	No water vole field signs were recorded during surveys.
Breeding bird	- In 2025, a total of 37 Notable Species were recorded, with evidence of breeding exhibited by 12 species: - Five species on the BoCC5 Red List: house martin, kittiwake, linnet, skylark, yellowhammer; - Seven species on the BoCC5 Amber List: bullfinch, common whitethroat, dunnoek, fulmar meadow pipit, song thrush, wren; - Eight SPI: bullfinch, common whitethroat, dunnoek, house martin, linnet, skylark, song thrush, yellowhammer; - Two species noted as qualifying features for the Durham Coast SSSI: kittiwake and fulmar. - Ten species listed on the as part of the County Durham LBAP: bullfinch, dunnoek, fulmar, house martin, kittiwake, linnet, meadow pipit, skylark, song thrush, whitethroat, yellowhammer; - The species recorded during the breeding bird survey are considered typical of agricultural, woodland, urban and coastal/intertidal habitats and are widespread in the surrounding area. Significant aggregations of fulmar and kittiwake were present along the coast by Blast Beach where they breed on the cliffs. - The data obtained during Breeding Bird Surveys undertaken in 2026 are yet to be fully analysed at the time of writing.
Wintering, passage and intertidal birds	- During the 2025/26 wintering/passage bird survey, thirteen species were recorded within the Wintering Bird Survey Area. No qualifying species associated with the overlapping designated sites were recorded. The assemblage included four BoCC Red List species of high conservation concern (herring gull, common gull, fieldfare (<i>Turdus pilaris</i>) and lapwing) and two BoCC Amber List species of medium conservation concern (black-headed gull and redwing). - During the 2025/26 intertidal bird surveys, a total of fourteen species were recorded within the Intertidal Bird Survey Area. The assemblage included four BoCC Red List species of high conservation concern (herring gull, great black-backed gull, common scoter (<i>Melanitta nigra</i>) and curlew) and nine BoCC Amber List species (oystercatcher, black-headed gull, black-throated diver (<i>Gavia arctica</i>), pink-footed goose, redshank, fulmar, common tern, avocet and guillemot).
Fish (electrofishing)	Survey data are not available for inclusion within the PEIR and will be incorporated into the ES following completion and analysis.
White-clawed crayfish (eDNA)	Survey data are not available for inclusion within the PEIR and will be incorporated into the ES following completion and analysis.
Freshwater macroinvertebrates	Survey data are not available for inclusion within the PEIR and will be incorporated into the ES following completion and analysis.
Macrophytes	Survey data are not available for inclusion within the PEIR and will be incorporated into the ES following completion and analysis.

3.4.7 Future baseline conditions

- 3.4.7.1 During the anticipated 35-year operational lifetime of the MHPGC Project, the terrestrial ecology and terrestrial and intertidal ornithology baseline can be expected to evolve both on a natural basis and in response to global trends such as climate change and other anthropogenic activities. The Infrastructure Planning (EIA) Regulations 2017 and the Marine Works (EIA) Regulations 2007 require that "an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the

availability of environmental information and scientific knowledge" is included. Therefore, an assessment of future baseline conditions, in the absence of the MHPGC Project, has been undertaken and is described within this section.

- 3.4.7.2 Over time, it would be anticipated that intensive farming would continue within the Study and Survey Areas. The coastal habitats would remain but may be impacted by rising sea levels and cliff erosion as a consequence of rising sea water levels linked with climate change. The small copses, woodland, scrub, ponds, watercourses and field boundaries are likely to remain. It was noted that many of the trees recorded within the Site were ash trees. A significant proportion had signs of ash die back which may eventually result in a significant loss of trees within the Site.
- 3.4.7.3 The UK Climate Projections 2018 (UKCP18, 2019) have stated that by 2070, in a high emissions scenario, the UK average temperature is expected to rise between 0.9 °C-5.4 °C in the summer and 0.7 °C - 4.2 °C in winter.
- 3.4.7.4 The relationship between climate change and biodiversity in the UK has been considered by the Inter-Agency Climate Change Forum (IAACCF, 2010). They have found that the impact on species of increased temperatures can include changes in distribution and abundances, timing of seasonal events and the timing of when habitats are used. As a result, the overall species composition, habitats and ecosystem characteristics may evolve in response to changes in climatic conditions. There is potential risk in particular to coastal habitats and watercourses because of climate change (e.g., shallow ponds and ditches are likely to dry out more in summer months).
- 3.4.7.5 Since 1970 there has been a 13% decline in UK biodiversity (House of Commons Environmental Audit Committee Biodiversity in the UK, 2021). It would also be expected that, without further significant intervention, biodiversity in the UK could continue to decline. Policy initiatives to prevent this, including Biodiversity 2020 (DEFRA, 2011) and emerging policy on BNG aims to reduce the speed of or halt this decline.

3.5 Impact assessment methodology

3.5.1 Overview

- 3.5.1.1 **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** sets out the overarching approach that has been used in developing the preliminary environmental information and associated impact assessment. However, whilst this has informed the approach that has been used for the preliminary terrestrial ecology and terrestrial and intertidal ornithology assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this assessment.
- 3.5.1.2 The assessment methodology within this chapter is also aligned with the standard industry good practice guidance provided by CIEEM (CIEEM, 2024). The assessment is based upon the results of the desk study, field surveys, and relevant published information (for example on the status, distribution, sensitivity to impacts and ecology of the receptors scoped into the assessment, where this information is available), technical engagement with stakeholders and professional knowledge of ecological processes and functions.
- 3.5.1.3 For each scoped-in ecological receptor (see **Table 3-17**), effects are assessed against the baseline conditions for that receptor during the construction, operational and decommissioning phases. Throughout the assessment process, findings about potentially significant effects have taken into account embedded mitigation to avoid or reduce adverse effects or to deliver enhancements.

3.5.2 Receptor sensitivity/value

- 3.5.2.1 The starting point for defining the scope of the biodiversity assessment was to use the baseline data that was collected through the desk study and field surveys undertaken to date (see **Section 3.4**) to determine which of the identified ecological receptors are 'important'. Following CIEEM guidance (CIEEM, 2024), the importance of each ecological receptor was determined using a geographic scale¹ (see **Table 3-11: Defining importance of ecological receptors**). The importance of the ecological receptors has been described in relation to UK legislation and policy and regarding the extent of habitat size or population that may be significantly affected by the MHPGC Project.
- 3.5.2.2 The importance of ecological receptors can therefore differ from that which would be conferred solely by legislative protection or identification as a conservation notable species. For example, house sparrow is important at a national level (in policy terms) because it is an SPI and features on the Birds of Conservation Concern Red List. However, a small population that could be affected by a development might be assessed as only being of local importance due to the large, albeit declining, UK population (in excess of five million pairs). Similarly, a small length of hedgerow (an HPI), even if deemed to be "important"² with regard to The Hedgerows Regulations (UK Government, 1997), is unlikely to be considered to have greater than 'local' importance due to the extent of this type of habitat across a given county.
- 3.5.2.3 Wherever possible, information regarding the extent and population size, population trends and distribution of the ecological receptors was used to inform their categorisation and determine their importance at the project level. Where detailed criteria or contextual data was not available at this stage of the MHPGC Project, professional judgement was used to determine importance.

¹ Where this was not possible due to the level of baseline information available, the highest relevant level of importance is assumed to ensure no ecological features are scoped out of assessment where not appropriate.

² This refers to the legal definition of "important" within The Hedgerows Regulations 1997 – this is different from how the same term is used within the CIEEM guidelines.

Table 3-11: Defining importance of ecological receptors

Geographic context of Importance		Description	Sensitivity or Receptor
International or European		National site network constituents including SPAs, SACs, candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), possible SACs (pSACs), Ramsar Sites (designated under international convention) and proposed Ramsar Sites are also considered in the same manner. Areas of habitat or populations of species which meet the published selection criteria based on discussions with Natural England and field data collected to inform the EclA for designation as a European site, but which are not themselves currently designated at this level.	Very High
National (UK context)		A nationally designated site including SSSIs and NNRs. Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs, but which are not themselves designated based on field data collected to inform the impact assessment, and in consultation with Natural England. SPIs and HPIs, Red Listed and legally protected species that are not addressed directly in Part 2 of the "Guidelines for Selection of Biological SSSIs"³ but can be determined to be of national importance using the principles described in Part 1 of the guidance. Areas of ancient woodland, for example woodland listed within the Ancient Woodland Inventory and ancient/veteran trees.	High
Regional (Northeast of England)		Regularly occurring HPI or populations of SPI, Red Listed and legally protected species may be of regional importance in the context of published information on population size and distribution.	Medium
County (County Durham)		LNRs and non-statutory designated sites including LWSs. Areas which, based on field data collected to inform the impact assessment, meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans) but which are not themselves designated.	Medium
Local		HPI and SPI, Red Listed and legally protected species that based on their extent, population size, quality and so on are determined to be at a lesser level of importance than the geographic contexts above. Common and widespread semi-natural habitats occurring within the MHPGC Project Study Area in proportions greater than may be expected in the local context. Common and widespread native species occurring within the MHPGC Project Study Area in numbers greater than may be expected in the local context.	Low
Negligible		Common and widespread semi-natural habitats and species that do not occur in levels elevated above those of the surrounding area. Areas of heavily modified or managed land uses (for example, hard standing used for car parking, as roads and so on).	Negligible

3.5.2.4 Where protected species are present and there is the potential for a breach of legislation due to the MHPGC Project, those species are considered to be 'important' receptors regardless of extent of occurrence. With the exception of such species receiving specific legal protection, or those subject to legal control (for example, invasive species), all ecological receptors determined to be important

³ Guidelines for Selection of Biological SSSIs available from JNCC <https://jncc.gov.uk/our-work/guidelines-for-selection-of-sssis/> (Accessed on 30 July 2026)

at negligible level are scoped out of the assessment. This approach is consistent with that described in CIEEM guidelines (CIEEM, 2024).

- 3.5.2.5 Legally protected species and ecological receptors that are of sufficient importance that effects upon them arising from the MHPGC Project could be significant, were then taken through to the next stage of the scoping assessment (see **Section 3.6.1**). Through an understanding of the activities associated with the MHPGC Project and the resulting impacts, it is possible to identify ecological receptors that may be subject to likely significant effects (see **Section 3.9.2**). To identify such ecological receptors, all the activities and consequent impacts associated with the construction, operation and decommissioning stages of the MHPGC Project have been considered. Given the ongoing design process, at this stage of the MHPGC Project, the impacts have been considered in broad categories only. Wherever there is uncertainty as to the potential level of effect or the occurrence of a particular ecological receptor, a precautionary approach has been taken.

3.5.3 Magnitude of impact

- 3.5.3.1 The magnitude of an impact that could affect Terrestrial Ecology and Terrestrial and Intertidal Ornithology is influenced by several key factors, including the scale of the change, the spatial extent the impact is likely to occur and the duration and frequency of the impact. When defining the magnitude of the impact, criteria detailed in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment** has been followed.
- 3.5.3.2 CIEEM (CIEEM, 2024) defines a significant effect as one *“that either supports or undermines biodiversity conservation objectives for ‘important ecological receptors’ or for biodiversity in general”*.
- 3.5.3.3 When considering potentially significant effects on ecological receptors, whether these can be negative or positive, the following characteristics of impacts are considered:
- Extent – the spatial or geographical area over which the impact may occur;
 - Magnitude – the size, amount, intensity or volume of the impact;
 - Duration – the length of time over which the impact may occur;
 - Frequency – the number of times the impact may occur;
 - Timing – the periods of the day/year etc., during which an impact may occur;
 - Reversibility – whether the impact can be reversed through restorative actions.
- 3.5.3.4 Although the characteristics described above are all important in assessing effects by using information about the way in which habitats and species are likely to be affected, a scale for the magnitude of the impact, as a result of the MHPGC Project, has been described in **Table 3-12** Error! Reference source not found. to provide an understanding of the relative change from the baseline position, be that negative or positive changes.

Table 3-12: Definition of terms relating to the magnitude of an impact

Magnitude of impact		Description	Criteria and resultant effect
High	Adverse	• Loss of a resource and quality and integrity of resource; • Severe damage to key characteristics, features or elements.	The change permanently (or over the long-term) affects the conservation status of a habitat/species, reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a large area of habitat or large proportion of the wider species population is affected. For designated sites, integrity is compromised. There may be a change in the level of importance of the ecological receptor in the context of the project.
	Beneficial	• Large-scale or major improvement of resource quality; • Extensive restoration or enhancement; • Major improvement of attribute quality.	

Magnitude of impact		Description	Criteria and resultant effect
Medium	Adverse	- Loss of resource but not adversely affecting the integrity; - Partial loss of/damage to key characteristics, features or elements.	The change permanently (or over the long term) affects the conservation status of a habitat/species reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a small-medium area of habitat or small-medium proportion of the wider species population is affected. There may be a change in the level of importance of this ecological receptor in the context of the project.
	Beneficial	- Benefit to, or addition of, key characteristics, features or elements; - Improvement of attribute quality.	
Low	Adverse	- Some measurable change in attributes, quality or vulnerability; - Minor loss of, or alterations to, one (or more) key characteristics, features or elements.	The quality or extent of designated sites or habitats or the sizes of species' populations, experience some small-scale reduction or increase. These changes are likely to be within the range of natural variability and they are not expected to result in any permanent change in the conservation status of the species/habitat or integrity of the designated site. The change is unlikely to modify the evaluation of the ecological receptor in terms of its importance.
	Beneficial	- Minor benefit to, or addition of, one (or more) key characteristics, features or elements; - Some beneficial impacts on an attribute or a reduced risk of negative impact occurring.	
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.	Although there may be some effects on individuals or parts of a habitat area or designated site, the quality or extent of sites and habitats, or the size of species populations, means that they would experience little or no change. Any changes are also likely to be within the range of natural variability and there would be no short-term or long-term change to conservation status of habitats/species ecological receptors or the integrity of designated sites.
	Beneficial	Very minor benefit to, or positive addition of one or more characteristics, features or elements.	
No change		- No loss or alteration of characteristics, features or elements; - No observable impact in either direction.	A change, the level of which is so low, that it is not discernible on designated sites or habitats or the size of species' populations, or changes that balance each other out over the lifespan of a project and result in a neutral position.

3.5.4 Significance of effect

- 3.5.4.1 The significance of the effect upon Terrestrial Ecology and Terrestrial and Intertidal Ornithology is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is presented in Error! Reference source not found..
- 3.5.4.2 Following the classification of an effect using this methodology, a clear statement will then be made as to whether that effect is significant or not significant. Major and moderate effects are considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement will also be applied in reaching conclusions as to the significance of effects. Typical definitions for the classification of effects are shown in Table 3-13.

Table 3-13: Significance of potential effects in line with Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR impacts

Sensitivity of receptor	Magnitude of impact			
	Negligible	Low	Medium	High
Negligible	Negligible	Negligible or minor	Negligible or minor	Minor
Low	Negligible or minor	Negligible or minor	Minor	Minor or moderate
Medium	Negligible or minor	Minor	Moderate	Moderate or major
High	Minor	Minor or moderate	Moderate or major	Major
Very high	Minor	Moderate or major	Major	Major

Table 3-14: Significance Definitions

Significance classification	Definition	Significant effect
Major	A large and detrimental change to a valuable/sensitive receptor, likely exceeding an accepted threshold. A large and beneficial change, resulting in enhancements in baseline conditions, transitioning from previously poor conditions to new legal compliance, or making a major contribution to national goals These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional scale. Major effects may relate to features that are unique and irreplaceable.	Significant
Moderate	A medium scale change that, although not beyond an accepted threshold, is still considered to be generally unacceptable, unless offset by significant positive benefits of the project. If adverse, these effects are likely to be important at a regional or local scale and on their own could influence on decision making. A positive moderate effect is a medium scale change that is improves baseline conditions sufficiently to contribute to guideline targets.	Significant
Minor	A minor adverse change that remains within legal and planning policy limits. minor positive change that is unlikely to significantly impact the overall balance of considerations. These effects might be raised as local issues and could be relevant to the detailed design of a project, but they are unlikely to be critical in the decision-making process.	Not significant
Negligible	A very small change that is so inconsequential it can be considered acceptable to disregard. These effects fall below perceptible limits, lie within normal variations, or fall within the margin of forecasting error. They are unlikely to influence decision-making.	Not significant

3.5.5 Negative effects

- 3.5.5.1 A negative effect is assessed as being significant if the conservation status of a biodiversity receptor would be compromised or lost as a result of the MHPGC Project. Conservation status is defined by CIEEM (CIEEM, 2024) as being:

- for habitats – “the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area”; and
- for species – “the sum of the influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.”

3.5.5.2 The decision as to whether the conservation status of a receptor has been compromised will be made using professional judgement, drawing upon the results of the assessment of how each receptor is likely to be affected by the MHPGC Project.

3.5.5.3 A similar procedure will be used for designated sites that may be affected by the MHPGC Project, except that the focus will be on the effects on the integrity of each site, and will need to consider the following as defined by CIEEM (CIEEM, 2024):

- “is the project and associated activities likely to undermine the conservation objectives of the site ... or negatively affect the conservation status of species or habitats for which the site is designated, or may it have ... negative effects on the condition of the site or its interest/qualifying features.”
- The assessment of effects on integrity will therefore draw upon the assessment of effects on the conservation status of the features for which the site has been designated.

3.5.6 Positive effects

3.5.6.1 A development may result in positive effects where there is a resulting change from baseline that improves the quality of the environment (for example increases species diversity, increases the extent of a particular habitat and so on), or halts or slows down an existing decline. For a positive effect to be considered significant, the level of importance of an ecological receptor determined at the baseline state would need to increase by one or more geographical levels (for example where an ecological receptor of Local importance becomes of County importance following delivery of the MHPGC Project).

3.5.7 Biodiversity Net Gain

3.5.7.1 An initial BNG assessment has been undertaken to accompany the PEIR and support the ongoing design development of the MHPGC Project. The assessment provides a strategic, high-level appraisal of BNG feasibility based on the current project design and should be regarded as a precautionary worst-case assessment. It is recognised that the design of the MHPGC Project will continue to evolve and that the assessment will be refined as further design development is undertaken. Details on the methodology, assumptions, and findings of the initial assessment can be found in the in **Volume 3, Annex 3.14: Initial Terrestrial and Intertidal Biodiversity Net Gain Assessment, of the PEIR.**

3.6 Key parameters for assessment

3.6.1 Scope of the assessment

Approach

- 3.6.1.1 The scope of the assessment was presented in the MHPGC Project Scoping Report and has been refined as the project design has evolved and responds to consultations with relevant statutory and non-statutory consultees as detailed in **Section 3.3**. This section provides an update to the scope of the assessment at this stage and re-iterates the evidence base for scoping out elements following further iterative assessment.

3.6.2 Potential impacts

- 3.6.2.1 The construction, operation and maintenance, and decommissioning phases of the MHPGC Project may result in the following potential impacts that could significantly affect ecological receptors:

- **Permanent or temporary land take/land use change** (resulting in habitat loss or degradation and/or loss of fauna);
- **Fragmentation of habitats** (resulting in a reduction in connectivity);
- **Increased noise, vibration, light and movement levels** (resulting in disturbance/displacement/loss of fauna);
- **Changes in hydrology** (resulting in habitat loss, degradation and/or loss of fauna);
- **Changes in air quality** (e.g. dust or vehicle emissions resulting in habitat degradation);
- **Pollution events** (including the liberation of sediments and chemicals resulting in habitat loss or degradation and/or loss of fauna);
- **Introduction of INNS** (resulting in habitat degradation).

- 3.6.2.2 Key to establishing a likely significant effect is the determination of Zone of Influence (Zol) of the MHPGC Project (the area within which a significant effect on an ecological receptor may occur as a result of the MHPGC Project). Zols differ depending on the type of impact and the ecological receptor being considered. Zols for individual impacts are defined in the following sections (i.e. the distance at which each impact could occur). The Zol for individual impacts differs from the overall Study Area which is defined as the overall maximum spatial extent across which potential impacts of MHPGC Project may be experienced by the relevant receptors.

- 3.6.2.3 The most straightforward Zol to define is the area affected by land-take and direct land-use changes associated with the MHPGC Project. This Zol is the same for all affected ecological receptors.

- 3.6.2.4 By contrast, for each impact that can extend beyond the area affected by land-take and land-use change (for example noise created by construction), the Zol may vary between ecological receptors, dependent on their sensitivity to the change and the precise nature of the change. For example, a water vole might only be disturbed by noise generated close to its burrow, whilst nesting lapwing might be disturbed by noise generated at a much greater distance; other species (for example many invertebrates) may be unaffected by changes in noise. In view of these complexities, the definition of the Zol that extends beyond the land-take area was based upon professional judgement informed, as far as possible, by a review of published evidence (for example disturbance criteria for various species) and consideration of the baseline data collected.

- 3.6.2.5 The Zols for each broad impact are specified below:

- **Permanent or temporary land take/land use change** – Zol within the MHPGC PEIR Red Line Boundary: Onshore for habitats and sedentary species; mobile species may be affected beyond that if land within the MHPGC PEIR Red Line Boundary: Onshore overlaps their typical home-ranges;
- **Fragmentation of habitats** – Zol within the MHPGC PEIR Red Line Boundary: Onshore for habitats and sedentary species; mobile species may be affected beyond that if land within the MHPGC PEIR Red Line Boundary: Onshore overlaps their typical home-ranges;
- **Increased noise, vibration, light and movement levels** – Zol for sensitive species is up to 500m from the construction works, noting that for mobile receptors of designated sites this is

related to the species' habitat use and associated foraging home range distance, as opposed to designation boundary;

- **Changes in hydrology** – Zol for sensitive ecological receptors is up to 1km from the MHPGC PEIR Red Line Boundary: Onshore as described within **Volume 3, Chapter 4: Water Resources and Flood Risk of the PEIR**;
- **Changes in air quality** – Zol for sensitive habitats is up to 250m (up to 250m for dust and 200m from the affected road network for traffic emissions) from the construction works and traffic routes;
- **Pollution events** – Zol for habitats and species is up to 500m from the MHPGC PEIR Red Line Boundary: Onshore or further if the source and the ecological receptor are directly linked (e.g. via a watercourse);
- **Introduction of INNS** – Zol for habitats and species is up to 500m from the MHPGC PEIR Red Line Boundary: Onshore, or further if the source and the ecological receptor are directly linked (e.g. via a watercourse).

3.6.2.6 Following consideration of the potential impacts and associated Zols, impacts which are scoped into the assessment (potential to result in a significant effect) and out of the assessment (no potential for a significant effect) are presented in **Table 3-15** and **Table 3-16** respectively.

Table 3-15: Impacts scoped into the assessment

Impact	Justification for scoping into the assessment
Construction phase	
Permanent or temporary land take/land use change	Permanent or temporary loss or change in habitats within the footprint of construction activities or permanent above-ground infrastructure of the MHPGC Project (see Section 3.6.4).
Fragmentation of habitats	Permanent or temporary fragmentation of habitats due to loss or change in habitats within the footprint of construction activities or permanent above-ground infrastructure of the MHPGC Project (see Section 3.6.4).
Increased noise, vibration, light and movement levels	Potential for disturbance of sensitive fauna within and around construction areas due to increased levels of noise, vibration, light and movement levels from construction activities, vehicle movements and site personnel (see Section 3.6.4).
Changes in hydrology	Potential for effects on ecological receptors due to hydrological changes to surface water and groundwater. Volume 3, Chapter 1: Geology, Hydrogeology and Groundwater Conditions of the PEIR considers potential changes to groundwater associated with the MHPGC Project and Volume 3, Chapter 2: Water Resources and Flood Risk, of the PEIR considers potential changes to ground water and surface water.
Changes in air quality; dust	Potential for effects on ecological receptors due to dust deposition resulting from construction activities (see Section 3.8 and Volume 3, Chapter 7: Onshore Air Quality, of the PEIR).
Changes in air quality – traffic related emissions	Potential for effects on ecological receptors due traffic related emissions on the affected road network due to vehicle movements during construction activities (see Section 3.8 and Volume 3, Chapter 7: Onshore Air Quality, of the PEIR).
Pollution events	The risk of pollution from construction activities associated with the MHPGC Project (see Section 3.8 and Volume 3, Chapter 2: Water Resources and Flood Risk, of the PEIR).

Impact	Justification for scoping into the assessment
Introduction of INNS	The risk of spreading INNS across and beyond the MHPGC PEIR Red Line Boundary: Onshore from increased movement of traffic and construction, operational, or decommissioning activities associated with the MHPGC Project.
O&M phase	
All impacts as per the Construction phase	It is considered that all impacts relating to construction have the potential to occur during the decommissioning phase albeit at a greatly reduced level due to the limited nature and extent of operational and maintenance activities compared to construction activities, and impacts such as land take and fragmentation are only likely to occur in the event of unplanned intrusive activities (e.g. emergency repairs).
Decommissioning phase	
All impacts as per the Construction phase	It is considered that all impacts relating to construction have the potential to occur during the decommissioning phase.

Table 3-16: Impacts scoped out of the assessment

Impact	Potential effects scoped into the assessment
Construction phase	
None	N/a
O&M phase	
None	N/a
Decommissioning phase	
Temporary and permanent impacts, both direct and indirect, to habitats and species and designated sites as a result of decommissioning activities along the cable corridors, including at the landfall.	The cable would be left in situ once decommissioned and therefore any habitats and species and designated sites above or in close proximity to the underground cable would remain undisturbed.

3.6.3 Potential receptors

3.6.3.1 The ecological receptors which could potentially be affected by the MHPGC Project are summarised in **Table 3-17: Ecological receptors**.

