Morven Offshore Wind Farm



Morven Hawthorn Pit Grid Connection Project

Preliminary Environmental Information Report

Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report

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Glossary

Term	Meaning
AC connection cables	Alternating Current (AC) cables that will connect the proposed onshore land substation to the National Grid Hawthorn Pit Substation
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Desk study	A desk-based research method used to collect and analyse existing information, including the review of literature, previous survey reports, databases and maps to inform the baseline environment and the need for further surveys.
Expert Working Group	A topic-specific group of specialists formed under the evidence plan process (EPP) to resolve technical issues and agree approaches for environmental assessments.
Field survey	The direct on-site observation and collection of environmental data, through sampling and recording, undertaken within the Survey Area.
Final Condition Score	The final condition score in a River Condition Assessment (RCA) is a qualitative classification that translates a numerical preliminary score into one of five categories: Good, Fairly Good, Moderate, Fairly Poor, or Poor. This final score is determined by the Preliminary Condition Score.
Habitat Condition Assessment	Process to establish the baseline ecological value of a habitat largely for Biodiversity Net Gain Assessments.
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 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.
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).
MHPGC Project Environmental Statement (ES)	The document presenting the results of the Environmental Impact Assessment process.
MHPGC Project PEIR Red Line Boundary	The area within which all components of the MHPGC Project will be located, including areas required on a temporary basis during construction and/or decommissioning (such as construction compounds).
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.

Term	Meaning
MHPGC Project Scoping Boundary	The spatial extent of the area used to define the environmental baseline to inform impact assessments at the time the MHPGC Project Scoping Report was submitted.
MHPGC Project Scoping Opinions	Separate scoping opinions received from PINS (on behalf of the Secretary of State) and MD-LOT (on behalf of the Scottish Ministers) in response to the MHPGC Project Scoping Report. The MHPGC Project Scoping Opinions contain the range of issues that PINS, and MD-LOT in consultation with statutory stakeholders, have identified should be considered within the EIA process.
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.
Mean High Water Springs	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.
Morven Hawthorn Pit Grid Connection Project (hereafter 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. Also referred to in this report as the MHPGC Project, for ease of reading.
Offshore Substation Platforms (OSPs)	OSP(s) comprise the support structure, topside and electrical components used for collecting the electricity generated by the wind turbine generators, in Scottish waters, for the passage or transmission to landfall. These OSP(s) can be divided into two types: - HVAC collector substations; - HVDC converter substations.
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.
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 Condition Score	The average of all positive indicators plus the average of all negative indicators in a River Condition Assessment (RCA).
Preliminary Assessment	An initial inspection of a given ecological feature.
Preliminary Environmental Impact Report (PEIR)	A preliminary assessment of the likely significant effects of the MHPGC Project on the physical, biological, and human environment during construction, operations and maintenance and decommissioning phases. The PEIR is submitted prior to the preparation of the Environmental Statement and is based on currently available

Term	Meaning
	information and is used to inform statutory consultation under section 42 of the Planning Act 2008. The MHPGC Project PEIR will be used by the Applicant to support the statutory consultation.
River Condition Assessment (RCA)	RCA combines Modular River Physical (MoRPh) field survey with a geomorphological River Type desk study. The RCA method provides environmental professionals with the in depth knowledge and software tools to enable the baseline assessment of river condition together with scenario modelling for target condition, as needed for biodiversity net gain reporting.
River Type Assessment	Measures eight physical characteristics of the watercourse and placed it within one of fifteen River Types (labelled A-M), in addition to the unique type (large).
River Width	The typical water width and width of regularly inundated bare sediment or marginal/emergent plants at the water edge
the Study Area	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 across which likely significant effects of the MHPGC Project may be experienced by the relevant receptors (i.e. Zone of Influence (ZoI)).
Survey Area	The area within which field surveys for the environmental topic are undertaken. This would include all areas for which impacts from the MHPGC Project may occur on relevant receptors.
Target Note	A feature identified during field work which doesn't fit a particular ecological feature survey symbology but needs to be highlighted as part of the survey data.