Table 3-17: Ecological receptors scoped into the assessment

Receptor	Reason for consideration/Importance/Sensitivity
International statutory designated sites, and the qualifying features for which they are designated, including Durham Coast SAC; Northumbria Coast SPA and Ramsar; and Teesmouth and Cleveland Coast SPA and Ramsar	These sites and their qualifying features, occurring within 2km of the MHPGC PEIR Red Line Boundary: Onshore, extended to 10km for bat interest features and 10km for ornithological interest features, are of International importance; Very high sensitivity .
National statutory designated biodiversity sites with ornithological interest features including Durham Coast SSSI; and Durham Coast NNR	These sites, occurring within 10km of the MHPGC PEIR Red Line Boundary: Onshore, are of National importance; High sensitivity .

Receptor	Reason for consideration/Importance/Sensitivity
National statutory designated biodiversity sites with terrestrial ecology interest features including Hesledon Moor East SSSI; Hesledon Moor West SSSI; Hawthorn Dene SSSI; Eppleton Grassland SSSI; Pig Hill SSSI and Tufthill Quarry SSSI	These sites, occurring within 2km from the MHPGC PEIR Red Line Boundary: Onshore, are of national nature conservation importance; High sensitivity .
Other statutory designated biodiversity sites including Noses Point LNR; Easington LNR.	These sites, occurring within 2km from the MHPGC PEIR Red Line Boundary: Onshore, are of County importance; Medium sensitivity .
Non-statutory designated biodiversity sites including Hawthorn Quarry LWS; Cold Hesledon Meadow LWS; Coop House Wood and Coop House Wood (1) LWS; Hesledon Moor West LWS; Hesledon Moor East LWS; South Murton Marsh LWS; Cowtons Pond LWS; Hawthorn Bridge Pumping Station LWS; South Hetton Pond LWS; Cold Hesledon Pond and Walkway LWS; Hazel Dene LWS; Duncombe Moor LWS; Murton Meadows LWS; Dawdon Dene LWS; Pesspool Lane Ponds LWS; Dalton Dene LWS; Murton Grassland LWS; Murton Bridge Carr LWS; Tuthill Quarry LWS; Eppleton Railway LWS; Elemore Vale LWS; and Elemore Woods (1) and (2) LWS	These sites, occurring within 2km of the Order Limit, are of County importance; Medium sensitivity .
Conservation notable habitats including HPI: Ancient woodland/ancient replanted woodland and veteran trees; f2e - Reedbeds; u1d80 – Suburban mosaic of developed and natural surface (Open mosaic habitats on previously developed land); r1g 40 – Other standing water (Ponds; priority); w1f – Lowland mixed deciduous woodland; w1f7 – Other lowland mixed deciduous woodland; h2a – Native hedgerow, h2a 11 – Native hedgerow (Hedgerow with trees), h2a6 – Other native hedgerow, and h2a6 11 – Other native hedgerow (Hedgerow with trees); and watercourse: r1 50 – Standing open water and canals (Ditch), r1g 50 – Other standing water (Ditch), r2b – Other rivers and streams	These habitats, occurring within the MHPGC PEIR Red Line Boundary: Onshore, are of National to County importance; High to Medium sensitivity .
Priority and non-priority coastal habitats: s2a – Maritime cliff and slopes; t2g5 – Saline lagoons (H1150); t1f – Other littoral rock; and t2h – Beach	These habitats, occurring within the MHPGC PEIR Red Line Boundary: Onshore, are of County importance; Medium sensitivity .
Other non-priority habitats with biodiversity benefit: g2c – Other calcareous grassland; g3c – Other neutral grassland; f2 – Fen, marsh and swamp; f2f – Other wetlands; r1g 41 – Other standing water (Ponds; non-priority); w1h – Other woodland, mixed; w1h5 – Other woodland, mixed, mainly broadleaved; w1g – Other broadleaved woodland; and w1g 33 – Other broadleaved woodland (Line of trees)	These habitats, occurring within the MHPGC PEIR Red Line Boundary: Onshore, are of County to Local importance; Medium to Low sensitivity .
Protected terrestrial and riparian vertebrate species including badger; bats; great crested newt; otter; water vole; reptiles; breeding birds; and wintering and passage birds	These legally protected species, occurring within the MHPGC PEIR Red Line Boundary: Onshore, are of National to Local importance; High to Low sensitivity .
Freshwater fish	Freshwater fish, if present within the MHPGC PEIR Red Line Boundary: Onshore, would be of National to Local importance; High to Low sensitivity .

Receptor	Reason for consideration/Importance/Sensitivity
White clawed crayfish	A legally protected species that would be of National importance; High sensitivity if present within the MHPGC PEIR Red Line Boundary: Onshore. Whilst currently considered unlikely to occur, the species has been retained on a precautionary basis pending completion of baseline aquatic surveys. This will be reviewed and reported within the ES.
SPI (brown hare, common toad, hedgehog) and other conservation-notable terrestrial vertebrate species	Species, occurring within the MHPGC PEIR Red Line Boundary: Onshore, are of Local importance; Low sensitivity .
SPI and other conservation-notable terrestrial invertebrate species	Species, occurring within the MHPGC PEIR Red Line Boundary: Onshore, are of Local importance; Low sensitivity .
SPI and other conservation-notable aquatic macroinvertebrates	SPI and other conservation-notable aquatic macroinvertebrate species, if present would be of Regional to Local importance (Medium to Low sensitivity) within the MHPGC PEIR Red Line Boundary: Onshore. Whilst currently considered unlikely to occur, this receptor has been retained on a precautionary basis pending completion of baseline aquatic surveys. This will be reviewed and reported within the ES.
SPI and other conservation-notable aquatic macrophytes	SPI and other conservation-notable aquatic macrophyte species, if present would be of Regional to Local importance (Medium to Low sensitivity) if present within the MHPGC PEIR Red Line Boundary: Onshore. Whilst currently considered unlikely to occur, this receptor has been retained on a precautionary basis pending completion of baseline aquatic surveys. This will be reviewed and reported within the ES.
SPI and other protected/conservation-notable terrestrial plant species	Species, occurring within the MHPGC PEIR Red Line Boundary: Onshore, are of Local importance; Low sensitivity .

3.6.3.2 The following ecological receptors are scoped out of the assessment because they are of insufficient importance/sensitivity for a significant effect to occur due to the MHPGC Project:

- Non-priority habitats with low or negligible biodiversity interest: c1c – Cereal crops; g4 – Modified grassland; h3a – Blackthorn scrub; h3e – Gorse scrub; h3h – Mixed scrub; u1b5 – Buildings; u1b6 – Other developed land; u1c – Artificial unvegetated, unsealed surface; u1d – Suburban mosaic of developed and natural surface; and u1e – Built linear features. **Negligible importance; Negligible sensitivity.**

3.6.4 Habitats Regulations Assessment

3.6.4.1 In line with the Planning Inspectorate's Guidance (Planning Inspectorate, 2012), the relevant Secretary of State is the competent authority for the purposes of the Habitats Regulations in relation to applications for NSIPs. The Habitats Regulations require competent authorities, before granting consent for a plan or project, to carry out an Appropriate Assessment (AA) in circumstances where the plan or project is likely to have a significant effect on a European site (either alone or in combination with other plans or projects).

3.6.4.2 An HRA Screening Report (Doc Ref MVCNS-J4028-RPS-10003_B03) was undertaken at the PEIR stage in accordance with the Planning Inspectorate's Guidance (Planning Inspectorate, 2012). It was concluded that there is potential for LSEs on European sites as a result of the MHPGC Project. Further assessment of LSEs and embedded mitigation is details in the **Habitats Regulations Appraisal/Habitats Regulations Assessment RIAA, prepared to accompany the PEIR.**

3.7 Maximum design scenario

3.7.1.1 The maximum design scenario (MDS) for each impact and associated potential effect identified in **Section Error! Reference source not found.** has been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The MDS presented in **Table 3** have been selected from the parameters provided in **Volume 1, Chapter 2: Project Description, of the**

PEIR and methodology outlined in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR.**

Table 3-18: MDS relevant for the assessment of potential impacts on terrestrial ecology and terrestrial and intertidal ornithology

Impact	Maximum Design Scenario	Explanation
Construction		
<i>Landfall</i>		
Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna), affecting designated sites, habitats and species	Landfall (trenchless drill) Landfall trenchless drill installation method: HDD; Maximum burial depth of trenchless drill (per bore): 80m bgl; Maximum trenchless drill length: 2km; Duration of trenchless drilling activity: 300 days; Construction period for Landfall: 3.5 years; Number of trenchless drill entry points: 4 bores; Working hours are 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 Saturday, with shoulder mobilisation hours and continuous working required for trenchless techniques;	<u>Trenchless drill length</u> The maximum total trajectory distance for the landfall trenchless drill is 2km (from entry pit to exit pit), within the parameters defined for the maximum length of trenchless drill above MHWS (800m), between MHWS – MLWS (60m) and seaward of MLWS (1,660m). The HDD is assumed to be the worst case due to the likelihood of noise and risk of bentonite breakout.
Fragmentation of habitats (resulting in a reduction in connectivity), affecting designated sites, habitats and species	Infrastructure subtidal (seaward of MLWS) Minimum distance from MHWS to exit pit (and associated vessels): 390m; <u>Landfall vessel activity</u> A maximum number of 1 Jack-Up Barge stationed for the duration of trenchless drilling activity (300 days), supported by 4 tugs, 1 construction support vessel, 1 supply vessel and 1 dive support vessel; Anchored cable lay barge: number, 1; 180x40m; There will be up to 250 return trips by installation and support vessels (including Cable Lay Vessel, Installation Support Vessel, Guard Vessel, dredging vessels,	<u>Excavated material volumes:</u> Bore trajectory excavation material (full bore lengths) Launch / Entry Pit excavation TJB excavation Compound foundation Access road excavation <u>TJB</u> Whilst the maximum number of TJBs is 2, the MDS for 'working area for TJB

Impact	Maximum Design Scenario	Explanation
Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement), affecting fauna species including cited features of designated sites	tug/anchor handlers, cable barge, Crew Transfer Vessel and Dive Support Vessels; A maximum of 14 vessels may be operational at any one time during the construction phase. Infrastructure intertidal (MLWS – MHWS) Trenchless drill length: 60m; Trenchless drill burial depth of trenchless drill: 40m. Landfall Infrastructure onshore (landward of MHWS) Maximum width of trenchless drill area, west of Durham Coast Line: 400m; Material quantities associated with excavation: 130,000m³. Transition Joint Bays Number of TJBs: 2; Location of TJBs: Within 150m of landfall trenchless drill entry point; Working Area for TJB (construction): 750m²; Depth of TJB: 2.5m; Landfall construction compound Number of main compounds: 1; Dimension of main compound: 48,000m²; Number of secondary compounds: 1; Dimension of secondary compound: 900m²; Number of access tracks: 2 from A192; Construction access track widths: 10m; Drilling mud: bentonite and/or polymer fluids.	construction' is defined by the construction area for a single TJB, which joints both onshore export cables due to it having the largest construction working area.
<i>Onshore Export Cable Corridor and AC Connection Cable Corridor</i>		

Impact	Maximum Design Scenario	Explanation
Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna), affecting designated sites, habitats and species	Construction corridor length: 9.59km ; Construction period for Onshore Export Cable: 42 months; Working hours are 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 Saturday, with shoulder mobilisation hours and continuous working required for trenchless techniques Dimensions of trench for AC connection cables – Blue LSS Number of export cables: 24 (4 circuits); Length of cable route: 4,260m; Number of cable trenches: 4; Width of cable corridor (temporary including permanent): 100m; Onshore cable area (temporary): 426,000m²; Trench width at top per circuit: 4.8m; Trench width at base per circuit: 2.8m; Trench depth per circuit: 1.8m; Depth of stabilised backfill: 450mm; Number of cable route joint bays: 32; Number of link boxes: 32; Volume of material excavated per joint bay: 2,264m³ (total = 18,112m³, assuming 4 circuits are jointed in a single excavation)	<u>Component export cables</u> HVAC (24) = Comprising of Power Cores, Earth Continuity Conductors, Fibre and control cables HVDC (4) = 2-off Conductors and 2-off Fibre Optics cables. The onshore export cable and AC cable parameters defined in this MDS are those required to construct the MHPGC Project, including the Blue LSS option. The Blue LSS option constitutes the worst-case due to the larger cable corridor width and length and thus area of temporary land-take required, when compared to the Green LSS Option. The MDS for terrestrial ecology and terrestrial and intertidal ornithology is the greatest length and number of cable trenches, and number of joint

Impact	Maximum Design Scenario	Explanation
Fragmentation of habitats (resulting in a reduction in connectivity), affecting designated sites, habitats and species	Construction land take for link box: 100m² (total = 3200m²); Volume of material excavated per link box: 12.5m³; Volume of material excavated (link boxes): 400m³; Dimensions of trench for onshore export cable (HVDC) – Blue LSS Number of export cables: 4; Length of cable route: 4.83km; Width of cable corridor (temporary inc. permanent): 40m; Number of cable trenches: 2 ; Onshore cable area (temporary): 193,200m²; Trench width at top: 6.85m; Trench width at base: 4m; Cable trench depth: 1.8m; Depth of stabilised backfill: 450mm; Number of cable route joint bays: 12; Volume of material excavated per joint bay: 700m³ (total = 8,400m³); Volume of material excavated per monitoring box: 18m³ (total = 216m³); Construction land take per monitoring box: 64m²; Construction land take for all monitoring boxes: 768m²; Infrastructure Number of haul roads: 1; Haul road construction: geogrids and 500mm stone;	bays, link boxes and construction compounds. In regards to watercourse crossings, open cut trenching represents the MDS in terms of direct disturbance. The use of open cut trenching to cross watercourses represents the greatest impacts to terrestrial ecology and terrestrial and intertidal ornithology receptors

Impact	Maximum Design Scenario	Explanation
Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement), affecting fauna species including cited features of designated sites	Haul road widths: 8m; Haul road depth: 0.5; Dimensions of temporary culvert/bridge crossings for the haul road: 10 x 6 x 5; Number of main compounds: 2; Main compound area: 7ha; Total area of main compounds: 14ha; Number of secondary construction compounds: 6; Dimensions per secondary construction compound: 10,000m²; Total area of secondary construction compounds: 6ha. Trenchless Drill Crossings Major Crossings understood to be: - A, B and Classified unnumbered roads (known as C roads) (including the A19 and B1432); - Hesledon Moor East SSSI. Trenchless drill methodology: HDD Number of trenchless drill compounds: 6 (3 entry and 3 exit trenchless drill compounds) Dimensions of trenchless drill compounds: 6,000m² Total trenchless drill compound area: 36,000m² Trenchless depth (excluding landfall): 30m Drilling mud used: bentonite and/or polymer fluids. Construction Access Number of construction access tracks (excluding existing tracks): 6.	
<i>Onshore Land Substation</i>		

Impact	Maximum Design Scenario	Explanation
Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna), affecting designated sites, habitats and species	Dimensions Construction period for LSS: 4.5 years; Area of temporary construction footprint: 7ha; Area of temporary works (laydown and storage): 3.5ha; Number of buildings: 15; Width of main building/structure: 100m; Length of main building/structure: 200m LSS Construction Description of foundations: raft or pile caps (suspended structure) or piled foundations and suspended structures; Volume of excavation for foundations: 20,000m ³ ; Cut and fill balance: 50,000m ³ ; Material types and quantities associated to excavation: 14,000m ³ topsoil, 65,000m ³ other materials; Estimated waste quantities: 50,000m ³ . Access Temporary width of access including passing bays: 15m; Number of temporary accesses: 2; Reinstatement of temporary land: 4 months.	The MDS is represented by the largest working areas and excavation volumes which arise from the construction of the LSS. With respect to the optionality between an AIS and GIS solutions, the MDS is defined by the worst-case parameter from either design solution.
Fragmentation of habitats (resulting in a reduction in connectivity), affecting designated sites, habitats and species		
Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement), affecting fauna species including cited features of designated sites		
Operation and Maintenance		
Landfall		
Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna), affecting designated sites, habitats and species	Typical duration of operation: 35 years; Operational land take for TJB (surface area): 25m ² ; Total area of TJB: 150m ² ; Activities anticipated during operation and maintenance: quarterly.	The MDS for terrestrial ecology and intertidal ornithology is represented by the largest permanent areas of impermeable surface/hard standing, which represent the worst case in terms of habitat loss and loss of fauna

Impact	Maximum Design Scenario	Explanation
Fragmentation of habitats (resulting in a reduction in connectivity), affecting designated sites, habitats and species		
Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement), affecting fauna species including cited features of designated sites		
Onshore Export Cable Corridor and AC Connection Cable Corridor		
Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna), affecting designated sites, habitats and species	Typical duration of operation: 35 years. AC Connection Cable Corridor – Blue LSS Length of cable route: 4.26km; Width of cable corridor (permanent): 25m; HVAC Onshore cable area (permanent): 106,500m ² ; HVAC Operational land take per access cover: 25m ² (total = 200m ²). Onshore Export Cable Corridor – Blue LSS	
Fragmentation of habitats (resulting in a reduction in connectivity), affecting designated sites, habitats and species	Length of cable route: 4.83km; Width of cable corridor (permanent): 8.65m; HVDC Onshore cable area (permanent): 41,780m ² ; HVDC Operational land take per access cover: 6.25m ² (total = 75m ²); Number of operational access tracks (excluding existing tracks): 6;	

Impact	Maximum Design Scenario	Explanation
Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement), affecting fauna species including cited features of designated sites	Operational access track construction: Assume the additional access tracks into the cable route (if required) will use existing access points and unpaved farm tracks where possible; Potential access tracks from the construction works will be retained during operation; Activities anticipated during operation and maintenance: quarterly.	
Land Substation		
Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna), affecting designated sites, habitats and species	Typical duration of operation: 35 years; Area of permanent footprint: 6.5ha; Impermeable permanent area: 3.5ha; SuDS area: 2,300m ² ; SuDS volume: 3,500m ³ ;	
Fragmentation of habitats (resulting in a reduction in connectivity), affecting designated sites, habitats and species	Number of permanent accesses: 2; Permanent access width: 15m; Permanent access points: 2; Activities anticipated during operation: Monthly day visit inspections; Quarterly detailed inspections/ non-intrusive work; Annual turnaround/shutdown.	
Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement), affecting fauna species including cited features of designated sites		
Decommissioning		
Landfall		
Decommissioning of the Landfall cables and associated earthworks resulting in potential impacts on		Decommissioning is likely to operate within the parameters identified for construction (i.e., any activities are

Impact	Maximum Design Scenario	Explanation
water quality, flood risk and water resources	Leave cables in place, to minimise/ avoid environmental disturbance. Leaving the cables in place has little or no environmental impact whilst recovering them would disturb the local environment.	likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction). The MDS during decommissioning is the removal of the above-ground infrastructure as this presents the greatest disturbance.
Onshore Export Cable		
Decommissioning of the Onshore cable (including watercourse crossings) and associated earthworks resulting in a potential impact on water quality, water resource, hydromorphology, and flood risk		
Land Substation		
Decommissioning of the LSS and associated earthworks resulting in a potential impact on water quality, hydromorphology, flood risk and water resources	Deconstruction in the inverted sequence of installation, after the Land Substation (LSS) has been decommissioned. All equipment and materials including foundations will be demolished and disposed of, in accordance with the latest relevant guidance. The site will be reinstated.	

3.8 Commitments adopted as part of the MHPGC Project

- 3.8.1.1 As set out in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** and **Volume 1, Annex 4.1: Draft Commitments Register, of the PEIR** several measures have been adopted as part of the MHPGC Project to reduce the potential for impacts on terrestrial ecology and terrestrial and intertidal ornithology.
- 3.8.1.2 Embedded mitigation includes the following measures as identified in the Institute of Sustainability and Environmental Professionals (ISEP), formerly Institute of Environmental Management and Assessment (IEMA) Guide to Shaping Quality Development (IEMA, 2015):
- Primary mitigation - measures included as part of the project design. IEMA describes these as “modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken”. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and marine licence, or both;
 - Tertiary mitigation - IEMA describes these as “actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects”.
- 3.8.1.3 Embedded mitigation measures that will form part of the final design (and are established legislative requirements/good practice, or both) have been taken into account as part of the assessment presented in **Section 3.9** (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures that the Applicant is committed to are considered in the assessment of effects.
- 3.8.1.4 Where an assessment identifies likely significant adverse effects, secondary mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by IEMA as “actions that will require further activity to achieve the anticipated outcome” and may be imposed as part of the planning consent, or through inclusion in the ES. These include measures required to reduce the significance of environmental effects and may be secured through an environmental management plan. For secondary mitigation measures both pre-mitigation and residual effects are presented.
- 3.8.1.5 The measures relevant to terrestrial ecology and terrestrial and intertidal ornithology are outlined in Error! Reference source not found.. As there is a secured commitment to implementing these measures, they are considered inherently part of the design of the MHPGC Project and have therefore been considered in the assessment presented in **Section 3.9**.

Table 3-19: Embedded mitigation relevant to terrestrial ecology and terrestrial and intertidal ornithology implemented as part of the MHPGC Project

Commitment number	Measure adopted	How the measure will be secured
CoT03	Core working hours for the construction of the landfall and onshore components of the MHPGC Project will be as follows: - Monday to Friday: 07:00–19:00 hours; - Saturday: 07:00–13:00 hours; - Up to one hour before and after core working hours for mobilisation (“mobilisation period”), i.e. 06:00–20:00 weekdays and 06:00–14:00 Saturdays; In circumstances outside of core working practices, specific works may need to be undertaken outside the core working hours. Advance notice of such works will be provided to the relevant planning authority. This will be set out in the Outline Code of Construction Practice (CoCP), which will be prepared and submitted as part of the application for development consent. A Detailed CoCP will be developed substantially in accordance with the Outline CoCP.	Will be secured via DCO Schedule &/or Requirement
CoT11	All necessary vegetation removal will be undertaken outside of the bird breeding season (March-September inclusive). If this is not reasonably practicable, the vegetation requiring removal will be subject to a nesting bird check by a suitably qualified Ecological Clerk of Works (ECOW). If nesting birds are present, these will be protected by a suitable buffer and remain in place until all young have fledged or the nest failed. This will be carried out substantially in accordance with the Outline Landscape and Ecological Management Plan that will be prepared and submitted with the application for Development Consent.	Will be secured via DCO Schedule &/or Requirement
CoT13	The Project Description (Volume 1, Chapter 2 of the PEIR) sets out that the installation of the offshore export cables under Durham Coast SSSI and SAC will be undertaken by trenchless technologies. The exit pits associated with the trenchless technologies installation will be at least 100 m seaward of the eastern boundary of the Durham Coast SSSI and SAC.	Will be secured via DCO Schedule &/or Requirement
CoT16	An Onshore Decommissioning Plan will be developed prior to decommissioning. It will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure (if and where relevant and practicable), and details relevant to flood risk, pollution prevention, protection of soils and avoidance of ground disturbance. The Onshore Decommissioning Plan will be in line with the latest relevant legislation and available guidance at the time of production, as far as reasonably practicable.	Will be secured via DCO Schedule &/or Requirement
CoT17	Where practicable, the siting of the temporary and permanent footprint of the MHPGC Project will avoid areas of Flood Risk Zone 2 and 3, sensitive historic, cultural, ecological and other environmental receptors, both statutory and non-statutory, during the site selection process for the MHPGC Project.	Will be secured via DCO Schedule &/or Requirement

Commitment number	Measure adopted	How the measure will be secured
CoT18	An Outline Code of Construction Practice (CoCP) will be prepared and submitted with the application for development consent. A Detailed CoCP will be developed substantially in accordance with the Outline CoCP. The Outline CoCP will include (but is not limited to) measures to maintain and address: • flood protection and control measures; • water environment and drainage; • noise and vibration management measures; • air quality and dust management; • pollution prevention and management; • geology and ground conditions; • soil and materials management; • land use, tourism and recreational assets; • waste management.	Will be secured via DCO Schedule &/or Requirement
CoT21	An Outline Dust Management Plan (DMP) will form part of the Outline CoCP, which will be prepared and submitted as part of the application for development consent. A Detailed DMP will be developed substantially in accordance with the Outline DMP. The measures in the Detailed DMP will accord with guidance set out by the Institute of Air Quality guidance Management (IAQM, 2024) where appropriate and practicable, and will include measures for monitoring and reporting dust levels, and dust suppression and mitigation measures during construction.	Will be secured via DCO Schedule &/or Requirement
CoT23	An Outline Surface Water and Groundwater Management Plan (SWGMP) will form part of the Outline CoCP, will be submitted with the application for development consent. The Outline SWGMP will set out measures to protect surface water and groundwater during construction, covering surface water and drainage management measures, flood risk control measures, and management of foul water from construction compounds. A Detailed SWGMP will be developed substantially in accordance with the Outline SWGMP.	Will be secured via DCO Schedule &/or Requirement
CoT25	Construction site lighting will only operate when required and will be positioned and directed to avoid unnecessary illumination to residential properties, sensitive ecological receptors and footpath users, and minimise glare to users of adjoining public highways. Construction site lighting will be designed in accordance with latest relevant available guidance and legislation and the details of the location, height, design and luminance of lighting to be used will be covered within the Outline Construction Artificial Light Emissions Management Plan, will form part of the Outline CoCP, which will be prepared and submitted as part of the application for the development consent.	Will be secured via DCO Schedule &/or Requirement
CoT26	An Outline Construction Noise and Vibration Management Plan will form part of the Outline CoCP, which will be prepared and submitted as part of the application for development consent. It will include measures to mitigate noise from construction activities associated with the MHPGC Project. A Detailed Construction Noise and Vibration Management Plan will be developed substantially in accordance with	Will be secured via DCO Schedule &/or Requirement

Commitment number	Measure adopted	How the measure will be secured
	the Outline Construction Noise and Vibration Management Plan. Bespoke method statement(s) will be developed, where required, to ensure suitable noise limits can be met on specific sensitive noise receptors.	
CoT27	The onshore export cables and the AC connection cables will be completely buried underground for the entire length. No overhead pylons will be installed as part of the MHPGC Project.	Will be secured via DCO Schedule &/or Requirement
CoT29	Post-construction, the temporary working areas will be reinstated to pre-existing condition as far as reasonably practical, in line with best practice guidance.	Will be secured via DCO Schedule &/or Requirement
CoT34	An Outline Pollution Prevention Plan (PPP) will form part of the Outline Code of Construction Practice (COCPP), which will be prepared and submitted with the application for development consent. A Detailed PPP will be developed substantially in accordance with the Outline PPP. This will include details of emergency spill procedures and good practice guidance such as the Environment Agency's Pollution Prevention Guidance notes (including Pollution Prevention Guidance notes 01, 05, 08 and 21) will be followed where appropriate, or the latest relevant available applicable guidance.	Will be secured via DCO Schedule &/or Requirement
CoT42	Vegetation, including trees, woodland and hedgerows, will be mapped through a Vegetation Retention Plan (or similar) to inform construction activities, with vegetation retained wherever practicable. All vegetation works will be undertaken in accordance with BS 5837:2012, including the implementation of appropriate root protection measures. These measures will be consolidated within an Arboricultural Management Plan that will form part of the Outline Landscape and Ecological Management Plan, which will be prepared and submitted with the application for development consent.	Will be secured via DCO Schedule &/or Requirement
CoT43	An Outline Landscape and Ecological Management Plan (LEMP) will be prepared and submitted with the development consent application and will establish the mitigation and management measures relevant to terrestrial and intertidal ecology and conservation. It will include: - mitigation measures relating to protected or notable species and/or sensitive habitats; - appointment of an ECoW where required; - details of mitigation planting at the onshore substation site including the number, location, species and details of management and maintenance of planting. A Detailed LEMP will be developed substantially in accordance with the Outline LEMP.	Will be secured via DCO Schedule &/or Requirement

Commitment number	Measure adopted	How the measure will be secured
CoT47	An Outline Bentonite Breakout Plan will form part of the Outline Code of Construction Practice (CoCP), which will be submitted as part of the application for the development consent. A Detailed Bentonite Breakout Plan will be developed substantially in accordance with the outline plan.	Will be secured via DCO Schedule &/or Requirement
CoT48	An Outline Biosecurity Protocol will form part of the Outline (CoCP), which will be prepared and submitted as part of the application for the development consent. It will include measures such as the use of proven invasive species control and other biosecurity measures to avoid the spread of INNS and INNS contaminated materials. A Detailed Biosecurity Protocol will be developed substantially in accordance with the Outline Biosecurity Protocol.	Will be secured via DCO Schedule &/or Requirement
CoT51	An Onshore Crossing Schedule will be submitted with the application for development consent based on the refined design for the application. The following features will be crossed using trenchless techniques: • A, B and Classified unnumbered roads (known as C roads) (including the A19 and B1432); • all railway lines (including the section of railway line which runs between Seaham and Horden); • the Durham Coast SSSI and SAC; • Hesledon Moor East SSSI.	Will be secured via DCO Schedule &/or Requirement

3.9 Assessment of impacts

- 3.9.1.1 The following sections present the assessment of impacts of the MHPGC Project on ecological receptors.
- 3.9.1.2 The assessment is based on the proposed footprint of the Blue and Green onshore LSS in their locations (both temporary and permanent), as illustrated on **Figure 3.1**. The onshore export cable corridor and AC connection cable corridor have been assessed as potentially being located anywhere within the MHPGC PEIR Redline Boundary: Onshore, based on the MDS parameters (**Section 3.7**) and sited on the worst-case scenario for assessment of a given receptor.
- 3.9.1.3 The assessment has considered differences between the two Blue and Green LSS onshore substation options. The Blue LSS and Green LSS options are only discussed within the following assessment sections where they are relevant to a particular ecological receptor, and where the option(s) materially change the assessment. Blue LSS and Green LSS options are not discussed where the difference in the impact and effect is negligible between options.
- 3.9.1.4 Where habitat loss is discussed within this PEIR, potential permanent habitat loss associated with the LSS has been quantified where relevant based on the LSS area of permanent footprint defined in the MDS parameters in **Section 3.7**, occurring within the potential LSS locations illustrated on **Figure 3.1**. As the location of the cable corridors and other remaining elements of construction infrastructure are still to be determined (see above), the associated potential temporary and permanent habitat loss will be quantified once the project design has been defined. This includes temporary habitat loss associated with the installation of the onshore export cables and AC connection cables, construction compounds, and access roads, and other associated infrastructure where habitats would be reinstated once construction is completed within each area, and minor areas of permanent habitat loss at junctures along the cable corridors where inspection covers of link boxes and joint bays are present at the surface.
- 3.9.1.5 The following sections consider the potential impacts on each ecological receptor included within the assessment (see **Section 3.6.3**) during the construction and operation and maintenance phases. Potential impacts during decommissioning are assessed in **Section 3.9.27**.
- 3.9.1.6 Due to the number of potential impacts and receptors included within the biodiversity assessment, the assessment within this section takes the following approach:
- **Preliminary assessment:** accounting for embedded mitigation in **Section 3.8**, receptors and impacts which they are sensitive to are assessed to determine if there is potential for a significant effect to occur. Where no potential for an effect to be significant is identified (e.g. because the embedded mitigation is sufficient to negate or minimise the impact) the receptors and associated impacts, and justification, are presented in **Table 3-20** and not considered further in the assessment. Where there is potential for an effect to be significant, the receptor and associated impact is identified in **Table 3-20** and carried forward for further detailed assessment (see below).
 - **Further detailed assessment of potentially significant effects:** for receptors where impacts could potentially have a significant effect, each receptor is considered in turn to assess the magnitude of change, the level of effect and its significance.

3.9.2 Preliminary assessment

- 3.9.2.1 **Table 3-20** sets out the preliminary assessment, taking into account embedded mitigation in **Section 3.8**. Where the preliminary assessment has identified impacts on receptors could potentially have significant effects, these are identified in **Table 3-20** and are subject to further detailed assessment in the following **Sections 3.9.3 to Error! Reference source not found.**, and summarised in **Section 3.13**.

Table 3-20: Preliminary assessment to determine potential for significant effects

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
All sensitive ecological receptors (see Table 3-17)	Changes in hydrology (resulting in habitat loss or degradation and/or loss of fauna)	Up to 1km from the MHPGC Project PEIR Red Line Boundary: Onshore	c, o&m, d	International to Local/Very High to Low	Negligible	Up to Minor/Not Significant	Potential changes to surface water including water quality, flood risk and hydromorphology, are assessed in Volume 3, Chapter 2: Water Resources and Flood Risk of the PEIR. The assessment considered potential impacts on surface waterbodies and relevant designated sites, including the Durham Coast SSSI which underpins the Durham Coast SAC, and identified no significant effects on surface water. Groundwater within the Secondary A Aquifer & Secondary undifferentiated Aquifer is present within the shallow subsurface and therefore excavations and earthworks associated with construction of the onshore components could result in changes to groundwater including levels and flow, pollution and release of contaminants, are assessed in Volume 3, Chapter 1: Geology, Hydrogeology and Groundwater Conditions of the PEIR, which identified no significant effects on groundwater. Environment Agency data on Groundwater Dependent Terrestrial Ecosystems (GWDTEs) and baseline surveys identify potential presence of GWDTEs within the MHPGC PEIR Redline Boundary: Onshore within Durham Coast SSSI/SAC and Hesledon Moor East and West SSSIs. In line with the assessment in Volume 3, Chapter 1: Geology, Hydrogeology and Ground Conditions, there would be no significant effects on groundwater that would affect GWDTEs. The potential hydrology changes affecting ecological receptors across and beyond the MHPGC PEIR Redline Boundary: Onshore would be controlled via the implementation of embedded mitigation (see Section 3.8, Error! Reference source not found.) and control of impacts on hydrology is subject to legal and policy compliance (see Section 3.2.2). The highest risk of potential impacts would occur during the construction phase when relevant embedded mitigation includes CoT18 (Outline CoCP) and relevant outline managements plans including CoT21 (Dust Management Plan); CoT23 (Surface Water and Groundwater Management Plan); CoT33 (Contaminated Land and Groundwater Discovery Strategy); CoT34 (Pollution Prevention Plan); CoT40 (Soil Management Plan); CoT47 (Bentonite Breakout Plan); and CoT43 (Landscape and Ecological Management Plan, including ecological mitigation measures and appointment of an Ecological Clerk of Works where required). Design measures for the operational onshore components would be detailed in CoT22 (Operational Drainage Management Plan) and CoT62 (Design Principles). The LSS would be de-constructed upon decommissioning, the Onshore Decommissioning Plan (CoT16) would provide the measures to manage impacts appropriate at the time. These measures would be effective in controlling the impact of changes in hydrology and would negate or minimise the risk to designated sites, sensitive habitats

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
							and other ecological receptors such that there would be no likely significant effects.
All sensitive ecological receptors (see Table 3-17)	Changes in air quality; dust (resulting in habitat degradation)	Up to 250m from the MHPGC Project PEIR Red Line Boundary: Onshore	c, o&m, d	International to Local/Very High to Low	Negligible	Up to Minor/Not Significant	Potential changes in air quality due to dust are assessed in Volume 3, Chapter 7: Onshore Air Quality, of the PEIR. Relevant sensitive ecological receptors were included in the assessment, including Durham Coast SAC/SSSI and other statutory and non-statutory designated sites, which concluded that the dust impact risk for construction, earthworks and trackout associated with the MHPGC Project would be negligible and not significant due to embedded mitigation. The risk of dust deposition affecting ecological receptors across and beyond the MHPGC PEIR Redline Boundary: Onshore would be controlled via the implementation of embedded mitigation (see Section 3.8, Table 3-19), and control of air quality is subject to legal and policy compliance (see Section 3.2.2). The highest risk of impacts would occur during the construction phase when relevant embedded mitigation includes CoT18 (Outline CoCP including air quality and dust management); CoT21 (Outline Dust Management Plan (DMP) including measures that will accord with guidance by the Institute of Air Quality guidance Management (IAQM, 2024) where appropriate and practicable, and will include measures for monitoring and reporting dust levels, and dust suppression and mitigation measures during construction); and CoT43 (Outline Landscape and Ecological Management Plan, including ecological mitigation measures and the appointment of an Ecological Clerk of Works where required). The LSS would be de-constructed upon decommissioning, the Onshore Decommissioning Plan (CoT16) would provide the measures to manage impacts appropriate at the time. These measures, together with standard best practice, would be effective in controlling the impact of dust and would negate or minimise the risk to designated sites, sensitive habitats and other ecological receptors such that there would be no likely significant effects.
All sensitive ecological receptors (see Table 3-17)	Changes in air quality – traffic related emissions (resulting in habitat degradation)	Up to 200m from the affected road network	c, o&m, d	International to Local/Very High to Low	Negligible	Up to Minor/Not Significant	Potential changes in air quality due to traffic related emissions are screened and assessed in Volume 3, Chapter 7: Onshore Air Quality, of the PEIR. Relevant sensitive ecological receptors were included in the assessment, including statutory and non-statutory designated sites within the Zol of the affected road network. The assessment considered air quality modelling against screening criteria, which predicted exceedances for vehicle emissions for heavy and light duty vehicles on some parts of the affected road network. While exceedances are predicted, the assessment identified that for current background ambient air pollution concentrations and deposition levels at the ecological receptors, the existing NO_x concentrations are

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
							comfortably below the annual mean Air Quality Assessment Level. Background nitrogen deposition exceeds the minimal critical load whereas acid deposition is below the relevant critical load. The air quality assessment concluded that potential impacts on relevant ecological receptors would be negligible and not significant.
All ecological receptors (see Table 3-17)	Pollution events (resulting in habitat loss or degradation and/or loss of fauna)	Up to 500m from the MHPGC Project PEIR Red Line Boundary: Onshore	c, o&m, d	International to Local/Very High to Low	Negligible	Up to Minor/Not Significant	The risk of pollution events affecting ecological receptors across and beyond the MHPGC PEIR Redline Boundary: Onshore would be controlled via the implementation of embedded mitigation (see Section 3.8, Table 3-19), and pollution prevention is subject to legal and policy compliance (see Section 3.2.2). The highest risk of potential impacts would occur during the construction phase when relevant embedded mitigation includes CoT18 (Outline CoCP, including pollution prevention, drainage and waste management); CoT34 (Outline Pollution Prevention Plan (PPP) including details of emergency spill procedures, and good practice guidance such as the Environment Agency's Pollution Prevention Guidance notes will be followed where appropriate or the latest relevant available applicable guidance); and CoT43 (Outline Landscape and Ecological Management Plan, including ecological mitigation measures and appointment of an Ecological Clerk of Works where required). The LSS would be de-constructed upon decommissioning, the Onshore Decommissioning Plan (CoT16) would provide the measures to manage impacts appropriate at the time. These measures, together with standard best practice, would be effective in preventing pollution and would negate or minimise the risk to designated sites, sensitive habitats and other ecological receptors such that there would be no likely significant effects.
All ecological receptors (see Table 3-17)	Introduction of INNS (resulting in habitat degradation)	Up to 500m from the MHPGC Project PEIR Red Line Boundary: Onshore	c, o&m, d	International to Local/Very High to Low	Negligible	Up to Minor/Not Significant	The potential risk of spreading INNS across and beyond the MHPGC PEIR Redline Boundary: Onshore would be controlled via the implementation of embedded mitigation (see Section 3.8, Table 3-19), and controlling the spread of INNS is subject to legal and policy compliance (see Section 3.2.2). The highest risk of potential impact would occur during the construction phase when relevant embedded mitigation includes CoT18 (Outline CoCP, including soils and materials and waste management plans); CoT43 (Landscape and Ecological Management Plan, including ecological mitigation measures and the appointment of an Ecological Clerk of Works where required); and CoT48 (Outline Biosecurity Protocol, including measures such as the use of proven invasive species control and other biosecurity measures to avoid the spread of INNS and INNS contaminated materials). The LSS would be de-constructed upon decommissioning, the Onshore Decommissioning Plan (CoT16) would provide the measures to manage impacts appropriate at the time.

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance		Justification
								These measures, together with standard best practice, would be effective in controlling the spread of INNS and would negate or minimise the risk to designated sites, sensitive habitats and other ecological receptors such that there would be no likely significant effects.
Northumbria Coast SPA and Ramsar: all features	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 650m from MHPGC PEIR Red Line Boundary:	c, o&m, d	International/Very High	The MHPGC PEIR Red Line Boundary: Onshore lies within 4km of the southern extent of these sites. Of these site's features, purple sandpiper and turnstone are considered likely to utilise the rocky reefs and strandline inside and adjacent to the Red Line boundary. The coastline could therefore be considered potentially suitable habitat for these particular species, although it should be emphasised that neither were recorded during ornithological site surveys during 2023–2026 inclusive. Further detailed assessment is presented in Section 3.9.3 .			
	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary	c, o&m, d	International/Very High	No change	No effect	These sites are designated for breeding and non-breeding bird assemblages (detailed in Table 3-9). The sites are located 1.7km north of the MHPGC PEIR Red Line Boundary: Onshore, and ornithology surveys did not identify any functionally linked land (FLL) within the Zol. Therefore, permanent or temporary loss of habitat would not affect qualifying features, there would be no fragmentation effects, and birds will be free to move across the MHPGC PEIR Red Line Boundary: Onshore. Therefore, there are no pathways for significant effects to occur.	
	Fragmentation of habitats (resulting in a reduction in connectivity)							
Durham Coast SAC: qualifying habitat feature; Vegetated sea cliffs of the Atlantic and Baltic coasts Durham Coast SSSI: terrestrial ecology features	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	International to National/Very High to High	Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.4 .			
	Fragmentation of habitats (resulting in a reduction in connectivity)							
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	N/A	c, o&m, d	International to National/Very High to High	N/A	N/A	The cited habitat features are not sensitive to this impact.	
Durham Coast SSSI: ornithology features	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 650m from the MHPGC PEIR Red Line Boundary	c, o&m, d	National/High	Turnstone, sanderling kittiwake and fulmar, all reasons for the sites’ designation, have been recorded during the field surveys. Further detailed assessment is presented in Section 3.9.5 .			
Teesmouth and Cleveland Coast SPA and Ramsar	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary	c, o&m, d	International/Very High	No change	No effect	These sites are designated for breeding and wintering bird assemblages. The sites are located 7.75km south of the MHPGC PEIR Red Line Boundary, and ornithology surveys did not identify any FLL within the Zol. Therefore, permanent or temporary loss of habitat would not affect qualifying features, there would be no fragmentation	

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary					effects or disturbance or displacement effects, and birds will be free to move across the MHPGC PEIR Red Line Boundary: Onshore. Therefore, there are no pathways for significant effects to occur.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 650m from the MHPGC Project PEIR Red Line Boundary.					
Eppleton Grassland SSSI	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	No change	No effect	The SSSI lies 1.7km to the north of the MHPGC PEIR Red Line Boundary: Onshore. The site is designated for its vegetative habitats. Given the distance from the MHPGC PEIR Red Line Boundary: Onshore to this site, it is considered that there are no pathways for significant effects on interest features (habitats).
	Fragmentation of habitats (resulting in a reduction in connectivity)						
Pig Hill SSSI	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	No change	No effect	The SSSI lies 1.8km to the west of the MHPGC PEIR Red Line Boundary: Onshore. The site is designated for its vegetative habitats. Given the distance from the MHPGC PEIR Red Line Boundary: Onshore to this site, it is considered that there are no pathways for significant effects on interest features (habitats).
	Fragmentation of habitats (resulting in a reduction in connectivity)						
Tuthill Quarry SSSI	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	No change	No effect	The SSSI lies 1.8km to the southwest of the MHPGC PEIR Red Line Boundary: Onshore. The site is designated for its vegetative habitats. Given the distance from the MHPGC PEIR Red Line Boundary: Onshore to this site, it is considered that there are no pathways for significant effects on interest features (habitats).
	Fragmentation of habitats (resulting in a reduction in connectivity)						
Hesledon Moor East SSSI	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	Negligible	Minor/Not Significant	Where practicable, the siting of the temporary and permanent footprint of the MHPGC Project will avoid sensitive ecological receptors during the site selection process (CoT17). Embedded mitigation set out in Section 3.8 . The highest risk of potential impact would occur during the construction phase when relevant embedded mitigation includes that trenchless techniques will be used to cross the Hesledon Moor East SSSI site and an Onshore Crossing Schedule will be submitted with the application for development consent based on the refined design for the application (CoT51), the measures outlined within the Outline Code of Construction Practice (CoT18), which will include an Outline Dust Management Plan (DPM CoT21), an Outline Construction Artificial Light Emissions Management Plan (CoT25), an Outline Landscape and
	Fragmentation of habitats (resulting in a reduction in connectivity)						

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
							Ecological Management Plan (CoT43) and a Vegetation Retention Plan or similar consolidated with an Arboricultural Management Plan (CoT42) forming part of the Landscape and Ecological Management Plan. The commitments outlined above including mitigation and management measures relating to sensitive habitats (CoT43) and vegetation retention wherever practicable (CoT 42) will ensure that fragmentation impacts will be avoided or minimised. Therefore, any potential effects would not be significant.
Hesledon Moor West SSSI	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	Negligible	Minor/Not Significant	Where practicable, the siting of the temporary and permanent footprint of the MHPGC Project will avoid sensitive ecological receptors during the site selection process (CoT17). Embedded mitigation set out in Section 3.8 . The highest risk of potential impact would occur during the construction phase when the following embedded mitigation applies. While the Hesledon Moor West SSSI adjoins the MHPGC PEIR Red Line Boundary: Onshore, the site will be protected during construction via the measures outlined within the Outline Code of Construction Practice (commitment CoT18), which will include an Outline Dust Management Plan (DPM CoT21), an Outline Construction Artificial Light Emissions Management Plan (CoT25), an Outline Landscape and Ecological Management Plan (CoT43) and a Vegetation Retention Plan or similar consolidated with an Arboricultural Management Plan (CoT42) forming part of the Landscape and Ecological Management Plan. The commitments outlined above including mitigation and management measures relating to sensitive habitats (CoT43) and vegetation retention wherever practicable (CoT 42) will ensure that fragmentation impacts will be avoided or minimised. Therefore, any potential effects would not be significant.
	Fragmentation of habitats (resulting in a reduction in connectivity)						
Hawthorn Dene SSSI	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	Negligible	Minor/Not Significant	Where practicable, the siting of the temporary and permanent footprint of the MHPGC Project will avoid sensitive ecological receptors during the site selection process (CoT17). Embedded mitigation set out in Section 3.8 . The highest risk of potential impact would occur during the construction phase when the following embedded mitigation applies. While Hawthorn Dene SSSI adjoins the MHPGC PEIR Red Line Boundary: Onshore, the site will be protected during construction via the measures outlined within the Outline Code of Construction Practice (commitment CoT18), which will include an Outline Dust Management Plan (DPM CoT21), an Outline Construction Artificial Light Emissions Management Plan (CoT25), an Outline Landscape and Ecological Management Plan (CoT43) and a Vegetation Retention Plan or similar consolidated with an Arboricultural Management Plan (CoT42) forming part of the Landscape and Ecological Management Plan. The commitments outlined above including mitigation and management measures relating to sensitive habitats (CoT43) and vegetation retention wherever practicable (CoT 42) will ensure that fragmentation impacts will be avoided or minimised. Therefore, any potential effects would not be significant.
	Fragmentation of habitats (resulting in a reduction in connectivity)						

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
							avoided or minimised. Therefore, any potential effects would not be significant.
Durham Coast NNR	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	No change	No effect	The site is designated for its population of breeding little tern. The site is located 4.25km south of the MHPGC PEIR Red Line Boundary: Onshore and the nearest known colony of little tern is 12.1km south at Crimdon Dene. This is beyond the maximum foraging distance of little tern of 11 km. Therefore, permanent or temporary loss of habitat would not affect qualifying features, there would be no fragmentation effects, or disturbance or displacement, and birds will be free to move across the MHPGC PEIR Red Line Boundary: Onshore. Therefore, there are no pathways for significant effects to occur.
	Fragmentation of habitats (resulting in a reduction in connectivity)						
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 650m from the MHPGC Project PEIR Red Line Boundary.					
Easington LNR	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	No change	No effect	The site is located approximately 1.6km from the MHPGC PEIR Red Line Boundary: Onshore, and no pathway exists to affect the designated habitats.
	Fragmentation of habitats (resulting in a reduction in connectivity)						
Noses Point LNR	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	Negligible	Negligible/Not Significant	This LNR is located within the ZoI. However, there will be no permanent or temporary loss/fragmentation of the qualifying features as the use of trenchless crossing methods will be implemented here (pollution prevention measures, will be considered and mitigated for within the Outline CoCP (CoT18) that will include an Outline Pollution Prevention Plan (CoT34) and Outline Bentonite Breakout Plan (CoT47) and there are no impact pathways.
	Fragmentation of habitats (resulting in a reduction in connectivity)						
LWS within the MHPGC PEIR Red Line Boundary: Onshore: Hawthorn Quarry LWS; Coop House Wood and Coop House Wood (1) LWS; Hesledon Moor East LWS.	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	Up to Low	Minor/Not Significant	Embedded mitigation set out in Section 3.8 , to avoid, where practicable, sensitive ecological receptors, including non-statutory, is included (CoT17). These LWSs are therefore considered outside of the ZoI. The LWSs will be protected during construction via the measures outlined within the Outline CoCP (CoT18), which will include an Outline Dust Management Plan (DPM CoT21), an Outline Construction Artificial Light Emissions Management Plan (CoT25), an Outline Landscape and Ecological Management Plan (CoT43) and a Vegetation Retention Plan or similar consolidated with an Arboricultural Management Plan (CoT42) forming part of the Landscape and Ecological Management Plan. The commitments outlined above including mitigation and management measures relating to sensitive habitats (CoT43) and vegetation retention wherever practicable
	Fragmentation of habitats (resulting in a reduction in connectivity)						

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
							(CoT 42) will ensure that fragmentation impacts will be avoided or minimised. Therefore, any potential effects would not be significant.
LWS within 0.5 km of the MHPGC PEIR Red Line Boundary: Onshore: Hesledon Moor West LWS; South Murton Marsh LWS; Cowtons Pond LWS; Hawthorn Bridge Pumping Station LWS; and South Hetton Pond LWS	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna) Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	Negligible	Negligible/Not Significant	None of these sites are located within the ZOI for direct effects due to land take/land use change or fragmentation of habitats. Several of these sites are located adjacent to the MHPGC PEIR Red Line Boundary: Onshore, however embedded mitigation outlined in Section 3.8 will be applied during construction (such as the Outline CoCP (commitment CoT18), which will include an Outline Dust Management Plan (DPM CoT21), an Outline Construction Artificial Light Emissions Management Plan (CoT25), an Outline Landscape and Ecological Management Plan (CoT43) and a Vegetation Retention Plan or similar consolidated with an Arboricultural Management Plan (CoT42) forming part of the Landscape and Ecological Management Plan would minimise the risk of impacts to negligible. With regards to fragmentation of habitats outside the designated site such as hedgerows connecting to the wider landscape, the LWSs are situated in predominantly agricultural landscape where similar connecting habitats remain unaffected in the locality. Any indirect fragmentation effects would be localised, temporary and of short duration. Therefore, any potential effects would not be significant.
LWS within 0.5-2 km of the MHPGC PEIR Red Line Boundary: Onshore: Cold Hesledon Pond and Walkway LWS; Hazel Dene LWS; Duncombe Moor LWS; Murton Meadows LWS; Dawdon Dene LWS; Pesspool Lane Ponds LWS; Dalton Dene LWS; Murton Grassland LWS; Murton Bridge Carr LWS; Tuthill Quarry LWS; Eppleton Railway LWS; Elemore Vale LWS; and Elemore Woods (1) and (2) LWS	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna) Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	No change	No effect	These sites are outside the ZOI with no pathway for significant effects.
Ancient woodland/ ancient replanted woodland and veteran trees	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna) Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	No change	No effect	No ancient woodland, ancient replanted woodland or veteran trees were identified within the Study Area and the receptor is considered absent, therefore there would be no effect.
f2e – Reedbeds (HPI)	Permanent or temporary land take/land use change (resulting in	Within the MHPGC PEIR Red Line	c, o&m, d	County/Medium	Receptor is within the ZOI and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.6.		