Acronyms

Acronym	Meaning
AC connection cables	Alternating Current connection cables
BNG	Biodiversity Net Gain
DAFOR	Dominant, Abundant, Frequent, Occasional, Rare
DAS	Discretionary Advice Service
DBH	Diameter at Breast Height
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ERIC NE	Environmental Records Information Centre North East
ES	Environmental Statement
EU	European Union
GWDTE	Groundwater Dependent Terrestrial Ecosystem
HPI	Habitat of Principal Importance

Acronym	Meaning
INNS	Invasive Non-Native Species
MAVIS	Modular Analysis of Vegetation Information System
MD-LOT	Marine Directorate – Licencing Operations Team
MHPGC	Morven Hawthorn Pit Grid Connection
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MoRPh	Modular River Physical
NNR	National Nature Reserve
NSIP	National Significant Infrastructure Project
NVC	National Vegetation Classification
LSS	Onshore Land Substation
OSPs	Offshore Substation Platforms
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
RCA	River Condition Assessment
SAC	Special Area of Conservation
SoS	Secretary of State
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site of Special Scientific Interest
UKHab	UK Habitat Classification

Units

Unit	Meaning
ha	Hectare
km	Kilometre
m	Metre
m^2	Metre squared

Executive summary

This report presents the results of the habitat and vegetation surveys undertaken to inform **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR.** Surveys comprised UK Habitat Classification (UKHab), National Vegetation Classification (NVC), River Condition Assessment (RCA) and hedgerow surveys. These surveys were undertaken in 2025 and 2026 to classify the habitats and to assess botanical features present within the Morven Hawthorn Pit Grid Connection Project (hereafter 'MHPGC Project') Preliminary Environmental Information Report (PEIR) Red Line Boundary: Onshore.

UKHab field surveys were undertaken to identify and map habitat types and their distribution across the Survey Area. This survey was supported by a desk study which involved a review of all existing datasets and aerial imagery.

The UKHab desk study indicated that the UKHab Survey Area is dominated by agricultural habitats, mainly cereal crops and grazing pasture, alongside woodland, hedgerows and coastal cliff habitat types. Field surveys confirmed that arable cropland and modified grassland were the most abundant habitat types. Additional habitats of note included areas of other neutral grassland, wetlands, scrub and areas of broadleaved and mixed woodland. Invasive non-native plant species recorded within the Survey Area included giant hogweed (*Heracleum mantegazzianum)*, Himalayan balsam (*Impatiens glandulifera)* and Japanese knotweed (*Reynoutria japonica)*.

Targeted NVC surveys were also undertaken within ten discrete areas identified as being of higher ecological value, including designated sites and wetlands. The objective of the surveys was to classify the vegetation communities present in accordance with established NVC methodologies. Four areas were determined to support recognisable NVC communities, including three types of wetland habitat.

RCA surveys were undertaken to establish the condition of watercourses within the Survey Area. The desk study identified four watercourses within the MHPGC PEIR Red Line Boundary: Onshore. The RCA field surveys confirmed that two of these watercourses required detailed Modular River Physical (MoRPh) field surveys, while two were scoped out of requiring further assessment as they were identified as ditches. The assessed watercourses, South Hetton Burn and Hallfield Burn, were classified as straight sinuous rivers. South Hetton Burn was recorded as being in Moderate condition and Hallfield Burn in Fairly Good condition. No further RCA survey is considered necessary.

Hedgerow surveys were undertaken to record distribution and condition of hedgerows within the Hedgerow Survey Area, including consideration of their ecological value and potential to meet the criteria of 'important' hedgerows under the Hedgerows Regulations 1997. A total of 43 hedgerows were recorded within the Survey Area, with a combined length of approximately 13.9 km. The majority were classified as species-poor native hedgerows (UKHab type h2a6), typically dominated by hawthorn (*Crataegus monogyna*) with occasional occurrences of blackthorn (*Prunus spinosa)*, elder (*Sambucus nigra)*, and dog-rose (*Rosa canina)*.

1 Introduction

1.1 Overview

1.1.1.1 This report presents the findings of the UK Habitat Classification (UKHab) including condition assessment, National Vegetation Classification (NVC), River Condition Assessment (RCA) and Hedgerow Survey for the Morven Hawthorn Pit Grid Connection Project (hereafter the 'MHPGC Project'). It forms **Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report**, **of the Preliminary Environmental Information Report (PEIR)** prepared for the MHPGC Project and supports **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR**.

1.1.1.2 UKHab survey is a field-based habitat mapping exercise undertaken in accordance with best practice guidance (UKHab Ltd, 2023), providing a standardised approach to classify and map habitats within or adjacent to a proposed development site.