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
	habitat loss or degradation and/or loss of fauna)	Boundary: Onshore					
	Fragmentation of habitats (resulting in a reduction in connectivity)						
u1d 80 – Suburban mosaic of developed and natural surface (Open mosaic habitats on previously developed land HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium			Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.7 .
	Fragmentation of habitats (resulting in a reduction in connectivity)						
r1g 40 – Other standing water (Ponds; priority) r1g 41 – Other standing water (Ponds; non-priority)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium			Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.8 .
	Fragmentation of habitats (resulting in a reduction in connectivity)						
h2a – Native hedgerow HPI h2a 11 – Native hedgerow (Hedgerow with trees HPI) h2a6 – Other native hedgerow HPI h2a6 11 – Other native hedgerow (Hedgerow with trees) (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium			Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.9 .
	Fragmentation of habitats (resulting in a reduction in connectivity)						
Priority and non-priority coastal habitats: s2a – Maritime cliff and slopes; t2g5 – Saline lagoons (H1150); t1f – Other littoral rock; and t2h – Beach	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	No change	No effect	While these habitats are located within the Zol, impact pathways will be avoided through embedded mitigation set out in Section 3.8 . During construction, trenchless crossing methods will be undertaken under the Durham Coast SSSI and SAC area with exit pits at least 100m seaward of the eastern boundary of the SSSI and SAC (CoT13) and thus drilling will be under these coastal habitats. In addition, pollution control measures are included within the Outline CoCP (CoT18), including an Outline Bentonite Breakout Plan Contingency (CoT47). Therefore, there will be no permanent or temporary loss/fragmentation of these habitats, or other impact pathways which could result in a significant effect.
	Fragmentation of habitats (resulting in a reduction in connectivity)						

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
Watercourses: r1 50 – Standing open water and canals (Ditch), r1g 50 – Other standing water (Ditch), r2b – Other rivers and streams	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna) Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium		Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.10 .	
Other non-priority habitats with biodiversity benefit: g2c – Other calcareous grassland g3c – Other neutral grassland	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna) Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low		Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.11 and 3.9.12 .	
Other non-priority habitats with biodiversity benefit: w1f – Lowland mixed deciduous woodland w1f7 – Other lowland mixed deciduous woodland w1g and w1g 33 – Other broadleaved woodland (including Line of trees) w1h – Other woodland; mixed w1h5 – Other woodland, mixed, mainly broadleaved	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna) Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low		Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.13 .	
Other non-priority habitats with biodiversity benefit: f2 – Fen, marsh and swamp f2f – Other wetlands	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna) Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low		Receptor is within the Zol and direct habitat loss or degradation could potentially occur. Further detailed assessment is presented in Section 3.9.14 .	
Badger	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Up to 30m from the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low		Receptor is within Zol: surveys have identified badger setts and other evidence of activity throughout the MHPGC PEIR Red Line Boundary: Onshore, and suitable habitat for badgers is widespread throughout the MHPGC PEIR Red Line Boundary: Onshore. Further detailed assessment is presented in Section 3.9.15 .	

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
	Fragmentation of habitats (resulting in a reduction in connectivity)						
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)						
Bats – foraging and commuting: common pipistrelle, soprano pipistrelle, Daubenton's bat, noctule bat and brown long-eared bat	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	Receptor is within Zol: desk study data and bat surveys undertaken to date have identified species of bats (common pipistrelle, soprano pipistrelle, Daubenton's bat, noctule bat and brown long-eared bat) using habitats within the Bat Survey Area for foraging and commuting activities. Bats and the habitat they utilise is within the Zol for these impacts and associated potential effects. Further detailed assessment is presented in Section 3.9.16 .		
	Fragmentation of habitats (resulting in a reduction in connectivity)						
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)						
Bats – roosting: common pipistrelle, soprano pipistrelle, Daubenton's bat, noctule bat and brown long-eared bat	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Up to 4km from the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium	Receptor is within Zol: bat surveys undertaken to date have identified no roosts within the MHPGC PEIR Red Line Boundary: Onshore. However, surveys are on-going and the desk study identified roosting activity by common pipistrelle, soprano pipistrelle, Daubenton's bat, noctule bat and brown long-eared bat within 10km from the MHPGC PEIR Red Line Boundary: Onshore. The Zol is set at 4km to reflect the maximum Core Sustenance Zone for the roosting bat species identified (Collins, 2023), as roosting bats can be dependent on distant areas of key habitat. The Zol accounts for the potential (albeit very low) for impacts on associated foraging/commuting activities, to affect the viability of a bat roost located at such a distance from the MHPGC PEIR Red Line Boundary: Onshore. Further detailed assessment is presented in Section 3.9.17 .		
	Fragmentation of habitats (resulting in a reduction in connectivity)						
Breeding birds: Schedule 1 species	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Up to National/High	Negligible	Up to minor/Not Significant	The 2025 breeding bird surveys undertaken did not identify any territories or signs of breeding by any Schedule 1 species, although it should be noted that at the time of writing, 2026 breeding season data are yet to be fully analysed. The following embedded mitigation will serve to protect Schedule 1 breeding birds and minimise any impacts upon them should they be breeding within the Breeding Bird Study Area avoidance measures; time works to avoid the bird breeding season (CoT11), construction site lighting will be positioned and directed to avoid unnecessary illumination to sensitive ecological receptors and covered within the Outline Construction Artificial Light Emissions Management Plan (CoT25); Vegetation Retention Plans (CoT42); good practice measures within the (CoT43) Landscape and Ecological Management Plan. The impact would therefore be negligible.
	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	MHPGC PEIR Red Line Boundary: Onshore					
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore					

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
Breeding Birds	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 650m from the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low	Receptor is within the Zol and there is potential for disturbance and displacement effects and loss of nesting habitat resulting from MHPGC Project activities. Desk study data and field surveys undertaken to date have identified priority breeding species including linnet, skylark, yellowhammer, meadow pipit and song thrush. Further detailed assessment is presented in Section 3.9.22 .		
	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	MHPGC PEIR Red Line Boundary: Onshore					
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low	Negligible	Negligible/Not Significant	The fragmentation of habitats is scoped out given the temporary nature of the construction works and the mobility of this receptor. Additionally, embedded mitigation outlined in Section 3.8 , such as commitments CoT42 and CoT43 which set out measures including minimising vegetation clearance, measures relating to protected or notable species and/or sensitive habitats, mitigation planting and the details of management and maintenance of that planting, and Biodiversity Gain (CoT57) will ensure that permanent loss and fragmentation of habitats supporting this receptor is minimised and avoided where possible, such that the effect would be negligible.
Wintering, intertidal and passage birds	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 650m from the MHPGC PEIR Red Line Boundary	c, o&m, d	Local/Low	Receptor is within the Zol and there is potential for disturbance and displacement effects and loss of habitat resulting from MHPGC Project activities. Desk study data and field surveys undertaken to date have identified priority species including linnet, starling, lapwing, common gull and herring gull. Further detailed assessment is presented in Section 3.9.21 .		
	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary					
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the MHPGC PEIR Red Line Boundary	c, o&m, d	Local/Low	Negligible	Negligible/Not Significant	The fragmentation of habitats is scoped out given the temporary nature of the construction works and the mobility of this receptor. Additionally, embedded mitigation outlined in Section 3.8 , such as commitments CoT42 and CoT43 which set out measures including minimising vegetation clearance, measures relating to protected or notable species and/or sensitive habitats, mitigation planting and the details of management and maintenance of that planting, and Biodiversity Gain (CoT57) will ensure that permanent loss and fragmentation of habitats supporting this receptor is

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
							minimised and avoided where possible, such that the effect would be negligible.
Freshwater fish	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Up to National/High			No fish survey data were returned from the Freshwater Fish, Macroinvertebrate and Macrophyte Study Area. However, aquatic habitats identified within the MHPGC PEIR Red Line Boundary: Onshore, including South Hetton Burn and wet ponds, may support a general assemblage of freshwater fish. Some freshwater species are afforded legal protection, and all fish are considered of sufficient importance that a potential significant effect may occur from permanent or temporary land take/land use change, fragmentation of habitats and increased noise, vibration, light and movement levels. As such, fish have been scoped in for further assessment. Further detailed assessment is presented in Section 3.9.20 .
	Fragmentation of habitats (resulting in a reduction in connectivity and obstruction of migratory pathway)						
	Increased noise, vibration and light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the MHPGC PEIR Red Line Boundary: Onshore					
Great crested newt	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Up to 250m from the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium			Receptor is within Zol: desk study and surveys have identified suitable terrestrial habitat is present throughout the Zol however, to date, this species has not been confirmed as present. Twelve of 31 accessible waterbodies have been subject to eDNA surveys, which returned negative results indicating likely absence. However, 19 suitable waterbodies require further consideration to determine presence/likely absence. Therefore, this receptor has been included based on a precautionary approach at this stage and will be reviewed following completion of baseline surveys. Further detailed assessment is presented in Section 3.9.18 .
	Fragmentation of habitats (resulting in a reduction in connectivity)						
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	N/A				N/A	N/A
Otter	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	County/Medium			Receptor is within Zol: desk study data and otter surveys undertaken have identified suitable habitat and otter field signs within the MHPGC PEIR Red Line Boundary: Onshore. Further detailed assessment is presented in Section 3.9.19 .
	Fragmentation of habitats (resulting in a reduction in connectivity)						

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)						
Reptiles	Habitat loss, fragmentation, disturbance	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low	Negligible	Negligible/Not Significant	The desk study identified two records of reptiles within the Reptile Study Area. Informed by the results of the desk study and UKHab survey, reptile presence/likely absence surveys were undertaken during September-October 2025 with suitable habitats in the Reptile Survey Area. No reptiles were recorded during the surveys. Nevertheless, where suitable reptile habitat occurs, embedded mitigation outlined in Section 3.8 includes mitigation and management measures relevant to terrestrial ecology (see commitment CoT43) that would minimise the risk to reptiles in the unlikely event that individuals or low numbers occur within the MHPGC PEIR Red Line Boundary: Onshore. The impact would therefore be negligible.
White-clawed crayfish (if present)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	National/High	No records of white-clawed crayfish were returned for the desk study within the White-clawed Crayfish Study Area. Based on the aquatic habitats currently identified within the MHPGC PEIR Red Line Boundary: Onshore, the presence of white-clawed crayfish is considered unlikely. However, as aquatic surveys, including white-clawed crayfish eDNA samples, are ongoing and the results were not available at the time of PEIR preparation, white-clawed crayfish has been retained as a receptor on a precautionary basis. This species is afforded legal protection and is considered of sufficient importance that a potential significant effect may occur (if present) from permanent or temporary land take/land use change, fragmentation of habitats and increased noise, vibration, light and movement levels. As such, white-clawed crayfish have been scoped in for further assessment. This will, however, be kept under review as survey results become available. Further detailed assessment is presented in Section 3.9.23 .		
	Fragmentation of habitats (resulting in a reduction in connectivity and obstruction of migratory pathway)						
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)						
Water vole	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Up to County/Medium	The desk study identified one record of water vole within the Water Vole Study Area. Short sections of various watercourses bisect the Water Vole Survey Area, providing suitable habitat for commuting, foraging and burrowing. No water vole field signs have been recorded to date, but surveys are on-going during 2026. Therefore, this receptor has been included based on a precautionary approach at this stage and will be reviewed following completion of baseline surveys. Further detailed assessment is presented in Section 3.9.19 .		
	Fragmentation of habitats (resulting in a reduction in connectivity)						
	Increased noise, vibration, light and movement levels						

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
	(resulting in disturbance and/or displacement)						
SPI and conservation-notable terrestrial vertebrates (e.g. brown hare, common toad, hedgehog)	Habitat loss and mortality risk	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low	Negligible	Negligible/Not Significant	Polecat and harvest mouse are excluded from the assessment due to the MHPGC PEIR Red Line Boundary: Onshore being outside the commonly recorded ranges of these species in England ² , and no records identified during the desk study. The desk study identified 41 records of brown hare (9), common toad (3), and hedgehog (29), all are conservation-notable vertebrate species within 2km of the MHPGC PEIR Red Line Boundary: Onshore. These species are widespread and numerous, although there have been large declines in the national population. Although the Project will result in a loss of habitat for these species, the reduction will be minimal, affect a small area of habitat likely occupied in the locality, and habitat loss will mostly be temporary. Embedded mitigation outlined in Section 3.8 will ensure that where practicable, the siting of the temporary and permanent footprint of the MHPGC will avoid sensitive ecological receptors during the site selection process (CoT17) . Mitigation and management measures during construction will be implemented to protect sensitive habitats (see commitment CoT43), and the risk of injury/death to these species is minimised through the appointment of an ECoW where required (see commitment CoT43). Temporary working areas would be reinstated post construction (CoT29), while BNG will be provided as a separate enhancement (CoT57). The effect would therefore be negligible.
SPI and other conservation-notable terrestrial invertebrate species	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low	The desk study identified records of 23 SPI and conservation-notable terrestrial invertebrate species within 2km of the MHPGC PEIR Red Line Boundary: Onshore. Terrestrial invertebrate surveys are on-going at time of writing during July – September 2026 at targeted locations with potential to support significant assemblages of terrestrial invertebrate species which could be directly affected. Therefore, this receptor has been included based on a precautionary approach at this stage, and will be reviewed following completion of baseline surveys. Further detailed assessment is presented in Section 3.9.24 .		
	Fragmentation of habitats (resulting in a reduction in connectivity)						
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low	N/A	N/A	SPI and other conservation-notable terrestrial invertebrate species are likely to be concentrated to higher value receptors and not widely distributed across the scheme. In addition, embedded mitigation outlined in Section 3.8 includes mitigation and management measures relevant to terrestrial ecology (see commitments CoT13 and 18) that would minimise the risk to terrestrial invertebrates within the MHPGC PEIR Red Line Boundary: Onshore. Therefore, no significant impacts are considered likely. .
SPI and other conservation-notable aquatic	Permanent or temporary land take/land use change (resulting in habitat loss or	Within the MHPGC PEIR Red Line	c, o&m, d	Up to Regional/Medium	No records of SPI or other conservation-notable aquatic macroinvertebrates were returned for the desk study within the Freshwater Fish, Macroinvertebrate and Macrophyte Study Area. Based on the aquatic habitats currently identified within the MHPGC PEIR Red Line Boundary: Onshore, the presence of SPI and other conservation-notable macroinvertebrates is considered unlikely. However, as aquatic surveys, are ongoing at		

Receptor	Impact (and Potential Effect)	ZOI	Project stage	Importance/Sensitivity	Magnitude	Impact/ Significance	Justification
macroinvertebrates (if present)	degradation and/or loss of flora)	Boundary: Onshore			time of writing and the results were not available at the time of PEIR preparation, SPI and other conservation-notable macroinvertebrates have been retained as a receptor on a precautionary basis. This will, however, be kept under review as survey results become available. Further detailed assessment is presented in Section 3.9.25 .		
	Fragmentation of habitats (resulting in a reduction in connectivity)						
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Up to Regional/Medium	Negligible	Negligible/Not Significant	SPI and other conservation-notable aquatic invertebrate species are generally considered to have limited susceptibility to disturbance and displacement arising from temporary increases in noise, vibration, light and human activity. Although some behavioural responses have been reported, evidence for population-level effects is limited (Sole <i>et al.</i> , 2023), and macroinvertebrate populations are primarily influenced by habitat quality, hydrology and water quality (Lee <i>et al.</i> , 2025). Likely significant disturbance or displacement effects are therefore not anticipated.
SPI and other conservation-notable aquatic macrophytes (if present)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of flora)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Up to Regional/Medium	No records of SPI or other conservation-notable aquatic macrophytes were returned for the desk study within the Freshwater Fish, Macroinvertebrate and Macrophyte Study Area. Based on the aquatic habitats currently identified within the MHPGC PEIR Red Line Boundary: Onshore, the presence of SPI and other conservation-notable macrophytes is considered unlikely. However, as aquatic surveys, are ongoing at time of writing and the results were not available at the time of PEIR preparation, SPI and other conservation-notable macrophytes have been retained as a receptor on a precautionary basis. This will, however, be kept under review as survey results become available. Further detailed assessment is presented in Section 3.9.25 .		
	Fragmentation of habitats (resulting in a reduction in connectivity)						
SPI and other protected/conservation-notable terrestrial plant species	Permanent or temporary land take/land use change (resulting in habitat loss or degradation)	Within the MHPGC PEIR Red Line Boundary: Onshore	c, o&m, d	Local/Low	Negligible	Negligible/Not Significant	The desk study identified 28 records relating to protected/conservation-notable plant species within 2km of the MHPGC PEIR Red Line Boundary: Onshore. Detailed botanical surveys (National Vegetation Classification) were undertaken during 2025 and 2026 at targeted locations within Hesledon Moor East and Durham Coast SSSIs, as well as wetland habitats within the MHPGC PEIR Red Line Boundary: Onshore, due to their potential to support high floristic diversity, as well as areas of priority habitats. However, embedded mitigation such as CoT17 (avoidance of sensitive ecological and environmental receptors during the site selection process, where practicable), Vegetation Retention Plans (CoT42) and management and mitigation measures within the Landscape and Ecological Management Plan (CoT43); will ensure these habitats are protected and retained wherever practicable as part of the MHPGC Project, such that the effect would be negligible.

3.9.3 Northumbria Coast SPA and Ramsar: all features

Receptor Sensitivity

- 3.9.3.1 The Northumbria Coast SPA and Ramsar are of International importance. In accordance with **Table 3-20**, it is categorised as Very High sensitivity.

Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

Construction

- 3.9.3.2 The Northumbria Coast SPA and Ramsar sites are designated for migratory turnstone and purple sandpiper; and breeding little tern and Artic tern.
- 3.9.3.3 The Northumbria Coast SPA and Ramsar is located approximately 1.5km north of the MHPGC Project. Therefore, construction activities associated with the coastal habitats such as landfall have the potential to result in disturbance and/or displacement due to increased noise, vibration, light and movement levels of qualifying features should significant numbers of species be present within the vicinity of the construction works.
- 3.9.3.4 Intertidal bird surveys were undertaken during April 2023 to March 2024 inclusive and October 2025 to September 2026 (inclusive; ongoing at the time of writing). Turnstone was recorded during the 2023/2024 surveys but was not recorded during the 2025/26 surveys. No other species noted on the SPA or Ramsar designation has been recorded during intertidal bird surveys to date.
- 3.9.3.5 Wintering and passage bird surveys were undertaken between October 2025 and March 2026 inclusive. No species noted on the SPA or Ramsar designation has been recorded during wintering and passage bird surveys to date. There were no records of qualifying species away from coastal habitats.
- 3.9.3.6 Surveys undertaken to date indicate that the intertidal habitat is subject to a relatively high level of existing anthropogenic activity, including regular recreational use of the beach and adjacent coastal areas. Consequently, bird species utilising the intertidal zone are routinely exposed to visual and auditory stimuli associated with pedestrians, dog walkers and other beach users. This existing pattern of disturbance is considered likely to have resulted in a degree of habituation by birds regularly using the area, such that responses to short-term, intermittent sources of disturbance are expected to be less pronounced than in more remote or undisturbed coastal locations. Notwithstanding this baseline level of habituation, the assessment adopts a precautionary approach in recognising that construction activities have the potential to generate temporary increases in noise, visual presence and human activity within the vicinity of the coastal environment. However, noting the 1.5km separation distance between the MHPGC Project PEIR Red Line Boundary and the Northumbria SPA and Ramsar, the construction-related disturbance would be localised, temporary and restricted to a defined period, with effects reducing rapidly with increasing distance from the works.
- 3.9.3.7 The embedded mitigation (see Error! Reference source not found.) that would be implemented include; CoT17 siting of the MHPGC Project footprint to avoid statutory and non-statutory environmental receptors; CoT18 Outline Code of Construction Practice; CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT43 Outline Landscape and Ecological Management Plan and CoT13 Trenchless techniques to cross the Durham Coast SSSI and SAC. These measures would minimise disturbance on species from lighting, noise and visual disturbances during construction.
- 3.9.3.8 Furthermore, the embedded mitigation measures have been designed to minimise the potential for disturbance pathways to arise and to reduce the magnitude, duration and spatial extent of any such effects. Considering the existing disturbance regime within the receiving environment, the temporary nature of the construction works, and the implementation of embedded mitigation, any behavioural responses by birds are anticipated to be limited and short-term in nature. The potential for construction disturbance to result in a measurable change in habitat utilisation, distribution, or

displacement of birds within the wider coastal area, including qualifying species associated with the Northumbria Coast SPA, is therefore considered to be negligible in EIA terms.

Significance of effect

- 3.9.3.9 Overall, it is considered that the receptor sensitivity is **International/Very High** and the magnitude of impact of increased noise, vibration, light and movement levels associated with the Northumbria Coast SPA and Ramsar is **Negligible**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.3.10 Operation and Maintenance activities associated with coastal habitats have the potential to result in disturbance and/or displacement due to increased noise, vibration, light and movement levels of qualifying features.
- 3.9.3.11 During the operational phase, there will be minimal routine inspection and maintenance activities associated with the TJB and onshore export cable corridor.
- 3.9.3.12 Quarterly routine vessel movements associated with the offshore export cable repair and reburial have the potential to cause minor disturbance to SPA birds using the intertidal and onshore habitats.
- 3.9.3.13 Operational access to onshore/intertidal coastal habitats is not expected to be required and only in exceptional circumstances, such as emergency fault investigation or repair. In addition, noting the 1.5km separation distance between the MHPGC Project PEIR Red Line Boundary: Onshore and the Northumbria SPA and Ramsar and the low number of SPA species recorded in surveys to date, the limited operation and maintenance activities within coastal habitats (onshore, intertidal or offshore) which have the potential to support SPA bird species and the frequency of management activity during operation being negligible, no substantive disturbance of habitats or bird species associated with the Northumbria Coast SPA and Ramsar site is anticipated. The potential for operational effects on the qualifying features of the SPA is therefore considered to be negligible.

Significance of effect

- 3.9.3.14 Overall, it is considered that the receptor sensitivity is **International/Very High** and the magnitude of impact of increased noise, vibration, light and movement levels associated with the Northumbria Coast SPA and Ramsar is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.3.15 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA term. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.4 Durham Coast SAC: all features / Durham Coast SSSI: terrestrial features

Receptor Sensitivity

- 3.9.4.1 The Durham Coast SAC/SSSI is of International to National importance. In accordance with **Table 3-20** it is categorised as Very High to High sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.4.2 The Durham Coast is designated for vegetated sea cliffs with a mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub and the SSSI is designated for paramaritime magnesian limestone vegetation, species-rich dune system and entomological richness. The Durham Coast SAC/SSSI bisects the MHPGC Project PEIR Red Line Boundary, along the eastern edge of the MHPGC PEIR Red Line Boundary: Onshore. Therefore, construction activities within the onshore and intertidal coastal habitats associated with these sites, have the potential to result in temporary and/or permanent habitat loss affecting the Durham Coast

SAC and SSSI, including potential fragmentation of qualifying features, resulting in a reduction in connectivity.

- 3.9.4.3 The use of trenchless techniques to install the offshore export cables under the Durham Coast SSSI and SAC means that the cables will pass beneath these habitats. The exit pits will be situated at least 100m seaward from the eastern boundary of the SAC/SSSI (CoT13). The entry pits associated with the trenchless technologies' installation would be located outside of the western boundary of the SAC/SSSI, above the cliffs and to the west of the Durham Coast Line railway, predominantly within cropland and modified grassland.
- 3.9.4.4 Associated pollution control measures will be included within the Outline Code of Construction Practice (CoT18), including an Outline Bentonite Breakout Plan (CoT47). Additionally, there would be an Outline Landscape and Ecological Management Plan (CoT43) that would include ecological mitigation measures to protect sensitive receptors and appointment of an Ecological Clerk of Works where required.
- 3.9.4.5 Therefore, there will be no permanent or temporary loss or fragmentation of habitats within or adjoining the Durham Coast SAC/SSSI that would affect the designated habitat and entomological features.

Significance of effect

- 3.9.4.6 Overall, it is considered that the receptor sensitivity is **International to National/Very High to High** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with Durham Coast SAC/SSSI is **Negligible**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.4.7 Operation and Maintenance activities associated with coastal habitats have the potential to result in temporary and/or permanent habitat loss affecting the Durham Coast SAC and SSSI, including potential fragmentation of qualifying features, resulting in a reduction in connectivity.
- 3.9.4.8 Under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change or operational activities that will impact the Durham Coast SAC/SSSI and associated designated features. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

Overall, it is considered that the receptor sensitivity is **International to National/Very High to High** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with Durham Coast SAC/SSSI is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.4.9 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.5 Durham Coast SSSI: ornithology features

Receptor Sensitivity

- 3.9.5.1 The Durham Coast SSSI is of National importance. In accordance with **Table 3-20**, it is categorised as High sensitivity.

Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

Construction

- 3.9.5.2 The Durham Coast is designated for its ornithological features including nationally important populations of sanderling; wintering purple sandpiper, turnstone and knot; and breeding little tern, kittiwake, fulmar and cormorant. The Durham Coast SSSI is partly within the MHPGC PEIR Red Line Boundary. Therefore, construction activities associated with the coastal habitats such as landfall have the potential to result in disturbance and/or displacement due to increased noise, vibration, light and movement levels of qualifying features.
- 3.9.5.3 In terms of species recorded during intertidal/wintering/passage surveys, turnstone and sanderling were recorded during the 2024/2024 surveys but were not recorded during the 2025/26 surveys. No other species on the Durham Coast SSSI designation have been noted during intertidal/wintering/passage surveys to date.
- 3.9.5.4 In terms of birds recorded during the breeding season, 2025 surveys recorded 25 pairs of fulmar and two pairs of kittiwake apparently breeding on cliff habitat. There were no records of Durham Coast SSSI qualifying species away from coastal habitats.
- 3.9.5.5 Surveys undertaken to date indicate that the intertidal habitat is subject to a relatively high level of existing anthropogenic activity, including regular recreational use of the beach and adjacent coastal areas. Consequently, bird species utilising the intertidal zone are routinely exposed to visual and auditory stimuli associated with pedestrians, dog walkers and other beach users. This existing pattern of disturbance is considered likely to have resulted in a degree of habituation by birds regularly using the area, such that responses to short-term, intermittent sources of disturbance are expected to be less pronounced than in more remote or undisturbed coastal locations. Notwithstanding this baseline level of habituation, the assessment adopts a precautionary approach in recognising that construction activities have the potential to generate temporary increases in noise, visual presence and human activity within the vicinity of the coastal environment. However, construction-related disturbance would be localised, temporary and restricted to a defined period, with effects reducing rapidly with increasing distance from the works. Furthermore, the embedded mitigation measures have been designed to minimise the potential for disturbance pathways to arise and to reduce the magnitude, duration and spatial extent of any such effects. Considering the existing disturbance regime within the receiving environment, the temporary nature of the construction works, and the implementation of embedded mitigation, any behavioural responses by birds are anticipated to be limited and short-term in nature. The potential for construction disturbance to result in a measurable change in habitat utilisation, distribution, or displacement of birds within the wider coastal area, including qualifying species associated with the Durham Coast SSSI, is therefore considered to be low.
- 3.9.5.6 The embedded mitigation (see Error! Reference source not found. Error! Reference source not found.) that would be implemented include CoT17 siting of the MHPGC Project footprint to avoid direct impacts to statutory and non-statutory environmental receptors where practicable ; CoT18 Code of Construction Practice; CoT25 a sensitive lighting strategy including an Outline Construction Artificial Light Emissions Management Plan; CoT43 Outline Landscape and Ecological Management Plan and CoT13 Trenchless techniques to be used for the offshore export cables under the Durham Coast SSSI and SAC. These measures would minimise disturbance on species from lighting, noise and visual disturbances during construction.

Significance of effect

- 3.9.5.7 Overall, it is considered that the receptor sensitivity is **National/High** and the magnitude of impact of increased noise, vibration, light and movement levels associated with the Durham Coast SSSI: ornithology features is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.5.8 Operation and Maintenance activities associated with coastal habitats have the potential to result in disturbance and/or displacement due to increased noise, vibration, light and movement levels of qualifying features.

- 3.9.5.9 Operation and maintenance activities within coastal habitats within the MHPGC Project PEIR Red Line Boundary, associated with the MHPGC Project will constitute quarterly routine vessel movements and an annual onshore inspection of monitoring box at the TJB.
- 3.9.5.10 Once construction has been completed and the land reinstated, operational access to coastal habitats will not be required other than as outlined above or in exceptional circumstances, such as emergency fault investigation or repair. Consequently, the frequency of management activity during operation will be negligible and no routine disturbance of habitats or bird species associated with the Durham Coast SSSI is anticipated. Given the absence of regular operational works, vehicle movements, maintenance personnel, or other recurring activities within coastal habitats (onshore or intertidal), the potential for operational effects on the qualifying features of the SSSI is considered to be negligible.

Significance of effect

- 3.9.5.11 Overall, it is considered that the receptor sensitivity is **National/High** and the magnitude of impact of increased noise, vibration, light and movement levels associated with the Durham Coast SSSI: ornithology features is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.5.12 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.6 f2e – Reedbeds (HPI)

Receptor Sensitivity

- 3.9.6.1 Reedbeds are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.6.2 Four small parcels of reedbed habitat are present within the MHPGC PEIR Red Line Boundary: Onshore, totalling approximately 1.5ha. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss affecting reedbeds, including potential fragmentation of reedbed, resulting in a reduction in connectivity.
- 3.9.6.3 Where practicable, sensitive ecological receptors would be avoided during the site selection process for the MHPGC Project (CoT17). Nevertheless, there is potential for temporary loss of a small proportion of the habitat present during construction of the onshore export and AC connection cable corridor and associated infrastructure such as compounds and access routes. The extent of potential temporary habitat loss will be quantified in the ES. If excavations impact part of a reedbed habitat parcel, it is assumed that the entire parcel could be lost or degraded due to the potential for hydrological changes caused by excavations affecting surface and sub-surface flow pathways. Temporarily impacted reedbed would however be reinstated (CoT43) to pre-existing condition as far as reasonably practical following construction. It is expected that wetland habitat including reedbed could not be reinstated above cables, however, would be reinstated to pre-existing condition as far as reasonably practical within proximity to their original location.
- 3.9.6.4 Embedded mitigation (see **Table 3-19**) that would be implemented, which would protect reedbed (HPI), includes: CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 Landscape and Ecological Management Plan).

Significance of effect

- 3.9.6.5 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with reedbed (HPI) is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.6.6 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect reedbed (HPI) habitat, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

- 3.9.6.7 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with reedbed (HPI) is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.6.8 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.
- 3.9.6.9 The requirement for additional mitigation measures to offset permanent loss of HPI will be determined once the project design has been defined, and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.

3.9.7 u1d80 – Suburban mosaic of developed and natural surface (Open mosaic habitats on previously developed land) (HPI)

Receptor Sensitivity

- 3.9.7.1 Potential open mosaic habitats on previously developed land (HPI) are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.7.2 One small parcel of 0.42ha of potential open mosaic habitats on previously developed land (HPI) is located in the west of the MHPGC PEIR Red Line Boundary: Onshore, within the Green Onshore LSS option Area. Therefore, construction activities associated with Green Onshore LSS option Area, have the potential to result in temporary and/or permanent habitat loss affecting potential open mosaic habitats on previously developed land (HPI), including potential fragmentation of the habitat, resulting in a reduction in connectivity.
- 3.9.7.3 While the siting of the MHPGC Project would avoid sensitive ecological receptors where practicable (CoT17), the MHPGC Project could result in permanent loss of the full 0.42ha parcel if the Green onshore LSS Option Area is selected, or potential temporary loss of the full parcel if the Blue onshore LSS Option Area is selected due to construction of the AC connection cable and associated infrastructure such as compounds and access routes. In both instances, fragmentation effects would be limited as the affected parcel is small and isolated. The temporary land take and fragmentation effects would last for a period of up to 2 years before habitat is reinstated like-for-like.
- 3.9.7.4 Embedded mitigation (see Error! Reference source not found.) that would be implemented, which would protect open mosaic habitats on previously developed land (HPI), includes: CoT18 (Outline

CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 Landscape and Ecological Management Plan).

Significance of effect

- 3.9.7.5 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with open mosaic habitats on previously developed land (HPI) is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.7.6 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect potential open mosaic habitats on previously developed land (HPI), and operational activities are not expected to have an adverse impact this habitat type. Any unplanned intrusive activities (e.g. emergency repairs) would which require that relevant biodiversity surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

- 3.9.7.7 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with open mosaic habitats on previously developed land (HPI) is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.7.8 The requirement for additional mitigation measures to offset permanent loss of HPI will be determined once the project design has been defined, and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.
- 3.9.7.9 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.8 r1g 40 – Other standing water (Ponds; priority habitat) (HPI) / r1g 41 – Other standing water (Ponds; non-priority habitat)

Receptor Sensitivity

- 3.9.8.1 Ponds are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.8.2 Several ponds and ephemeral water bodies are present within the MHPGC PEIR Red Line Boundary: Onshore, and may be impacted during construction. Therefore, construction activities associated with ponds identified within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss affecting ponds, including potential fragmentation of them, resulting in a reduction in connectivity.
- 3.9.8.3 While the siting of the MHPGC Project would avoid sensitive habitats where practicable (CoT17), there is a risk that ponds and ephemeral water bodies could be entirely or partially impacted. The extent of potential temporary habitat loss will be quantified in the ES. If excavations impact part of a pond or ephemeral water body, it is assumed that the entire feature could be lost or degraded due to the potential for hydrological changes caused by excavations affecting surface and sub-surface flow pathways. Temporarily impacted ponds and ephemeral waterbodies would however be reinstated (CoT43) to pre-existing condition as far as reasonably practical following construction. It is expected that wetland habitat including ponds and ephemeral waterbodies could not be reinstated

above cables, however, would be reinstated to pre-existing condition as far as reasonably practical within proximity to their original location.

- 3.9.8.4 Embedded mitigation (see Error! Reference source not found.) that would be implemented, which would protect these ponds (including HPI) or other standing open water receptors, includes: CoT17 (siting to avoid sensitive ecological receptors where practicable), CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 (Landscape and Ecological Management Plan), including retaining vegetation where practicable, protecting retained habitat, and maintaining mitigation planting.

Significance of effect

- 3.9.8.5 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with pond (HPI) is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.8.6 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect ponds (HPI), and operational activities are not expected to have an adverse impact this habitat type. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

- 3.9.8.7 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with pond (HPI) is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.8.8 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.
- 3.9.8.9 The requirement for additional mitigation measures to offset permanent loss of HPI will be determined once the project design has been defined, and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.

3.9.9 h2a – Native hedgerow (HPI) / h2a 11 – Native hedgerow (Hedgerow with trees) (HPI) / h2a6 – Other native hedgerow (HPI) / h2a6 11 – Other native hedgerow (Hedgerow with trees) (HPI)

Receptor Sensitivity

- 3.9.9.1 Hedgerows are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.9.2 Native hedgerows occur occasionally throughout the MHPGC PEIR Red Line Boundary: Onshore, mainly a boundary feature around agricultural fields, and the majority are species poor. Therefore, construction activities associated with the entire cable route, have the potential to result in temporary and/or permanent habitat loss affecting hedgerows, including potential fragmentation of them, resulting in a reduction in connectivity.

- 3.9.9.3 Approximately 840m of hedgerows/hedgerow with trees adjacent to the A19 road corridor would be retained due to the trenchless crossing of the A19 (see Commitment CoT51). Although sensitive ecological receptors would be avoided elsewhere through siting of the MHPGC Project where practicable (CoT17), there is potential for temporary loss of hedgerow (HPI) habitat types where hedgerows are crossed by the onshore export cable and AC connection cable corridors and associated infrastructure such as compounds and access routes. Crossing widths are expected to be up to 40m for the onshore export cable corridor and up to 100m for the AC connection cable corridor, with potentially longer sections of hedgerow removed at localised areas such as construction and trenchless crossing compounds. The extent of potential temporary habitat loss will be quantified in the ES. While the position of the construction footprint within the MHPGC PEIR Red Line Boundary: Onshore is yet to be determined, measures in the Outline Landscape and Ecological Management Plan (CoT43) include mitigation and management measures relating to protected or notable species and/or sensitive habitats and vegetation, including hedgerows will be mapped through a Vegetation Retention Plan (or similar) to inform construction activities with vegetation retained wherever practicable (CoT42) ; minimising fragmentation effects.
- 3.9.9.4 The effect of temporary land take and fragmentation during construction would occur for up to 2 years before habitat is reinstated, with incremental reinstatement occurring along the cable corridors reducing the duration of effects in those areas. Hedgerow (HPI) habitat would be reinstated like-for-like (or better), with the exception of hedgerows which bisect the cable corridors. In this instance, deep-rooted trees cannot be planted above the cable corridors, therefore hedgerows with trees which are removed would be reinstated with shallow rooted shrub species.
- 3.9.9.5 There would be approximately 190m of permanent loss of hedgerow (HPI) (classified as h2a6 11; Other native hedgerow: Hedgerow with trees) within the boundary of the Blue onshore LSS Option Area. The Green onshore LSS Option Area would avoid permanent loss or degradation as there is no hedgerow (HPI) habitat within its Zol.
- 3.9.9.6 Embedded mitigation (see Error! Reference source not found.) that would be implemented, which would protect hedgerow (HPI) habitat types, includes: CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 Landscape and Ecological Management Plan, including retaining vegetation where practicable, protecting retained habitat, and maintaining mitigation planting.

Significance of effect

- 3.9.9.7 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with hedgerow habitats (HPI) is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.9.8 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect hedgerows (HPI), and operational activities are not expected to have an adverse impact this habitat type. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant biodiversity surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

- 3.9.9.9 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with hedgerow habitats (HPI) is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.9.10 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

- 3.9.9.11 The requirement for additional mitigation measures to offset permanent loss of HPI will be determined once the project design has been defined, and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.

3.9.10 Watercourses: r1 50 – Standing open water and canals (Ditch) / r2b – Other rivers and streams

Receptor Sensitivity

- 3.9.10.1 Watercourses are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.10.2 Watercourses are assessed as being crossed using culverts for access tracks, with open-cut techniques used for cable installation. Therefore, construction activities such as open-cut construction and temporary watercourse crossings may result in temporary land take, habitat degradation and reduced connectivity. Potential effects on watercourses could include direct loss of aquatic or marginal habitat, alterations to runoff and flow characteristics, and changes in sediment inputs and suspended solids, with consequent effects on water quality and associated ecological communities, as well as potential fragmentation of them, resulting in a reduction in connectivity.
- 3.9.10.3 Any loss or degradation of watercourse habitat would be limited to small, localised areas where open-cut installation methods or temporary crossings are required. Siting of the MHPGC Project would avoid sensitive ecological receptors where practicable (CoT17) and temporarily affected watercourses would be reinstated to their pre-construction condition, as far as reasonably practicable, following completion of construction (CoT43). In addition, the Outline CoCP (CoT18) would include flood protection and control measures and pollution prevention and management, while the Landscape and Ecological Management Plan (CoT43) would provide further measures to protect watercourse habitats and associated aquatic flora and fauna.
- 3.9.10.4 Embedded mitigation (see **Table 3-19**) that would be implemented, which would protect watercourse habitat types, includes: CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 (Landscape and Ecological Management Plan), including retaining vegetation where practicable, protecting retained habitat, and maintaining mitigation planting).

Significance of effect

- 3.9.10.5 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with watercourses is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.10.6 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect watercourses, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

- 3.9.10.7 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with watercourses is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.10.8 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.11 Other non-priority habitats with biodiversity benefit: g2c – Other calcareous grassland

- 3.9.11.1 Other calcareous grassland is of Local importance. In accordance with **Table 3-20**, it is categorised as Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

- 3.9.11.2 Approximately 1ha of other calcareous grassland is present at the eastern edge of the MHPGC PEIR Red Line Boundary: Onshore, where calcareous flora has colonised previously disturbed ground and calcareous overburden close to Hawthorn Quarry. Therefore, construction activities associated with the landfall and trenchless drilling compounds have the potential to result in temporary and/or permanent habitat loss affecting other calcareous grassland, including potential fragmentation of the habitat, resulting in a reduction in connectivity.
- 3.9.11.3 This habitat would potentially be temporarily lost during construction. No permanent loss of other calcareous grassland is expected. Fragmentation effects would be limited as the area of affected habitat is located around the peripheries of more extensive areas of similar habitat that would be retained and protected by the embedded mitigation set out above. The temporary land take and fragmentation effects would last for a period of up to 2 years before habitat is reinstated to pre-existing condition as far as reasonably practicable.
- 3.9.11.4 Embedded mitigation (see **Table 3-19**) that would be implemented, which would protect other calcareous grassland habitat, includes: CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 Landscape and Ecological Management Plan, including retaining vegetation where practicable, protecting retained habitat, and maintaining mitigation planting).

Significance of effect

- 3.9.11.5 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority other calcareous grassland is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.11.6 Operation and maintenance activities are described in **Section 3.6.4**. Under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect other calcareous grassland habitat, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant biodiversity surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

- 3.9.11.7 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority other calcareous grassland is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.11.8 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.12 Other non-priority habitats with biodiversity benefit: g3c – Other neutral grassland;

- 3.9.12.1 Other neutral grassland is of Local importance. In accordance with **Table 3-20**, it is categorised as Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.12.2 Other neutral grassland is located throughout the MHPGC PEIR Red Line Boundary: Onshore. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss affecting other neutral grassland, including potential fragmentation of the habitat, resulting in a reduction in connectivity.
- 3.9.12.3 A large parcel of other neutral grassland is located within the east of the MHPGC PEIR Red Line Boundary; Onshore, between the Durham Coast SAC and the Durham Coast Line railway. This parcel would be avoided by the landfall trenchless crossing (see commitment CoT51) (as the trenchless drill entry point will be to the west of the railway), such that there would be no effect from land take or fragmentation.
- 3.9.12.4 Other large parcels of other neutral grassland are located around Jade Business Park and at the western extent of the MHPGC PEIR Red Line Boundary: Onshore close to Hawthorn Pit Substation. Construction using either the Green or Blue onshore LSS Option Areas is likely to result in temporary habitat loss of other neutral grassland, potentially affecting multiple parcels, along the onshore export cable and AC connection cable corridors and associated infrastructure such as compounds and access routes. The extent of potential temporary habitat loss will be quantified in the ES.
- 3.9.12.5 There is potential for a temporary fragmentation effect on other neutral grassland due to the potential temporary loss of several large and connected habitat parcels within the locality, where grassland habitat has become increasingly fragmented by surrounding recent developments. The temporary land take and fragmentation effects would last for a period of up to 2 years before habitat is reinstated to pre-existing condition as far as reasonably practicable.
- 3.9.12.6 There would be no permanent habitat loss or fragmentation associated with construction using the Blue onshore LSS Option Area. For construction using the Green onshore LSS Option Area, there would be permanent loss of up to 6.5ha within the footprint of the Green onshore LSS Option Area. There would be an increase in the magnitude of the fragmentation effect due to a larger proportion of the grassland habitat within the locality being affected, and permanently, and the retained areas of habitat being smaller and increasingly isolated by development.
- 3.9.12.7 Embedded mitigation (see Error! Reference source not found.) that would be implemented, which would protect other neutral grassland habitat, includes: CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 Landscape and Ecological Management Plan, including retaining vegetation where practicable, protecting retained habitat, and maintaining mitigation planting).

Significance of effect

- 3.9.12.8 Overall, it is considered that the receptor sensitivity is **Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority other neutral grassland is up to **Medium**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA.

Operation and Maintenance

- 3.9.12.9 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect other neutral grassland habitat, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant biodiversity surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

- 3.9.12.10 Overall, it is considered that the receptor sensitivity is Low and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority other neutral grassland is Negligible. Therefore, the effect during the operation and maintenance phase, is considered to be Negligible, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.12.11 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.
- 3.9.12.12 While the effect is not significant in EIA terms, the permanent loss of up to 6.5ha of other neutral grassland represents a net loss of biodiversity, and this would be offset through the BNG provision for the MHPGC Project (see **Section 3.5.7**).

3.9.13 Other non-priority habitats with biodiversity benefit: w1f – Lowland mixed deciduous woodland / w1f7 – Other lowland mixed deciduous woodland / w1g and w1g 33 – Other broadleaved woodland (including Line of trees) / w1h – Other woodland; mixed / w1h5 – Other woodland, mixed, mainly broadleaved

- 3.9.13.1 Non-priority woodland is of Local importance. In accordance with **Table 3-20**, it is categorised as Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

Construction

- 3.9.13.2 Woodland habitat mostly occurs within the western half of the MHPGC PEIR Red Line Boundary: Onshore, where it frequently occurs as linear habitat features and larger habitat parcels which are relatively well connected surrounding existing developments such as Jade Business Park and Hawthorn Pit Substation. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss affecting woodland, including potential fragmentation of the habitat, resulting in a reduction in connectivity.
- 3.9.13.3 Construction using either the Green or Blue onshore LSS Option Areas is likely to result in temporary habitat loss of these woodland habitat types, potentially affecting multiple parcels, along the onshore export cable and AC connection cable corridors and associated infrastructure such as compounds and access routes. The extent of potential temporary habitat loss will be quantified in the ES.
- 3.9.13.4 There is potential for a temporary fragmentation effect on woodland habitats due to the potential temporary loss of several large parcels and/or linear connective habitats, however due to the extent of woodland habitat within the west of the MHPGC PEIR Red Line Boundary: Onshore, and the expected width of the onshore export cable corridor (up to 40m) and the AC connection cable corridor (up to 100m), a large proportion of the habitat in the locality is likely to remain unaffected. The temporary land take and fragmentation effects would last for a period of up to 2 years before habitat is reinstated to pre-existing condition as far as reasonably practicable .
- 3.9.13.5 There would be no permanent habitat loss or fragmentation associated with construction using the Blue onshore LSS Option Area. For construction using the Green onshore LSS Option Area, there would be permanent loss of up to approximately 0.83ha of w1g other broadleaved woodland within the footprint of the Green onshore LSS Option Area. However, the permanent land take and fragmentation effects would be limited, affecting only small areas of habitat at the edge of larger parcels that will be retained, or reinstated (where temporary loss occurs), and remain well connected to other areas of woodland within and surrounding the MHPGC PEIR Red Line Boundary: Onshore.
- 3.9.13.6 Embedded mitigation (see Error! Reference source not found.) that would be implemented, which would protect these woodland habitats, includes: CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43

Landscape and Ecological Management Plan, including retaining vegetation where practicable, protecting retained habitat, and maintaining mitigation planting).

Significance of effect

- 3.9.13.7 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority woodland habitats is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.13.8 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect woodland habitat, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant biodiversity surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

- 3.9.13.9 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority woodland habitats is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.13.10 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.14 Other non-priority habitats with biodiversity benefit: f2 – Fen, marsh and swamp / f2f – Other wetlands

- 3.9.14.1 Non-priority wetlands are of Local importance. In accordance with **Table 3-20**, it is categorised as Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)

- 3.9.14.2 Two small, isolated parcels of these wetland habitat types, totalling less than 0.3ha are present close to Jade Business Park within the west of the MHPGC PEIR Red Line Boundary: Onshore. Therefore, construction activities in the west of the MHPGC Project, have the potential to result in temporary and/or permanent habitat loss affecting these wetland habitats, including potential fragmentation of reedbed, resulting in a reduction in connectivity.
- 3.9.14.3 No permanent loss of these wetland habitats is expected. Where practicable, sensitive ecological receptors would be avoided through siting of the MHPGC Project (CoT17). Nevertheless, there is potential for small areas of temporary habitat loss during construction. With regards to fragmentation of habitats, the habitats are already isolated from neighbouring parcels, and fragmentation effects would be localised and temporary. The temporary land take and fragmentation effects would last for a period of up to 2 years before habitat is reinstated to pre-existing condition as far as reasonably practicable.
- 3.9.14.4 Embedded mitigation (see Error! Reference source not found.) that would be implemented, which would protect fen and other wetland habitats, include: CoT18 (Outline CoCP, including pollution prevention and air quality and dust management); CoT42 (Vegetation Retention Plan); and CoT43 Landscape and Ecological Management Plan, including retaining vegetation where practicable, protecting retained habitat, and maintaining mitigation planting).

Significance of effect

- 3.9.14.5 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority wetland habitats is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.14.6 Operation and maintenance activities, under normal operation of the MHPGC Project, are not expected to require permanent or temporary land take/land use change, that will affect these non-priority wetland habitats, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant biodiversity surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

Significance of effect

- 3.9.14.7 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with non-priority wetland habitats is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.14.8 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.15 Badger

- 3.9.15.1 Badger are of Local importance. In accordance with **Table 3-20**, it is categorised as Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

Construction

- 3.9.15.2 In total seven setts have been recorded within the Badger Survey Area, consisting of one active outlier and six disused outliers. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of fauna affecting badger and their setts, resulting in potential fragmentation of badger populations, resulting in a reduction in connectivity; and disturbance and/or displacement resulting from increased noise, vibration, light and movement levels.
- 3.9.15.3 Where practicable, sensitive ecological receptors would be avoided through siting of the MHPGC Project (CoT17). As no setts are likely to be impacted at present, there is no need to obtain specific licences from Natural England. However, should the route result in direct impacts on any of the setts identified, specific mitigation in the form of a licence from Natural England to derogate potential harm/disturbance to badgers and damage/destruction or obstruction of setts would be required. The licence method statement would include mitigation for excluding badgers and closing impacted setts. This licence would be obtained where required for the MHPGC Project to proceed while avoiding contravening legislation. By default, this licence does not allow for a significant negative effect on the FCS of those species affected.
- 3.9.15.4 There is potential for fragmentation of habitat to occur due to reduction of linear habitat features bisected by the MHPGC Project, however, the majority of setts identified are situated in a rural setting where alternative habitat linkages are present. In most cases the temporary loss of sections of linear habitat features will not cause significant habitat fragmentation. However, there will be permanent and temporary loss of home range foraging and commuting habitat. Badgers are mobile species and extensive areas of suitable well-connected habitat for foraging would remain surrounding the majority of the Project, which would not be affected.

3.9.15.5 The operation of lighting only when required around construction areas and positioning to avoid unnecessary illumination to sensitive ecological receptors (CoT25), siting the MHPGC Project to avoid areas of sensitive ecological receptors (CoT17) and establishing mitigation and management measures relating to protected or notable species and/or sensitive habitats in an Outline Landscape and Ecological Management Plan (which will also appoint an Ecological Clerk of Works where required); would ensure noise, vibration, light and movement levels have minimised impact on badger. Should effects significantly affect badger sett, a licence from Natural England may be required and will be determined following final design.

3.9.15.6 The embedded mitigation (see **Table 3-19**) that would be implemented include; CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan including the appointment of an Ecological Clerk of Works where required. These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or confirmed setts as far as practicable and would minimise disturbance of foraging and commuting activity.

Significance of effect

3.9.15.7 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with badger is **Low**. Therefore, the effect during the construction phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

3.9.15.8 Under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect suitable badger habitat, and operational activities are not expected to have an adverse impact on badger due to increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement). Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

3.9.15.9 Permanent lighting design at the substation will be detailed as part of the ongoing design and will be confirmed at ES.

Significance of effect

3.9.15.10 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with badger is **negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

3.9.15.11 The requirement for additional mitigation measures such as Natural England Mitigation Licences to damage/destroy a badger sett will be determined once the project design has been defined, and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.

3.9.15.12 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.16 Bats – foraging and commuting; common pipistrelle, soprano pipistrelle, Daubenton's bat, noctule bat and brown long-eared bat

3.9.16.1 Bats are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in

connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

Construction

- 3.9.16.2 Desk study records identified additional roost records for common pipistrelle, soprano pipistrelle, brown long-eared, Daubenton's, whiskered, noctule and Natterer's bats, including a range of day, maternity and/or unknown roosts located outside of the Bat Study Area, but within distances where core sustenance zones of the associated species potentially coincide with the habitat within the MHPGC PEIR Red Line Boundary: Onshore. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of fauna affecting foraging and commuting bats, resulting in potential fragmentation of bat populations, resulting in a reduction in connectivity; and disturbance and/or displacement resulting from increased noise, vibration, light and movement levels.
- 3.9.16.3 At present, no confirmed bat roosts have been recorded within the MHPGC PEIR Red Line Boundary: Onshore, although aerial inspection surveys of four trees are currently being undertaken within the Bat Survey Area. If roosts are confirmed within them, this will be considered and mitigation put in place such as avoidance of receptors through siting of the MHPGC Project, where practicable (CoT17) or Natural England Licensing. No buildings or built structures with suitability to support roosting bats would be directly affected by the MHPGC Project.
- 3.9.16.4 There may be the need for working outside of the core working hours for some activities. Bats could therefore potentially be affected by noise, vibration and lighting associated with construction. The embedded mitigation CoT03 core working hours, CoT25 Outline Construction Artificial Light Emissions Management Plan, CoT26 Outline Construction Noise and Vibration Management Plan, would maintain dark corridors around construction areas and minimise the potential for fragmentation and indirect disturbance effects on bats and their roosts. However, there is ample opportunity for foraging, commuting and roosting outside of construction areas within and beyond the MHPGC PEIR Red Line Boundary: Onshore
- 3.9.16.5 As the bat surveys are ongoing there remains the potential to affect bat roosts in trees (i.e., via damage, destruction or obstruction or other effects to the viability of bat roosts such as disturbance). Specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) would be obtained where required for the MHPGC Project to proceed while avoiding contravening legislation. The requirement for licensable mitigation would be included in the Outline Landscape and Ecological Management Plan. By default, an EPS licence does not allow for a significant negative effect on the FCS of those species affected.
- 3.9.16.6 The embedded mitigation (see **Table 3-19**) that would be implemented include: CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan including the appointment of an Ecological Clerk of Works where required. These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or bat roosts as far as practicable. Bats are mobile species and extensive areas of suitable well-connected habitat for roosting, foraging, and alternative commuting options, would remain surrounding most of the MHPGC Project, which would not be affected during construction.

Significance of effect

- 3.9.16.7 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with foraging and commuting bats is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.16.8 Under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect trees linear features, and operational activities are not expected to have an adverse impact on bats due to increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement). Any unplanned activities would be subject to

appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

- 3.9.16.9 The onshore export cable and AC connection cable corridors cross areas of habitat that are suitable for roosting bats or foraging and commuting bats using habitat which a roost could be dependent on. Potential for disturbance of foraging and commuting bats from noise and movement would be minimal, and there would be no effects due to vibration. Permanent lighting design at the substation will be considered as part of the ongoing design and will be confirmed at ES.

Significance of effect

- 3.9.16.10 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with foraging and commuting bats is **Low**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.16.11 The requirement for additional mitigation measures such as Natural England Mitigation Licences or Bat Disturbance Notifications will be determined once the project design has been defined, and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.
- 3.9.16.12 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.17 Bats – roosting; common pipistrelle, soprano pipistrelle, Daubenton’s bat, noctule bat and brown long-eared bat

- 3.9.17.1 Bats are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

Construction

- 3.9.17.2 Habitat throughout the MHPGC PEIR Red Line Boundary: Onshore is generally of low to moderate suitability for bats, consisting of a predominantly open agricultural land interspersed with agricultural dwellings. In these areas, suitable habitat features that have the potential to interact with the MHPGC Project are predominantly linear features which may be used by commuting bats, and scattered trees with suitability for roosting as noted above. In total, 37 trees have been recorded with PRF within the MHPGC PEIR Red Line Boundary: Onshore. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of roosts affecting roosting bats, resulting in potential fragmentation of bat populations and a reduction in connectivity; and disturbance and/or displacement resulting from increased noise, vibration, light and movement levels.
- 3.9.17.3 Scattered hedgerows/hedgerows with trees and occasional treelines exist as agricultural boundary features and along the sides of roadsides (including along the A19), that would be crossed by open cut trenches resulting in temporary habitat loss. Open cut crossings would affect multiple hedgerows. At hedgerow crossing points, construction activities could last up to 42 months, before hedgerows are reinstated (up to 24 months). Although there would be some overlap in these periods due to construction periods across the length of the Project varying, as hedgerows take time to mature, the impact could occur over a longer period without further mitigation and compensation measures.
- 3.9.17.4 Occasional localised areas of higher suitability habitat for bats exists. Bat activity surveys, night-time bat walkover and static surveys, are currently being undertaken but the Vegetation Removal Plan (or similar) will retain vegetation wherever practicable and the Outline Landscape and Ecological

Management Plan (CoT43) will establish mitigation and management measures relating to protected or notable species and/or sensitive habitats.

- 3.9.17.5 Trenchless crossing techniques to cross Durham Coast SSSI and SAC and Hesledon Moor East SSSI are embedded mitigation (CoT51). Where practicable, the siting of the temporary (and permanent) footprint of the MHPGC Project will avoid sensitive ecological and environmental receptors, meaning that suitable bat habitat would be unaffected by land take.
- 3.9.17.6 Where the MHPGC Project affects woodland habitat, this is considered to be mostly limited to potential indirect disturbance effects where temporary trenchless construction compounds and onshore export cable and AC connection cable construction activities occur adjacent to woodland edge habitats. CoT17 will aim to reduce any impacts on sensitive ecological and environmental receptors (e.g. woodlands due to their value for bats and other fauna), by avoiding them during the site selection process, where practicable. However, where direct land take may be necessary of woodland habitat impacts will be minimised by agreeing the construction areas and areas to be retained (CoT42).
- 3.9.17.7 Where suitable bat habitat is potentially affected, either directly or indirectly, impacts would mostly affect only a small proportion of the habitats such as woodland and grassland, or very short sections of linear features, such as hedgerows. Alternative commuting routes exist within the locality, either within and around the same habitat, or other nearby habitat features (e.g., alternative boundary features around the same field/land parcel). Embedded mitigation CoT42 Vegetation Retention Plan would aim to maintain habitat connectivity including where effects on connectivity are unavoidable, such as gaps in hedgerow crossings. The detail of this potential impact will be considered and detailed for ES.
- 3.9.17.8 Core working hours (CoT03), reduce the potential for effects on foraging bats. Roosting bats are more likely to be affected by works during the day, however, as no roosting bats have been identified within the MHPGC PEIR Red Line Boundary: Onshore, this is not considered to be an issue. There may be the need for working outside the core working hours for some activities. Bats could therefore potentially be affected by noise, vibration and lighting associated with construction. The embedded mitigation CoT25 Outline Construction Artificial Light Emissions Management Plan; CoT42 Vegetation Retention Plans; and CoT43 Outline Landscape and Ecological Management Plan; would maintain dark corridors around construction areas and minimise the potential for fragmentation and indirect disturbance effects on bats and their roosts. However, there is ample opportunity for foraging, commuting and roosting outside of construction areas within and beyond the MHPGC PEIR Red Line Boundary: Onshore.
- 3.9.17.9 The embedded mitigation (see **Table 3-19**) that would be implemented include: CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan including the appointment of an Ecological Clerk of Works where required. These measures would minimise loss and fragmentation of habitat as far as practicable. Bats are mobile species and extensive areas of suitable well-connected habitat for foraging, and alternative commuting options, would remain surrounding most of the MHPGC Project, which would not be affected during construction.

Significance of effect

- 3.9.17.10 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with roosting bats is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.17.11 Under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect trees, and operational activities are not expected to have an adverse impact on bats due to increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement). Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant

guidance and best practice at the time. During the operational phase, routine inspection and maintenance checks will be undertaken during the day and will not require habitat removal, therefore not affecting roosting bats populations present.

3.9.17.12 Most areas where permanent land take or land use change would occur are within habitat that is of low potential suitability for bats, predominantly agricultural land. Bats are mobile species and extensive areas of suitable well-connected habitat for foraging and alternative commuting options, would remain accessible to bats in these localities.

3.9.17.13 Permanent lighting design at the substation will be considered as part of the ongoing design and will be confirmed at ES. The onshore export cable route and AC connection cable route cross areas of habitat that are suitable for foraging and commuting bats. Potential for disturbance from noise and movement would be minimal, and there would be no effects due to vibration.

Significance of effect

3.9.17.14 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with roosting bats is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

3.9.17.15 The requirement for additional mitigation measures such as Natural England Mitigation Licences or Bat Disturbance Notifications will be determined once the project design has been defined and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.

3.9.17.16 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.18 Great crested newt

Receptor Sensitivity

3.9.18.1 GCN are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Predicted effects and their significance

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).

Construction

3.9.18.2 No records of GCN were returned within the Great Crested Newt Study Area and the eDNA sampling of 12 waterbodies all returned negative results. However, 19 waterbodies that might be suitable for GCN were not surveyed due to them being dry or inaccessible at the time of survey. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting GCN, resulting in potential fragmentation of GCN populations and a reduction in connectivity.

3.9.18.3 As detailed above, a number of waterbodies have not been ruled out from having GCN presence/suitability and therefore, there is still the potential for GCN to be recorded/present within the GCN Survey Area. Should GCN be recorded in any subsequent surveys, embedded mitigation listed above (such as avoidance, where practicable of sensitive ecological features through siting (CoT17) would minimise impacts on GCN where possible. Where impacts are unavoidable (e.g. harm to GCN, damage/destruction GCN waterbodies/terrestrial habitat), species-specific mitigation in the form of a licence (under the Wildlife and Countryside Act 1981 (as amended) for GCN, from Natural England would be obtained for the MHPGC Project to proceed while avoiding contravening legislation. By default, such licences do not allow for a significant negative effect on those species affected.

- 3.9.18.4 The embedded mitigation (see **Table 3-19**) that would be implemented include: CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan. These measures would minimise loss and fragmentation of habitat as far as practicable should GCN be found to be present in the waterbodies that have not been surveyed to date. GCN are mobile species and extensive areas of suitable well-connected habitat including other suitable waterbodies, would remain surrounding most of the MHPGC Project, which would not be affected during construction.

Significance of effect

- 3.9.18.5 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with GCN is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.18.6 The onshore export cable corridor and AC connection cable corridor will likely cross areas of terrestrial habitat that are suitable for GCN, but as no GCN have been recorded within the GCN Survey Area to date, consideration into impacts on GCN at is not required.
- 3.9.18.7 Should GCN be identified before or during construction, under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect GCN terrestrial or aquatic habitat, and operational activities are not expected to have an adverse impact on GCN. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

- 3.9.18.8 Overall, it is considered that the receptor sensitivity is **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with GCN is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.18.9 The requirement for additional mitigation measures such as Natural England Mitigation Licences or DLL will be determined once the project design has been defined and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.
- 3.9.18.10 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.19 Otter and Water Vole

Receptor Sensitivity

- 3.9.19.1 Otter and water vole are of County importance. In accordance with **Table 3-20**, it is categorised as Medium sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

Construction

- 3.9.19.2 Suitable habitat for otter and water vole occurs within the MHPGC PEIR Red Line Boundary: Onshore, where the onshore export cable corridor and the AC connection cable corridor crosses watercourses including streams and agricultural ditches/drains. For the purposes of assessment it is assumed that open-cut crossing techniques will be used to cross Coop House Wood and its associated watercourse where signs of otter have been recorded, thus resulting in temporary loss or fragmentation of aquatic and riparian habitat at these locations. However, as otter are highly mobile

and mitigation measures are included within the Outline Landscape and Ecological Management Plan (CoT43) relating to protected or notable species and/or sensitive habitats, these fragmentation effects will be minimised.

- 3.9.19.3 The onshore export cable and AC connection cable corridors cross several ditches with varying levels of habitat suitability for otter and water vole. Ditches are occasionally present around field boundaries around agricultural land, which is widespread throughout the MHPGC PEIR Red Line Boundary: Onshore. At watercourse crossing points, construction activities could last up to 42 months and reinstatement lasting 24 months. There would be some overlap in these periods due to construction periods across the length of the Project varying, although riparian habitats take time to mature, meaning the impact could occur over a longer period but this will be determined by the planting schedule and regime which will be included within the Outline Landscape and Ecological Management Plan (CoT43).
- 3.9.19.4 Surveys undertaken for the Project recorded low levels of otter activity, with evidence of otter recorded on one watercourse within Coop House Wood (including potential resting places) and no evidence of water vole, recorded within the MHPGC PEIR Red Line Boundary: Onshore (to be confirmed upon completion of the survey programme).
- 3.9.19.5 The embedded mitigation CoT03 core working hours, CoT25 Outline Construction Artificial Light Emissions Management Plan, CoT26 Outline Construction Noise and Vibration Management Plan, would minimise indirect disturbance effects, including nocturnal activities during periods/locations of nighttime working, which may occur in works areas in close proximity to riparian habitat. Otter and water vole are mobile and adaptive species and suitable well-connected habitat would remain surrounding the MHPGC Project. There is ample opportunity to avoid disturbance during foraging and commuting, by utilising alternative suitable habitats within the locality on sections of the affected watercourses beyond working areas, and interconnecting watercourses.
- 3.9.19.6 Of the potential otter rest sites recorded, all are located within Coop House Wood and it's considered likely that this woodland habitat and LWS will not be impacted by the construction works (CoT17 avoidance, where practicable of sensitive ecological receptors through siting) and so no direct impacts on otter are anticipated.
- 3.9.19.7 Water vole surveys are still ongoing and so there is still the potential for water vole to be recorded within the Water Vole Survey Area. Should water vole burrows be recorded, design of the MHPGC Project would avoid sensitive ecological receptors, through siting where practicable (CoT17) and other embedded mitigation listed above would negate or minimise impacts on water vole activity where possible. Where impacts are unavoidable (e.g. harm to water vole, damage/destruction/obstruction of burrows, or disturbance of, water voles using burrows), species-specific mitigation in the form of a licence (under the Wildlife and Countryside Act 1981 (as amended)) for water vole, from Natural England would be obtained for the MHPGC Project to proceed while avoiding contravening legislation. By default, such licences do not allow for a significant negative effect on those species affected.
- 3.9.19.8 As above with water vole, should pre-commencement surveys for otter identify a holt that is to be impacted during construction, species-specific mitigation in the form of a licence (under the Wildlife and Countryside Act 1981 (as amended)) for otter, from Natural England would be obtained for the MHPGC Project to proceed while avoiding contravening legislation.
- 3.9.19.9 The embedded mitigation (see **Table 3-19**) that would be implemented include: CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT21 Outline Dust Management Plan; CoT25 CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT34 Outline Pollution Prevention Plan; CoT42 Vegetation Retention Pan; CoT43 Outline Landscape and Ecological Management Plan, would minimise direct impacts on aquatic and riparian habitats used by otter and water vole.

Significance of effect

- 3.9.19.10 Overall, it is considered that the receptor sensitivity is up to **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with otter and water vole is **Low**.

Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

3.9.19.11 Under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect riparian corridors, and operational activities are not expected to have an adverse impact on otter or water vole. Potential for disturbance from noise and movement would be minimal, and there would be no effects due to vibration.

3.9.19.12 Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

3.9.19.13 Overall, it is considered that the receptor sensitivity is up to **County/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with otter and water vole is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

3.9.19.14 The requirement for additional mitigation measures such as Natural England Mitigation Licences or Bat Disturbance Notifications will be determined once the project design has been defined and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.

3.9.19.15 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.20 Freshwater fish

Receptor Sensitivity

- 3.9.20.1 Freshwater fish are of up to National importance. In accordance with **Table 3-20**, it is categorised as up to High sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna).

Construction

- 3.9.20.2 Freshwater fish have been assumed to be present, on a precautionary basis, within the six ponds that were wet at the time of survey and within South Hetton Burn (refer Section 3.4.6). Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting fish, resulting in potential fragmentation of fish populations and a reduction in connectivity.
- 3.9.20.3 For the purposes of assessment it is assumed that South Hetton Burn would be crossed using culverts for access tracks and that open-cut techniques would be required for cable installation. As discussed in **section 3.9.8**, ponds within the MHPGC PEIR Red Line Boundary: Onshore could be entirely or partially impacted, including the six ponds where fish have been assumed present. If excavations impact part of a pond or ephemeral water body, it is assumed that the entire feature could be lost or degraded due to the potential for hydrological changes caused by excavations affecting surface and sub-surface flow pathways.
- 3.9.20.4 Further details on impacts to fish as a result of these activities are provided in the following paragraphs.

Injury and/or Mortality

- 3.9.20.5 Direct impacts to fish, including larvae and eggs (where present) may occur. Creating temporary dry work areas for trenchless watercourse crossings or pond drain down, and/or for the installation of temporary accesses (requiring culverts) can lead to the stranding and desiccation of fish, larvae, and eggs. Desiccation, caused by exposure to air as water levels drop, can result in severe dehydration, tissue damage, and high mortality rates. Even fish that survive desiccation may experience long-term health impacts, including impaired physiological functions and reduced reproductive success (Nagrodski *et al.*, 2012). Although screens help minimise the risk of entrainment, small organisms can still be drawn into intake pipes and pumps, where they may suffer injuries leading to injury or mortality. Similarly, fish that become impinged on screens, even if recovered may experience injuries that may impact their long-term survival. Juvenile fish, larvae and elvers, due to their small size and/or poor swimming efficiency, are particularly vulnerable to these impacts (Carter and Reader, 2008).
- 3.9.20.6 Although impacts are possible, these are considered temporary and are spatially constrained to a small section of South Hetton Burn and the six ponds identified within potential to support fish.

Temporary loss and/or degradation of fish habitat

- 3.9.20.7 The MHPGC Project has the potential to result in the loss of a six ponds which potentially support fish. While siting of the MHPGC Project would avoid sensitive ecological receptors where practicable (CoT17), there is a risk that these ponds could be entirely or partially impacted. Temporarily impacted ponds would however be reinstated (CoT43) to pre-existing condition as far as reasonably practical following construction. It is expected that wetland habitat including ponds could not be reinstated above cables, however, would be reinstated to pre-existing condition as far as reasonably practical within proximity to their original location. Consequently, a net loss of fish habitat is not anticipated.
- 3.9.20.8 In addition, the temporary loss of or damage to suitable fish habitat within South Hetton Burn may occur during construction. Construction activities may also impact freshwater spawning and nursery grounds if present. The removal of riparian vegetation, which provides shade, shelter, and food resources, has the potential to further adversely affect fish habitat quality. In-channel excavation, use of pumps to transfer flowing water from upstream to downstream reaches of South Hetton Burn, and other in-channel activities may further degrade fish habitat by disturbing the riverbed and mobilising sediment into the water column. The increased suspended sediment load may cause

adverse direct physiological impacts (damage/irritation to gills, breathing impairment or mortality in extreme cases), displacement of fish from affected areas and indirect effects (decreased rates of growth, reproduction and recruitment) to fish. Juvenile fish are especially susceptible to this form of damage, impairing their ability to respire and ultimately affecting their survival and growth. Increased turbidity from sediment disturbance may also reduce foraging success by impairing the ability of fish to detect prey, and/or altering the abundance of prey species (Cavanagh, 2014; Kemp *et al.*, 2011). Depletion of dissolved oxygen may also result from increased turbidity, resulting in increased risk of hypoxia, particularly if water temperatures are elevated during summer months. Sediment mobilisation and subsequent settlement can also lead to the smothering of fish spawning habitats and deposited eggs where these features are present (Soulsby *et al.*, 2001).

- 3.9.20.9 Although impacts are possible these are considered temporary and spatially constrained to a small section of South Hetton Burn and six ponds. These impacts are infrequent, occurring only during construction activities.

Fragmentation of habitats (resulting in a reduction in connectivity - physical barriers to migration)

- 3.9.20.10 Creation of temporary dry working areas for watercourse crossings and installation of temporary structures, such as culverts associated with access tracks, have the potential to lead to the fragmentation of fish habitat by creating temporary barriers to fish movement and migration. However, dry working areas would only be required during the construction phase, and any temporary culverts or other in-channel structures would be removed following construction.

Significance of effect

- 3.9.20.11 Overall, it is considered that the receptor sensitivity is up to **National/High** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitats associated with fish is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.20.12 Under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will cause injury or mortality of fish, affect fish habitat, nor fragment habitats (resulting in a reduction in connectivity). Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

- 3.9.20.13 Overall, it is considered that the receptor sensitivity is up to **National/High** and the magnitude of impact of permanent or temporary land take/land use change associated with fish is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.20.14 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)

Construction

- 3.9.20.15 Noise, vibration and lighting during the construction phase may adversely affect fish. Noise generating activities have been identified in **Volume 3, Chapter 6: Onshore Noise and Vibration, of the PEIR**. Embedded mitigation (see **Table 3-19**) that would be implemented, which would protect fish from increased noise, vibration, light and movement levels, includes: CoT18 (CoCP, which will include noise and vibration management measures), CoT26 (Outline Noise and Vibration Management Plan) and CoT25 (Outline Construction Artificial Light Emissions Management Plan).

3.9.20.16 Noise can affect fish in several ways. Mortality and severe injury may result from high intensity sound. Injured fish may experience hearing impairment or damage to swim bladders or other internal organs, increasing susceptibility to predation and disease. Behavioural changes can also be induced from noise and vibration, and can include altered feeding behaviour, social interactions, or swimming patterns, including changes to upstream or downstream migration (Popper *et al.*, 2014).

3.9.20.17 Construction lighting may also adversely affect fish, particularly migratory species and those sensitive to light pollution. Artificial lighting can disrupt natural behaviours by altering fish activity patterns, impeding migration routes and affecting spawning cycles. Several studies have reported the impact of artificial lighting on migrating fish; Vowles *et al.* (2021) reported light avoidance behaviour in migrating European eels, and Riley *et al.* (2012) demonstrated changes in the timing of migration by Atlantic salmon smolts under street lighting.

3.9.20.18 Potential impacts are considered temporary and spatially restricted to small stretches of watercourses.

Significance of effect

3.9.20.19 Overall, it is considered that the receptor sensitivity is up to **National/High** and the magnitude of impact of increased noise, vibration and light associated with fish is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

3.9.20.20 The onshore export cable corridor and AC connection cable corridor crosses several watercourses and associated riparian corridors. Increased noise, vibration, light, and movement levels during the operation and maintenance phase are not expected to have an adverse impact on fish. Given the distance from watercourses, operational noise is unlikely to result in potentially significant effects to fish. Any unplanned intrusive activities (e.g. emergency repairs) would require that relevant biodiversity surveys would be undertaken to inform mitigation requirements, which will be applied according to relevant best practice at that time.

3.9.20.21 Permanent lighting design at the substation will be considered as part of the ongoing design and will be confirmed at ES. Consequently, light impacts are anticipated to be minimal.

Significance of effect

3.9.20.22 Overall, it is considered that the receptor sensitivity is up to **National/High** and the magnitude of impact of increased noise, vibration and light associated with fish is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

3.9.20.23 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.21 Wintering, intertidal and passage birds

Receptor Sensitivity

3.9.21.1 Wintering, intertidal and passage birds are of Local Importance. In accordance with **Table 3 18**, different species are categorised as Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

3.9.21.2 The ornithological survey areas are considered to represent the area within which potential impacts on ornithology would occur, including potential indirect effects from noise and visual disturbance, as suggested by NE. Noise impacts/displacement are considered in **Volume 3, Chapter 6: Onshore**

Noise and Vibration, of the PEIR. As part of this assessment, ecology and ornithology designated sites have been included as features.

Construction

- 3.9.21.3 Intertidal bird surveys were undertaken during April 2023 to March 2024 inclusive and October 2025 to September 2026 (inclusive; ongoing at the time of writing). These surveys have recorded five red-listed and eighteen amber-listed Birds of Conservation concern. Wintering/passage bird surveys undertaken during October 2025 and March 2026 inclusive (with a second consecutive year of wintering bird surveys ongoing until March 2027, at the time of writing) have, to date, recorded four red-listed and nine amber-listed Birds of Conservation Concern. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, including those associated with landfall, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting birds; and disturbance and/or displacement resulting from increased noise, vibration, light and movement levels.
- 3.9.21.4 Species utilising intertidal habitats will not be directly impacted as coastal habitats (onshore and intertidal) will be avoided by the use of trenchless techniques under the Durham Coast SSSI and SAC (CoT13), and associated pollution control measures are included within the Outline Code of Construction Practice (commitment CoT18), including an Outline Bentonite Breakout Plan Contingency (CoT47). Therefore, there will be no permanent or temporary loss/fragmentation of the habitats of species typically associated with intertidal habitats, or other impact pathways which could result in a significant effect.
- 3.9.21.5 There is potential for wintering birds utilising inland habitats such as farmland and scrub to be directly impacted through direct habitat loss for the LSS and cable corridors. However, surveys undertaken thus far have shown that relatively small numbers of priority species of mainly only local importance utilise these areas.
- 3.9.21.6 The embedded mitigation (see Table 3 17) that would be implemented include: CoT18 Outline CoCP; CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT43 Outline Landscape and Ecological Management Plan. These measures would minimise disturbance on species from lighting, noise and visual disturbances during construction.

Significance of effect

- 3.9.21.7 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with wintering and passage birds is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.21.8 Operation and Maintenance activities associated with habitat supporting breeding birds has the potential to result in habitat loss or disturbance or disturbance and/or displacement of wintering, intertidal or passage birds due to increased noise, vibration, light movement levels.
- 3.9.21.9 During the operational phase, there will be no requirement for routine inspection and maintenance activities as the proposed grid connection comprises predominantly buried infrastructure and there will be no permanent above-ground structures within the coastal habitats. Once construction has been completed and the land reinstated, operational access to coastal habitats will not be required other than in exceptional circumstances, such as emergency fault investigation or repair. Consequently, the frequency of management activity during operation will be negligible and no routine disturbance of habitats or bird species is anticipated.
- 3.9.21.10 Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.
- 3.9.21.11 Permanent lighting design at the substation will be detailed as part of the ongoing design and will be confirmed at ES. This would minimise the risk of indirect disturbance to roosting or foraging wintering and passage birds.

Significance of effect

3.9.21.12 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with wintering and passage birds is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

3.9.21.13 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.22 Breeding birds

Receptor Sensitivity

3.9.22.1 Breeding birds are of Local Importance. In accordance with **Table 3 18**, different species are categorised as Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).

Construction

3.9.22.2 Surveys for breeding birds were undertaken in 2025 and 2026, the latter results of which will be presented in the ES. The 2025 breeding bird survey recorded five red-listed and seven amber-listed Birds of Conservation Concern breeding within the Survey Area, with eight SPI recorded, although breeding was not confirmed for all species. The species recorded during the breeding bird survey are considered typical of agricultural, woodland, urban and coastal/intertidal habitats and are relatively widespread in the surrounding area. Significant aggregations of fulmar and kittiwake were present along the coast by Blast Beach where they breed on the cliffs. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore, including those associated with landfall, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting birds; and disturbance and/or displacement resulting from increased noise, vibration, light and movement levels.

3.9.22.3 Direct impacts from habitat loss on coastal species will be avoided through the use of trenchless techniques under the Durham Coast SSSI and SAC (CoT13) with entry pits to the west of the railway, and associated pollution control measures are included within the Outline CoCP (commitment CoT18), including an Outline Bentonite Breakout Plan (CoT47). Therefore, there will be no permanent or temporary loss/fragmentation of the habitats of such species associated with cliff habitats, or other impact pathways which could result in a significant effect.

3.9.22.4 The ornithological survey areas are considered to represent the area within which potential impacts on ornithology would occur, including potential indirect effects from noise and visual disturbance, as suggested by NE. Noise impacts/displacement are considered in **Volume 3, Chapter 6: Onshore Noise and Vibration, of the PEIR**. As part of this assessment, ecology and ornithology designated sites have been included as features.

3.9.22.5 There is potential for breeding birds utilising inland habitats such as farmland and scrub to be directly impacted through direct habitat loss for the LSS. However, surveys have shown that these areas are utilised by small numbers of priority species of local importance.

3.9.22.6 The embedded mitigation (see **Table 3-19**) that would be implemented include CoT11 to ensure vegetation removal is undertaken outside the breeding bird season, or where not reasonably practicable nesting bird checks will be undertaken by an ECOw; CoT17 (siting of the MHPGC Project to avoid sensitive ecological receptors where practicable); CoT18 Outline CoCP; CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan including the appointment of an Ecological Clerk of Works where required.

3.9.22.7 These measures would minimise habitat loss as far as practicable, and would minimise disturbance on species from lighting, noise and visual disturbances during construction. Species utilising

intertidal habitats will not be directly impacted as coastal habitats will be avoided by installing through the use of trenchless techniques. Trenchless crossing methods will be undertaken between mean low water springs and the Landfall (commitment CoT51) including drilling under coastal habitats, and associated pollution control measures are included within the Outline Code of Construction Practice (commitment CoT18), including an Outline Bentonite Breakout Plan Contingency (CoT47). Therefore, there will be no permanent or temporary loss/fragmentation of the habitats of species typically associated with intertidal habitats, or other impact pathways which could result in a significant effect.

Significance of effect

- 3.9.22.8 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with breeding birds is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.22.9 Operation and Maintenance activities associated with habitat supporting breeding birds has the potential to result in habitat loss or disturbance or disturbance and/or displacement of breeding or nesting birds due to increased noise, vibration, light movement levels. However, during the operational phase, routine inspection and maintenance checks should not require habitat removal, therefore impacts on breeding birds present are not anticipated. Once construction has been completed and the land reinstated, operational access to coastal habitats will not be required other than in exceptional circumstances, such as emergency fault investigation or repair. Consequently, the frequency of management activity during operation will be negligible and no routine disturbance of habitats or bird species is anticipated.
- 3.9.22.10 Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.
- 3.9.22.11 Permanent lighting design at the substation will be considered as part of the ongoing design and will be confirmed at ES. This would minimise the risk of indirect disturbance to breeding birds.

Significance of effect

- 3.9.22.12 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat, or increased noise, vibration, light and movement levels associated with breeding birds is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.22.13 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA terms. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.23 White-clawed crayfish

Receptor Sensitivity

- 3.9.23.1 White-clawed crayfish are of National importance. In accordance with **Table 3 18**, it is categorised as High Sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).

Construction

- 3.9.23.2 White-clawed crayfish have been assumed present on a precautionary basis within South Hetton Burn. It is assumed that South Hetton Burn would be crossed using culverts for access tracks, and that open-cut techniques will be required for installing cables. Therefore, construction activities associated with watercourse crossings within the MHPGC PEIR Red Line Boundary: Onshore, have

the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting white-clawed crayfish, should they be present, resulting in potential fragmentation of their habitat and a reduction in connectivity.

- 3.9.23.3 Further details on impacts to white-clawed crayfish as a result of these activities are provided in the following paragraphs.

Injury and/or Mortality

- 3.9.23.4 If white-clawed crayfish are confirmed present, mitigation measures would be detailed in the Outline Landscape and Ecological Management Plan (CoT43). Where required, such measures would be implemented to ensure compliance with relevant legislative requirements and established good practice. Although impacts are possible, these are considered temporary and are spatially constrained to a small section of South Hetton Burn.

Temporary loss and/or degradation of habitat

- 3.9.23.5 Temporary loss of or damage to aquatic habitats within and adjacent to South Hetton Burn may occur. The removal of riparian vegetation, which provides shade, shelter, and food resources, has the potential to further adversely affect white-clawed crayfish habitat quality. In-channel excavation, use of pumps to transfer flowing water from upstream to downstream reaches of watercourses, and other in-channel activities may further degrade white-clawed crayfish habitat by disturbing the riverbed and banks and mobilising sediment into the water column. The increased suspended sediment load may cause adverse direct physiological impacts, displacement of white-clawed crayfish from affected areas and indirect effects (decreased rates of growth, reproduction and recruitment) to white-clawed crayfish.
- 3.9.23.6 Although impacts are possible (if white-clawed crayfish are present), these are considered temporary and are spatially constrained to a small section of South Hetton Burn.
- 3.9.23.7 Embedded mitigation (see Error! Reference source not found.) that would be implemented, which would protect white-clawed crayfish (if present) and/or white-clawed crayfish habitats (if present), includes: CoT18 (CoCP) and CoT43 (Landscape and Ecological Management Plan which would include mitigation and management measures relating to protected or notable species and /or sensitive habitats).

Significance of effect

- 3.9.23.8 Overall, with the incorporation of embedded mitigation, it is considered that the receptor sensitivity is **National/High** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with white-clawed crayfish is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.23.9 Operation and Maintenance activities associated with habitat supporting white-clawed crayfish have the potential to result in habitat loss or injury to this species if present. However, under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect white-clawed crayfish or their habitats, and operational activities are not expected to have an adverse impact these habitats. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

- 3.9.23.10 Overall, it is considered that the receptor sensitivity is **National/High** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with white-clawed crayfish is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)

Construction

- 3.9.23.11 Noise, vibration, light and movement levels during the construction phase may adversely affect white-clawed crayfish (if present). Noise generating activities for open cut and trenchless watercourse crossings have been identified in **Volume 3, Chapter 6: Onshore Noise and Vibration, of the PEIR**. Embedded mitigation (see **Table 3-19**) that would be implemented, which would protect white-clawed crayfish from increased noise, vibration, light and movement levels, includes: CoT18 (CoCP, which will include noise and vibration management measures) and CoT25 (Outline Construction Artificial Light Emissions Management Plan).
- 3.9.23.12 Crayfish are not considered as sensitive to noise as fish as they lack swim bladders and other air-filled chambers that increase sensitivity to underwater noise (Tidau and Briffa, 2016). They are, however, able to detect and respond to particle motion and substrate-borne vibrations, such as those produced during pile driving (Roberts *et al.*, 2016). Research suggests prolonged exposure to artificial noise and vibration can result in a range of biological and ecological effects in various species of crayfish, including increased locomotion, stress, diminished and slower anti-predator responses, alterations in foraging patterns, and modifications in social interactions (Buscaino *et al.*, 2012; Hopson, 2019). The severity of these effects depends on the intensity, duration and frequency of the noise. Prolonged exposure to artificial light at night has also been recorded to elicit a behavioural response in some species of crayfish, including decreased exploratory and social behaviour (Thomas *et al.*, 2016; Barbour and Moore, 2019).
- 3.9.23.13 Although impacts are possible (if white-clawed crayfish are present), these are considered temporary and are spatially constrained to a small section of South Hetton Burn. Given the temporary nature of the works and the relatively low sensitivity of this species to noise, vibration and lighting, it is unlikely that these construction activities would result in significant effects.

Significant of effect

- 3.9.23.14 Overall, it is considered that the receptor sensitivity is **National/High** and the magnitude of impact of increased noise, vibration, lighting and/or movement associated with white-clawed crayfish is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.23.15 Operation and Maintenance activities associated with habitat supporting white-clawed crayfish have the potential to result in disturbance/displacement to this species if present. However, the onshore export cable and AC connection cable corridor crosses several watercourses and associated riparian corridors. Increased noise, vibration, light, and movement levels during the operation and maintenance phase are not expected to have an adverse impact on white-clawed crayfish. Given the distance of LSS operation from watercourses and the absence of high intensity or impulsive noise-generating activities, operational noise is unlikely to result in potentially significant effects to white-clawed crayfish. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.
- 3.9.23.16 Permanent lighting design at the substation will be considered as part of the ongoing design and will be confirmed at ES. Consequently, light impacts are anticipated to be minimal.

Significance of effect

- 3.9.23.17 Overall, it is considered that the receptor sensitivity is **National/High** and the magnitude of impact of increased noise, vibration, lighting and/or movement associated with white-clawed crayfish is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.23.18 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA term. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.23.19 The requirement for additional mitigation measures such as Natural England Mitigation Licences will be determined once the project design has been defined, and will be outlined in the Outline Landscape and Ecological Management Plan (CoT43), where required.

3.9.24 SPI and other conservation-notable terrestrial invertebrate species

Receptor Sensitivity

3.9.24.1 Significant assemblages of SPI or notable terrestrial invertebrate species that are of Local importance. In accordance with **Table 3 18**, it is categorised as low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).

Construction

3.9.24.2 The desk study identified records of 23 SPI and conservation-notable terrestrial invertebrate species within 2km of the MHPGC PEIR Red Line Boundary: Onshore. Terrestrial invertebrate surveys are ongoing at time of writing (July-September 2026) at targeted locations with potential to support significant assemblages of terrestrial invertebrate species which could be directly affected.

3.9.24.3 Most of the MHPGC PEIR Red Line Boundary: Onshore passes through landscape and habitat features that are generally of low value to invertebrates. Localised areas of habitat that were assessed to be of elevated value to invertebrates were predominantly within SSSIs and land connected to these sites that were deemed of high value to terrestrial invertebrates, where there are mosaics of features and habitats. Surveys are currently ongoing but the habitat within the Durham Coast SSSI was considered to be of high value, whereas Hesledon Moor East SSSI was of lower value for terrestrial invertebrates. Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore and associated with the SSSI and adjoining habitats, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting SPI or notable terrestrial invertebrate species, should they be present, resulting in potential fragmentation of their habitat and a reduction in connectivity.

3.9.24.4 Where temporary and permanent land take could occur, the areas of habitat affected are unlikely to support unique assemblages of invertebrate fauna based on the common and widespread habitat types present. Areas of optimal invertebrate habitat are predominantly located within designated sites which where practicable, would be avoided through siting of the MHPGC Project during the site selection process (CoT17) and through the use of trenchless techniques crossings at Durham Coast SSSI and SAC and Hesledon Moor East SSSI (CoT13 and CoT51). Any fragmentation effects due to construction of the onshore export cable or AC connection cable would be temporary and short duration within any given locality. Construction would affect only a relatively small area of the available habitat within the local landscape, with more extensive areas of suitable habitat remaining unaffected, such as within Durham Coast SSSI and Hesledon Moor East SSSI due to the use of trenchless crossings. Areas of temporarily affected habitat would be reinstated like-for-like post-construction.

3.9.24.5 The embedded mitigation (see **Table 3-19**) that would be implemented include: CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT25 a sensitive lighting strategy and Outline Construction Artificial Light Emissions Management Plan; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan. These measures would minimise loss and fragmentation of suitable habitat.

Significance of effect

3.9.24.6 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with SPI and other conservation-notable terrestrial invertebrates is **Low**. Therefore, the effect during the construction phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

3.9.24.7 Operation and Maintenance activities associated with habitats that could support terrestrial invertebrates have the potential to result in disturbance of habitats supporting invertebrate species. However, most areas where permanent land take or land use change would occur are within habitat

that is of negligible or low value for invertebrates, predominantly where the substation will be located within agricultural land/other neutral grassland. Permanent land take or land use change would affect only a small area of the available habitat within the localities, with more extensive areas of suitable habitat and the SSSIs remaining unaffected.

- 3.9.24.8 The substation would generally be monitored and operated remotely, and periodic maintenance on-site would be undertaken via permanent access roads and within the substation compound and would therefore not affect favourable invertebrate habitat. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time. Therefore, potential for effects of loss or degradation to habitat features due to land take, land use change and fragmentation would be negligible.

Significance of effect

- 3.9.24.9 Overall, it is considered that the receptor sensitivity is **Local/Low** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with SPI and other conservation-notable terrestrial invertebrates is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.24.10 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA term. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.25 SPI and other conservation-notable aquatic macroinvertebrates

Receptor Sensitivity

- 3.9.25.1 SPI and other notable aquatic macroinvertebrate species would be of Regional to Local importance. In accordance with **Table 3 18**, they are categorised as Medium to Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).

Construction

- 3.9.25.2 SPI and other conservation-notable aquatic macroinvertebrates have been assumed to be present, on a precautionary basis, within South Hetton Burn and the six ponds that were wet at the time of survey (refer **Section 3.4.6**). Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore and associated watercourse crossings and wetland habitats, have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting SPI or notable aquatic macroinvertebrate species, should they be present, resulting in potential fragmentation of their habitat and a reduction in connectivity.
- 3.9.25.3 It is assumed that South Hetton Burn would be crossed using culverts for access tracks and that open-cut techniques would be required for cable installation. As discussed in **Section 3.9.8**, ponds within the MHPGC PEIR Red Line Boundary: Onshore could be entirely or partially impacted, including the six ponds where SPI and other conservation-notable aquatic macroinvertebrates have been assumed present. If excavations impact part of a pond or ephemeral water body, it is assumed that the entire feature could be lost or degraded due to the potential for hydrological changes caused by excavations affecting surface and sub-surface flow pathways.
- 3.9.25.4 Further details on impacts to SPI and other conservation-notable aquatic macroinvertebrates as a result of these activities are provided in the following paragraphs.
- Injury and/or mortality*
- 3.9.25.5 Direct impacts to SPI and other conservation-notable aquatic macroinvertebrates may occur as a result of in-channel activities (e.g., creating temporary dry work areas for trenchless watercourse crossings (e.g., open cut), and/or for the installation of temporary accesses requiring culverts). These activities can lead to the stranding and desiccation of SPI and other conservation-notable aquatic macroinvertebrates. Impacts to ponds within the MHPGC PEIR Red Line Boundary: Onshore

has the potential to result in further injury and/or mortality of SPI and other conservation-notable macroinvertebrates (where they exist).

- 3.9.25.6 Although impacts are possible, these are considered spatially constrained to a small section of South Hetton Burn, and six ponds.

Temporary loss and/or degradation of habitat

- 3.9.25.7 The MHPGC Project has the potential to result in the temporary loss of six ponds which potentially supports SPI and other conservation-notable aquatic macroinvertebrates. These temporarily impacted ponds would however be reinstated (CoT43) to pre-existing condition as far as reasonably practical following construction. It is expected that wetland habitat including ponds could not be reinstated above cables, however, would be reinstated to pre-existing condition as far as reasonably practical within proximity to their original location. Consequently, a net loss of SPI and other conservation-notable aquatic macroinvertebrate habitat is not anticipated.
- 3.9.25.8 In addition, the temporary loss of or damage to suitable SPI and other conservation-notable aquatic macroinvertebrates habitat within South Hetton Burn may occur during construction. In-channel activities, such as dewatering may lead to the loss and/or degradation of habitats for SPI and other notable aquatic invertebrates. The removal of riparian vegetation, which provides resources such as shade, shelter, and food, will further contribute to habitat degradation. In-channel excavation, use of pumps to transfer flowing water from upstream to downstream reaches of watercourses, and other in-channel activities may further degrade aquatic invertebrate habitat through localised changes in water quality. Sediment mobilisation and subsequent re-settlement may also lead to the smothering of macroinvertebrates, particularly sedentary species (Gleason *et al.*, 2003).
- 3.9.25.9 Although impacts are possible these are considered temporary and spatially constrained to a small section of South Hetton Burn and six ponds. These impacts are infrequent, occurring only during construction activities.
- 3.9.25.10 Embedded mitigation (see Error! Reference source not found.) that would be implemented include: CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan. These measures would minimise loss and fragmentation of suitable SPI and other conservation-notable aquatic macroinvertebrate habitat (if present).

Significance of effect

- 3.9.25.11 Overall, it is considered that the receptor sensitivity is up to **Regional/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with SPI and other conservation-notable aquatic invertebrates is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.25.12 Operation and Maintenance activities associated with habitats that could support aquatic macroinvertebrates have the potential to result in impacts on habitats supporting aquatic macroinvertebrates. However, under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect SPI and other conservation-notable aquatic macroinvertebrates habitat, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

- 3.9.25.13 Overall, it is considered that the receptor sensitivity is up to **Regional/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with SPI and other conservation-notable aquatic invertebrates is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

3.9.25.14 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA term. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.26 SPI and other conservation-notable aquatic macrophytes

Receptor Sensitivity

3.9.26.1 SPI and other notable aquatic macrophyte species would be of Regional to Local importance. In accordance with **Table 3 18**, they are categorised as Medium to Low sensitivity.

Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).

Construction

3.9.26.2 SPI and other conservation-notable aquatic macrophytes have been assumed to be present, on a precautionary basis, within the six ponds that were wet at the time of survey and within South Hetton Burn (refer **Section 3.4.6**). Therefore, construction activities within the MHPGC PEIR Red Line Boundary: Onshore and associated watercourse crossings and wetland habitats (including ponds), have the potential to result in temporary and/or permanent habitat loss or degradation and/or loss of habitat affecting SPI or notable aquatic macrophyte species, should they be present, resulting in potential fragmentation of their habitat and a reduction in connectivity.

3.9.26.3 It is assumed that South Hetton Burn would be crossed using culverts for access tracks and that open-cut techniques would be required for cable installation. As discussed in **Section 3.8.7**, ponds within the MHPGC PEIR Red Line Boundary: Onshore could be entirely or partially impacted, including the six ponds where SPI and other conservation-notable aquatic macrophytes have been assumed present. If excavations impact part of a pond or ephemeral water body, it is assumed that the entire feature could be lost or degraded due to the potential for hydrological changes caused by excavations affecting surface and sub-surface flow pathways. Temporarily impacted ponds would however be reinstated (CoT43) to pre-existing condition as far as reasonably practical following construction. It is expected that wetland habitat including ponds could not be reinstated above cables, however, would be reinstated to pre-existing condition as far as reasonably practical within proximity to their original location. Consequently, a net loss of SPI and other conservation-notable aquatic macrophyte habitat is not anticipated.

3.9.26.4 In addition, the temporary loss of or damage to suitable SPI and other conservation-notable macrophyte habitat within South Hetton Burn may occur during construction. In-channel activities, such as dewatering may lead to the loss and/or degradation of habitats for SPI and other notable conservation macrophytes. In-channel excavation, use of pumps to transfer flowing water from upstream to downstream reaches of watercourses, and other in-channel activities may further degrade macrophyte habitat through localised changes in water quality.

3.9.26.5 Although impacts are possible these are considered temporary and spatially constrained to a small section of South Hetton Burn and six ponds. These impacts are infrequent, occurring only during construction activities.

3.9.26.6 Embedded mitigation (see Error! Reference source not found.) that would be implemented include: CoT17 avoidance, where practicable, of sensitive ecological receptors through siting; CoT18 Outline CoCP; CoT42 Vegetation Retention Plans; CoT43 Outline Landscape and Ecological Management Plan. These measures would minimise loss and fragmentation of suitable SPI and other conservation-notable macrophyte habitat (if present).

Significance of effect

3.9.26.7 Overall, it is considered that the receptor sensitivity is up to **Regional/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with SPI and other conservation-notable aquatic macrophytes is **Low**. Therefore, the effect during the construction phase, is considered to be **Minor**, which is not significant in EIA and CIEEM terms.

Operation and Maintenance

- 3.9.26.8 Operation and Maintenance activities associated with habitats that could support SPI or notable aquatic macrophytes have the potential to result in impacts on habitats supporting aquatic macrophytes. However, under normal operation of the MHPGC Project, there is not expected to be permanent or temporary land take/land use change that will affect SPI and other conservation-notable macrophyte habitat, and operational activities are not expected to have an adverse impact this habitat type. Any unplanned activities would be subject to appropriate surveys and assessments, with any required mitigation measures implemented in accordance with relevant guidance and best practice at the time.

Significance of effect

- 3.9.26.9 Overall, it is considered that the receptor sensitivity is up to **Regional/Medium** and the magnitude of impact of permanent or temporary land take/land use change and fragmentation of habitat associated with SPI and other conservation-notable aquatic macrophytes is **Negligible**. Therefore, the effect during the operation and maintenance phase, is considered to be **Negligible**, which is not significant in EIA and CIEEM terms.

Additional Mitigation and residual effect

- 3.9.26.10 There are no additional commitments employed for this potential impact, as the residual level of effect is concluded as not significant in EIA term. Therefore, residual effects are concluded to be **Minor**, which is not significant in EIA terms.

3.9.27 Decommissioning phase

All receptors

- 3.9.27.1 At the end of its assumed 35-year operating life, the MHPGC Project may be decommissioned. Deconstruction of the LSS will follow the reverse order of installation, once it has been taken out of service. All plant, structures and foundations will be dismantled and disposed of. Decommissioning of the onshore export cable would likely involve leaving cables in situ; to minimise/avoid environmental disturbance and is expected to be **Negligible**.
- 3.9.27.2 An Onshore Decommissioning Plan (CoT16) will be developed prior to decommissioning. It will include provisions for the removal of all onshore above ground infrastructure and the decommission of below ground infrastructure (if and where relevant and practicable), and details relevant to flood risk, pollution prevention, protection of soils and avoidance of ground disturbance. The Onshore Decommissioning Plan will be in line with the latest relevant legislation and available guidance at the time of production, as far as reasonably practicable.
- 3.9.27.3 The environmental effects associated with the decommissioning phase of the MHPGC Project are expected to be of a similar or lower level to those reported for the construction phase works, albeit with a lesser duration. The likely significance of effects relating to the construction phase assessment reported in this chapter are therefore applicable to the decommissioning phase.

3.10 Cumulative effects

3.10.1 Cumulative effects assessment methodology

- 3.10.1.1 The Morven Programme comprises four distinct projects: Morven North, Morven South, Morven Hawthorn Pit Grid Connection Project (MHPGC Project), and Morven Branxton Area Grid Connection Project (MBAGC Project). As the largest Zone of Influence (ZOI) for the onshore CEA does not overlap with Morven North, Morven South or MBAGC, the onshore Cumulative Effects Assessment (CEA) has been undertaken to assess the MHPGC Project alone with relevant projects, plans and activities using a tiered approach. The CEA has been undertaken in accordance with the methodology described in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR**.
- 3.10.1.2 The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see **Volume 1, Annex 4.4: Cumulative Screening and Location Plan, of the PEIR**). Each project or plan has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved. Based on professional judgement and best practice guidance, a ZOI of 1km has been used to
- 3.10.1.3 In undertaking the CEA for MHPGC Project, it should be noted that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside MHPGC Project. Therefore, a tiered approach has been adopted, whereby all third-party projects and plans considered have been allocated into 'tiers' reflecting their current stage within the planning and development process. This provides a framework for placing relative weight upon the potential for each project/plan included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the project/plan's parameters. The tiered approach utilised within the MHPGC Project CEA employs the following tiers:
- Tier 1 assessment – Existing developments either built (operational) or under construction; approved developments awaiting implementation; and permitted/submitted application(s), but not yet determined, plus Morven North and Morven South;
 - Tier 2 assessment – All plans/projects assessed under Tier 1, plus plans/projects where a scoping report has been submitted and is in the public domain;
 - Tier 3 assessment – All plans/projects assessed under Tier 1 and 2, plus MBAGC Project, and plans/projects that are reasonably foreseeable (e.g. projects identified in development plans, projects in other plans and programmes, offshore renewable energy projects that have a Crown Estate Scotland Lease Option Agreement).
- 3.10.1.4 The specific projects and plans screened into the CEA for Ecology and Ornithology are outlined in **Table 3-21**.
- 3.10.1.5 The potential impacts that have been considered in the CEA (listed in **Section 3.6**) represent a subset of those assessed for MHPGC Project alone.
- Permanent or temporary land take/land use change
 - Fragmentation of habitats
 - Increased noise, vibration, light and movement levels
 - Changes in hydrology (resulting in habitat loss, degradation and/or loss of fauna);
 - Changes in air quality (e.g. dust or vehicle emissions resulting in habitat degradation);
 - Pollution events (including the liberation of sediments and chemicals resulting in habitat loss or degradation and/or loss of fauna);
 - Introduction of INNS (resulting in habitat degradation).

- 3.10.1.6 While all impacts scoped into the project-level assessment were considered for inclusion in the CEA, a number were screened out at the CEA stage on the basis that they are localised, temporary, and/or event-based in nature, or have been assessed as negligible after embedded mitigation is applied. These impacts are not considered capable of interacting cumulatively with similar changes arising from other plans or projects in a manner that could give rise to a cumulative impact and have therefore been scoped out of the cumulative assessment. These impacts include:
- Changes in hydrology (resulting in habitat loss, degradation and/or loss of fauna);
 - Changes in air quality (e.g. dust or vehicle emissions resulting in habitat degradation);
 - Pollution events (including the liberation of sediments and chemicals resulting in habitat loss or degradation and/or loss of fauna);
 - Introduction of INNS (resulting in habitat degradation).
- 3.10.1.7 Similarly, some of the potential impacts considered within the MHPGC Project alone assessment are specific to a particular phase of development (e.g. construction, O&M or decommissioning). Where cumulative effects with other plans or projects only have potential to occur where there is spatial or temporal overlap with MHPGC Project during certain phases of development, impacts associated with a certain phase may be omitted from further consideration where no plans or projects have been identified that have the potential for cumulative effects during this period.
- 3.10.1.8 Only those developments in the short list that fall within the ZOI have the potential to result in cumulative effects with the Proposed Development. All developments falling outside the ZOI are excluded from this assessment.

Table 3-21: List of other projects and plans considered within the Cumulative Effects Assessment for Terrestrial Ecology and Terrestrial and Intertidal Ornithology

Project/plan	Status	Distance from MHPGC Project (km)	Description of project/plan	Estimated dates of construction (If applicable)	Overlap with MHPGC Project
Tier 1					
DCC2	In Planning - Application submitted	0.73km	Erection of 50no. affordable dwellings with associated access and landscaping (amended description). There is potential for indirect effects from increased recreational disturbance post-construction.	Detail not available	<i>Project is 0.73 km from the MHPGC PEIR Red Line Boundary: Onshore</i>
DCC5 <i>Croup Hill Solar Farm</i>	Consented	0km	Commencement of Development for the creation of a solar farm.	Detail not available	<i>Project is within the applicable ZOI for Ecology and Ornithology</i>
DCC6 <i>Seaham Garden Village</i>	Consented	0km	Garden village of up to 1500 dwellings, integrated community health and wellbeing village, commercial and leisure uses, business innovation hub, primary school, public open space, community allotments and associated infrastructure, including new pedestrian and vehicular access from A182. Although construction is due to be complete prior to the mobilisation of MHPGC Project, there is potential for indirect effects from increased recreational disturbance post-construction.	Under construction, due to be complete 2030	<i>Project is within the applicable ZOI for Ecology and Ornithology</i>
DCC8 <i>Transport hub and active travel scheme</i>	Consented	0km	Transport hub and active travel scheme including improvements to bus, cycle and pedestrian facilities and access road, car parking and associated works including landscaping and biodiversity enhancement.	Under construction, due to be complete April 2027	<i>Project is within the applicable ZOI for Ecology and Ornithology</i>
DCC12 <i>81 homes and a convenience store</i>	In Planning - Application submitted	0km	Erection of 81 no. homes, a convenience store (use class E) and associated infrastructure and landscaping There is potential for cumulative effects should construction programmes coincide and indirect effects from increased recreational disturbance post-construction.	Detail not available	<i>Project is within the applicable ZOI for Ecology and Ornithology</i>

Project/plan	Status	Distance from MHPGC Project (km)	Description of project/plan	Estimated dates of construction (If applicable)	Overlap with MHPGC Project
DCC13 <i>Land East of Seaham Garden Village</i>	In Planning - Application submitted	0km	Demolition of existing farm buildings and dwellings and erection of 149 dwellings (use class C3) with vehicle access, open space, landscaping, SUDS, and associated infrastructure works. There is potential for cumulative effects should construction programmes coincide and indirect effects from increased recreational disturbance post-construction.	Detail not available	<i>Project is within the applicable ZOI for Ecology and Ornithology</i>
SCC27 <i>Land at Salters Lane Slingley Hill</i>	Refused - Appeal Lodged	n/a	Outline planning application (with all matters reserved except for means of access) for the erection of up to 255 dwellings, with public open space, landscaping, sustainable drainage system (SuDs) and associated infrastructure.	Detail not available and currently permission refused.	<i>Project is within the applicable ZOI for Ecology and Ornithology</i>
Tier 2					
			<i>None identified</i>		
Tier 3					
			<i>None identified</i>		

3.10.2 Maximum Design Scenario – Cumulative Effects Assessment

- 3.10.2.1 The MDSs identified in **Table 3-18** have been selected as those having the potential to result in the greatest effect on Terrestrial Ecology and Terrestrial and intertidal Ornithology. The cumulative effects presented and assessed in this section have been based on **Volume 1, Chapter 2: Project Description, of the PEIR** alongside available information from other projects and plans to define an MDS for CEA.

3.10.3 Cumulative effects assessment

Overview

- 3.10.3.1 A description of the significance of cumulative effects upon ecology and ornithology receptors arising from each identified impact is given below. The CEA for MHPGC Project is presented in **Table 3-22 to Table 3-24**.
- 3.10.3.2 Tier 1 cumulative projects overlap with the MHPGC Project PEIR Onshore Red Line Boundary or are within the ZOI. At the time of writing, timescales for the construction phases of some of the Tier 1 projects are currently unknown. To ensure a conservative assessment, it has been assumed that these Tier 1 project construction timescales overlap with the MHPGC Project construction period of 2033 to 2037. Tier 1 project DCC5 is commercial or industrial in nature, DCC8 is travel and infrastructure, and the DCC6, DCC12, DCC13 and SCC27 proposals are residential developments. The latter is currently refused so not considered to create cumulative effects at this stage.

Impact of permanent or temporary land take/land use change

- 3.10.3.3 There is potential for cumulative permanent and temporary land take/land use change as a result of activities associated with MHPGC Project and other projects that are under construction, in operation and maintenance or with planned decommissioning. The summary of the Cumulative Effects Assessment is presented in **Table 3-22**.
- 3.10.3.4 Impacts are considered for the following ecological receptors:
- Reedbeds HPI - F2e;
 - Open Mosaic Habitats on Previously Developed Land HPI - U1d 80 – suburban mosaic of developed and natural surface;
 - Other standing water (including ponds) – R1g;
 - Hedgerows HPI including: H2 - hedgerows; h2a – native hedgerows; h26a – other native hedgerow;
 - Watercourses including: R1 50 – standing open water and canals (ditch) / r2b – other rivers and streams;
 - Grasslands including: G3c – other neutral grassland;
 - Woodlands including: W1 – broadleaved and mixed woodland, w1h – other woodland; mixed, w1g – other broadleaved woodland;
 - Badger;
 - Bats – foraging, commuting and roosting;
 - Great crested newt;
 - Otter;
 - Water vole;
 - Fish;
 - Wintering and passage birds;
 - Breeding birds;

-
- White-clawed crayfish;
 - SPI and other conservation-notable terrestrial invertebrates;
 - SPI and other conservation-notable aquatic macroinvertebrates;
 - SPI and other conservation-notable aquatic macrophytes

Table 3-22: MHPGC Project CEA for Land take/Land Use Change

	Cumulative Effects Assessment
	Tier 1
Construction phase	
Magnitude of impact	<u>Tier 1</u> Cumulative effects from Tier 1 projects have the potential to affect the extent, structure and function as well as the distribution of habitats within 1km of the MHPC Project including other standing water, hedgerows, watercourses, grasslands and woodlands during the construction phase. This could therefore have impacts upon species utilising these habitats due to a loss and disturbance of foraging and commuting areas. However, impacts from land take/land use change are expected to have a local spatial extent It is understood that all projects listed within Table 3-21 comprise Town and Country Planning Act applications and are subject to approval by the Local Planning Authority (LPA). As such, each project must comply with relevant national and local planning policy, which require developments to demonstrate that construction activities will not cause significant harm to biodiversity and that appropriate avoidance and mitigation measures are developed as an integral part of the proposed development. . In addition, none of the projects predicted any significant effect on onshore ecological receptors. The MHPGC Project and the projects included within this assessment will have the requirement to achieve mandatory Biodiversity Net Gain. This would mean that any impact each project has on the habitat removed, should not have a cumulative effect with the MHPGC Project.. As a result, the cumulative effect is likely to be of Local importance and short-term due to the temporary loss of habitats as each project will need to achieve BNG. The magnitude of impact is therefore considered to be Low. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	Ecological receptors considered within this CEA are of Low to High sensitivity.
Significance of effect	It is considered that the receptor sensitivity is up to National/High and the magnitude of impact is Low . Therefore, the effect during the construction phase, is considered to be Minor , which is not significant in EIA and CIEEM terms.

	Cumulative Effects Assessment
Further mitigation and residual significance	No mitigation measures for ecological receptors are considered necessary in addition to the embedded mitigation commitments, because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Error! Reference source not found.), is not significant in EIA terms.
Operations and maintenance phase	
Magnitude of impact	<u>Tier1</u> There is not expected to be permanent or temporary land take/land use change that will result in negative impacts to the ecological receptors considered within this CEA. The magnitude of impact from Tier 1 projects is considered to be Negligible . <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	<i>As per construction phase.</i>
Significance of effect	
Further mitigation and residual significance	
Decommissioning phase	
Magnitude of impact	<u>Tier 1</u> Cumulative effects from Tier 1 projects may affect the extent, structure and functions as well as the distribution of habitats during the decommissioning phase of DCC5 and SCC27, which may overlap with the decommissioning of the MHPGC Project. This will therefore have indirect impacts upon species utilising these habitats due to a loss and disturbance of foraging and commuting areas. However, impacts from land take/land use change are expected to have a local spatial extent, and the magnitude of impact is considered to be Low . <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	<i>As per construction phase.</i>
Significance of effect	

	Cumulative Effects Assessment
Further mitigation and residual significance	

Fragmentation of habitats

3.10.3.5 Impacts are considered for the following receptors:

- Reedbeds HPI - F2e;
- Open Mosaic Habitats on Previously Developed Land HPI - U1d 80 – suburban mosaic of developed and natural surface;
- Other standing water (including ponds) – R1g;
- Hedgerows HPI including: H2 - hedgerows; h2a – native hedgerows; h26a – other native hedgerow;
- Watercourses including: R1 50 – standing open water and canals (ditch) / r2b – other rivers and streams;
- Grasslands including: G3c – other neutral grassland;
- Woodlands including: W1 – broadleaved and mixed woodland, w1h – other woodland; mixed, w1g – other broadleaved woodland;
- Badger;
- Bats – foraging, commuting and roosting;
- Great crested newt;
- Otter;
- Water vole;
- Fish;
- White-clawed crayfish;
- SPI and other conservation-notable terrestrial invertebrates;
- SPI and other conservation-notable aquatic macroinvertebrates;
- SPI and other conservation-notable aquatic macrophytes.

Table 3-23: MHPGC Project CEA for Fragmentation of Habitats

	Cumulative Effects Assessment
	Tier 1
Construction phase	
Magnitude of impact	<u>Tier 1</u> Cumulative effects from Tier 1 projects may affect habitat connectivity due to a loss and fragmentation of habitats during the construction phase, in particular the permanent loss of grassland habitats. This therefore has the potential to reduce commuting corridors throughout the local landscape for a range of species associated with these habitats, including badger, bats, and birds. It is understood that all projects listed within Table 3-21 comprise Town and Country Planning Act applications and are subject to approval by the Local Planning Authority (LPA). As such, each project must comply with relevant national and local planning policy, which require developments to demonstrate that construction activities will not cause significant harm to biodiversity and that appropriate avoidance and mitigation measures are developed as an integral part of the proposed development. Mitigation measures are likely to include planting of habitats to reinstate wildlife corridors where possible. Given the scale of the projects considered within this CEA and the minor fragmentation impacts assessed on MHPGC Project due to the majority of fragmentation impacts being temporary, impacts from habitat fragmentation are expected to have a local spatial extent, and the magnitude of impact is considered to be Low. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	Ecological receptors considered within this CEA are of Low to High sensitivity.
Significance of effect	It is considered that the receptor sensitivity is up to National/High and the magnitude of impact is Low . Therefore, the effect during the construction phase, is considered to be Minor , which is not significant in EIA and CIEEM terms.
Further mitigation and residual significance	No mitigation measures for ecological receptors are considered necessary in addition to the embedded mitigation commitments, because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Error! Reference source not found.), is not significant in EIA terms.
Operations and maintenance phase	
Magnitude of impact	<u>Tier1</u>

	Cumulative Effects Assessment
	There is not expected to be permanent or temporary habitat fragmentation that will result in negative impacts to the ecological receptors considered within this CEA. Habitat creation and maintenance within projects, in particular habitat creation associated with solar farms DCC5 and SCC27, may improve habitat connectivity and commuting corridors locally, therefore providing a low beneficial impact. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	<i>As per construction phase.</i>
Significance of effect	
Further mitigation and residual significance	
Decommissioning phase	
Magnitude of impact	<u>Tier 1</u> Cumulative effects from Tier 1 projects may cause temporary, reversible habitat fragmentation during the decommissioning phase of DCC5 and SCC27, which may overlap with the decommissioning of the MHPGC Project. However, given the scale of the projects considered within this CEA and that MHPGC decommission will not involve removal of the cable, impacts from habitat fragmentation are expected to have a local spatial extent, and the magnitude of impact is considered to be to Low. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	<i>As per construction phase.</i>
Significance of effect	
Further mitigation and residual significance	

Increased noise, vibration, light and movement levels

3.10.3.6 Impacts are considered for the following receptors:

- Northumbria Coast SPA and RAMSAR: all qualifying bird features;
- Durham Coast SSSI;
- Badger;
- Bats – foraging and commuting;
- Otter;
- Water vole;
- Fish;
- Wintering and passage birds;
- Breeding birds;
- White Clawed Crayfish.

Table 3-24: MHPGC Project CEA for Increased Noise, Vibration, Light and Movement Levels

	Cumulative Effects Assessment
	Tier 1
Construction phase	
Magnitude of impact	Tier 1 Cumulative impacts from increased noise, vibration, light and movement levels during construction are expected to have a local spatial extent and have a short-term duration. This will have negative impacts upon a range of protected and priority species utilising habitats within and surrounding Tier 1 projects, including nocturnal species sensitive to light pollution such as bats and badger. This could result in the temporary disturbance of notable and protected species. Detail on the construction periods for a number of the Tier 1 project are not provided and so the disturbance from these impacts could be over a much larger combined area. It is understood that all projects listed within Table 3-21 comprise Town and Country Planning Act applications and are subject to approval by the Local Planning Authority (LPA). As such, each project must comply with relevant national and local planning policy, which require developments to demonstrate that construction activities will not cause significant harm to biodiversity and that appropriate avoidance and mitigation measures are developed as an integral part of the proposed development. As such it is assumed that each project will implement a range of embedded mitigation to avoid significant impacts on ecological receptors during construction. Given that noise, vibration, light and movement levels during construction are temporary and restricted to the local area of each Tier 1 project, the magnitude of impact is considered to be Low. Tier 2 No relevant cumulative projects have been identified. Tier 3 No relevant cumulative projects have been identified.
Sensitivity of receptor	Ecological receptors considered within this CEA are of Low to High sensitivity.
Significance of effect	It is considered that the receptor sensitivity is up to National/High and the magnitude of impact is Low . Therefore, the effect during the construction phase, is considered to be Minor , which is not significant in EIA and CIEEM terms.
Further mitigation and residual significance	No mitigation measures for ecological receptors are considered necessary in addition to the embedded mitigation commitments, because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 3-19), is not significant in EIA terms.

Cumulative Effects Assessment	
Operations and maintenance phase	
Magnitude of impact	<u>Tier1</u> Permanent increases in noise, light and movement within the operational phase of the residential developments are considered highly likely. This is due to external lighting on buildings and along access roads associated with the development, and noise from increased traffic and human activity. Increased human activity and movement could have regional effects, due to an increase in recreational activities within designated sites, leading to habitat degradation and disturbance to species within them. Effects from the MHPGC Project during the O&M stage on designated sites are negligible. The indirect effects of the nature are unlikely to result in a cumulative effect, therefore the magnitude of impact is considered to be negligible. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	Ecological receptors considered within this CEA are of Low to Very High sensitivity .
Significance of effect	It is considered that the receptor sensitivity is up to International /Very High and the magnitude of impact is negligible . Therefore, the effect during the operation and maintenance phase, is considered to be Minor , which is not significant in EIA and CIEEM terms.
Further mitigation and residual significance	No mitigation measures for ecological receptors are considered necessary in addition to the embedded mitigation commitments, because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 3-19 Error! Reference source not found.), is not significant in EIA terms.
Decommissioning phase	
Magnitude of impact	<u>Tier 1</u> Cumulative effects from Tier 1 projects may cause temporary increases in noise, vibration, light and movements during the decommissioning phase of DCC5 and SCC27, which may overlap with the decommissioning of the MHPGC Project. This will have negative impacts upon species utilising habitats within and surrounding these projects. However, due to the works being temporary and having local spatial effects, the magnitude of impact is considered to be Low. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> No relevant cumulative projects have been identified.
Sensitivity of receptor	<i>As per construction phase.</i>

	Cumulative Effects Assessment
Significance of effect	
Further mitigation and residual significance	

3.10.4 Proposed monitoring

- 3.10.4.1 Site specific monitoring is not proposed because the assessment concluded that MHPGC Project would not give rise to significant effects for terrestrial ecology and ornithology either alone or when considered cumulatively with other plans, projects or activities. The Applicant will, however, continue to liaise with DCC and other key stakeholders to help identify opportunities for proportionate, evidence led regional or strategic monitoring that can improve understanding of the environmental implications onshore transmission infrastructure.

3.11 Transboundary effects

- 3.11.1.1 A screening of transboundary impacts has been carried out and any potential for significant transboundary effects with regard to terrestrial ecology and terrestrial and intertidal ornithology from the construction, O&M and decommissioning phases of the MHPGC Project upon interests of other states has been assessed as part of the PEIR.
- 3.11.1.2 The potential transboundary impacts are screened within **Volume 1, Annex 4.2: Transboundary Screening, of the PEIR**. There are no identified pathways through which either direct or indirect impacts could result in significant transboundary effects on the terrestrial ecology and terrestrial and intertidal ornithology of a European Economic Area (EEA).

3.12 Inter-related effects

- 3.12.1.1 Inter-related effects are the combined impact of multiple aspects of the MHPGC Project on a single receptor. These are as follows:
- **Project lifetime effects:** Assessment of the scope for effects that occur throughout more than one phase of the MHPGC Project (construction, O&M and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases.
 - **Receptor led effects:** Assessment of the scope for all effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor.
- 3.12.1.2 For Terrestrial Ecology and Terrestrial and Intertidal Ornithology, the following potential impacts have been considered within the inter-related assessment:
- Project lifetime effects arising from Permanent or temporary land take and land use change, resulting in the loss, degradation or modification of habitats and the displacement or loss of fauna, fragmentation of habitats, resulting in reduced habitat connectivity, disruption of ecological networks, and obstruction of species movement and migratory pathways and increased noise, vibration, lighting and human activity during construction and operation, resulting in disturbance, displacement, avoidance behaviour and potential changes to the distribution and behaviour of fauna.
 - Receptor led effects including interrelationships with effects assessed in **Volume 3, Chapter 1: Geology, Hydrogeology and Ground Conditions, of the PEIR, Volume 3, Chapter 2: Water Resources and Flood Risk of the PEIR, Volume 3 Chapter 5: Traffic and Transport, of the PEIR, Volume 3, Chapter 6: Onshore Noise and Vibration, of the PEIR, Volume 3, Chapter 7: Onshore Air Quality, of the PEIR, and Volume 3, Chapter 8: Land Use, Tourism and Recreation, of the PEIR**.
- 3.12.1.3 Inter-related effects are assessed within **Volume 4, Chapter 5: Inter-related Effects, of the PEIR** with no likely significant inter-related effects anticipated.

3.13 Summary

3.13.1 Summary of effects

- 3.13.1.1 This chapter has assessed the potential impacts on terrestrial ecology and terrestrial and intertidal ornithology from the construction, O&M and decommissioning phases of the MHPGC Project.
- 3.13.1.2 **Table 3-25** presents a summary of impacts and confirms the residual effects. The abbreviations 'c', 'o&m' and 'd' are used in order to denote 'construction', 'operation and maintenance' and 'decommissioning'.

3.13.2 Summary of secondary mitigation and monitoring

- 3.13.2.1 No secondary mitigation or monitoring has been identified at this stage.

Table 3-25: Summary of potential impacts and residual effects

Impact	Sensitivity/importance/value of receptor	Magnitude of change	Significance	Secondary mitigation and monitoring	Residual effect
Northumbria Coast SPA and Ramsar – All Features: <i>Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).</i>	Very High/International	Negligible (c, d, o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Durham Coast SAC – all features; Durham Coast SSSI – Habitat Features: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of qualifying habitats (resulting in a reduction in connectivity)</i>	Very High to High/International to National	Negligible (c, d, o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Durham Coast SSSI – Ornithological Features: <i>Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).</i>	High/National	Low (c, d, o&m)	Not Significant (c, d, o&m)	N/A	Not significant
f2e – Reedbeds (HPI): <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Medium/County	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
u1d80 – Suburban mosaic of developed and natural surface (Open mosaic habitats on previously developed land) (HPI): <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Medium/County	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant

Impact	Sensitivity/importance/value of receptor	Magnitude of change	Significance	Secondary mitigation and monitoring	Residual effect
r1g 40 – Other standing water (Ponds; priority habitat) (HPI) / r1g 41 – Other standing water (Ponds; non-priority habitat): <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Medium/County	Low(c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
h2a – Native hedgerow (HPI) / h2a 11 – Native hedgerow (Hedgerow with trees) (HPI) / h2a6 – Other native hedgerow (HPI) / h2a6 11 – Other native hedgerow (Hedgerow with trees) (HPI): <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Medium/County	Low(c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Watercourses: r1 50 – Standing open water and canals (Ditch) / r2b – Other rivers and streams: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Medium/County	Low(c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Other non-priority habitats with biodiversity benefit: g2c – Other calcareous grassland: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Low/Local	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant

Impact	Sensitivity/importance/value of receptor	Magnitude of change	Significance	Secondary mitigation and monitoring	Residual effect
Other non-priority habitats with biodiversity benefit: g3c – Other neutral grassland: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Low/Local	Medium (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A.	Not significant
Other non-priority habitats with biodiversity benefit: w1f – Lowland mixed deciduous woodland / w1f7 – Other lowland mixed deciduous woodland / w1g and w1g 33 – Other broadleaved woodland (including Line of trees) / w1h – Other woodland; mixed / w1h5 – Other woodland, mixed, mainly broadleaved: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Low/Local	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Other non-priority habitats with biodiversity benefit: f2 – Fen, marsh and swamp / f2f – Other wetlands: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity)</i>	Low/Local	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Badger: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).</i>	Low/Local	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant

Impact	Sensitivity/importance/value of receptor	Magnitude of change	Significance	Secondary mitigation and monitoring	Residual effect
Bats – foraging and commuting; common pipistrelle, soprano pipistrelle, Daubenton's bat, noctule bat and brown long-eared bat: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).</i>	Up Medium/County to	Low (c, d) Low (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Bats – roosting; common pipistrelle, soprano pipistrelle, Daubenton's bat, noctule bat and brown long-eared bat: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).</i>	Up High/Regional to	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Great crested newt: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).</i>	Up Medium/County to	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Otter and Water Vole: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).</i>	Up Medium/County to	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant

Impact	Sensitivity/importance/value of receptor	Magnitude of change	Significance	Secondary mitigation and monitoring	Residual effect
Freshwater fish: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); Fragmentation of habitats (resulting in a reduction in connectivity - physical barriers to migration); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)</i>	Up to High/National	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Wintering and passage birds: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).</i>	Low/Local	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
Breeding birds: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement).</i>	High to Low/National to Local	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
White-clawed crayfish: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity); and Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)</i>	High/National	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant

Impact	Sensitivity/importance/value of receptor	Magnitude of change	Significance	Secondary mitigation and monitoring	Residual effect
SPI and other conservation-notable terrestrial invertebrate species: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).</i>	Low/Local	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
SPI and other conservation-notable aquatic macroinvertebrates: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).</i>	Up to Medium/Regional	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant
SPI and other conservation-notable aquatic macrophytes: <i>Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna); fragmentation of habitats (resulting in a reduction in connectivity).</i>	Up to Medium/Regional	Low (c, d) Negligible (o&m)	Not Significant (c, d, o&m)	N/A	Not significant

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