1.1.1.3 NVC surveys are detailed botanical surveys used to identify and classify vegetation communities according to the recognised NVC system for Great Britain, as set out in the British Plant Communities volumes 1-5 (Rodwell, 1991a; 1991b; 1992; 1995; 2000), enabling habitats to be described and evaluated in a standardised way.

1.1.1.4 RCA comprises a desk-based geomorphological assessment to identify river type, supported by Modular River Physical (MoRPh) field surveys to record in-channel and riparian habitat features and assess watercourse condition. The survey followed methodology outlined in The MoRPh Survey Technical Reference Manual (Gurnell and Shuker, 2022).

1.1.1.5 Hedgerow surveys are undertaken to determine whether hedgerows qualify as 'important' or 'not important', as defined by the Hedgerows Regulations 1997 (the 'Hedgerows Regulations'). 'Important' hedgerows are considered to be of greater ecological importance than 'not important' hedgerows.

1.1.1.6 This report presents the results of these surveys and provides a basis for describing the extent, distribution and ecological importance of habitats, hedgerows and vegetation communities within and in proximity to the MHPGC PEIR Red line Boundary: Onshore. Supporting figures and summary tables are provided for UKHab habitat types, along with separate figures and tables presenting hedgerows and watercourses.

1.1.1.7 This report includes data from field surveys undertaken up to the end of April 2026. Further surveys were completed in 2026 to complete the survey coverage for the UKHab, NVC and Hedgerow Surveys. Field survey data gathered after April 2026 shall be reported on in the MHPGC Project Environmental Statement (ES).

1.2 Legislative and Policy Context

1.2.1 Conservation of Habitats and Species Regulations 2017 (as amended) (UK Government, 2017)

1.2.1.1 The Habitats Directive (Council Directive 92/43/EEC), adopted in 1992, established a legislative framework for the conservation of natural habitats and wild flora and fauna across the European Union (EU). Together with the Birds Directive, it provided the basis for the designation of a coherent ecological network of protected sites known as Natura 2000, comprising Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Following the UK's departure from the EU, Special Area of Conservation (SAC) and Special Protection Area (SPA) in the UK form part of the National Site Network established under the Conservation of Habitats and Species Regulations 2017 (as amended).

1.2.1.2 The Conservation of Habitats and Species Regulations 2017 (as amended) (commonly known as the 'Habitats Regulations') provide the principal legislative framework for the protection of habitats and species of European importance in England and Wales. Originally enacted to transpose the Habitats

Directive and elements of the Wild Birds Directive into domestic law, the Habitats Regulations were amended following EU Exit to ensure their continued operation in domestic legislation. The Regulations provide for the protection and management of sites within the National Site Network.

1.2.1.3 In addition to providing for the designation and protection of SACs and SPAs within the National Site Network, the Habitats Regulations provide strict protection for plant and animal species as European Protected Species. 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. Competent authorities have a general duty, in the exercise of any of their functions, to have regard to the Habitats Directive and Wild 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 National Site Network site, with certain exceptions (considerations of overriding public interest).

1.2.2 Wildlife and Countryside Act 1981 (as amended)

1.2.2.1 The Wildlife and Countryside Act 1981 (as amended) forms the basis of much of the statutory wildlife and habitat protection in the Great Britain. Part I provides protection of wild birds, certain plants and animals, and includes measures relating to non-native species. Part II contains provisions relating to nature conservation, including notification and protection of Sites of Special Scientific Interest (SSSIs).

1.2.2.2 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. All wild birds, their nests and eggs are protected with additional protection provided to species listed on Schedule 1. The Act also includes provision controlling the release and spread of non-native species, including species listed on Schedule 9.
- Nature Conservation – providing for the notification, protection and management of 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 – including provisions relating to countryside management and other supporting measures.

1.2.3 Natural Environment and Rural Communities (NERC) Act 2006 (as amended)

1.2.3.1 Section 40 of the NERC Act (as amended) places a duty on public authorities to have regard to the purpose of conserving and enhancing biodiversity when exercising their functions in England. Section 41 requires the Secretary of State (SoS) to maintain lists of species and habitats which are regarded as being of principal importance for the conservation and enhancement of biodiversity in England. 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 and enhancement of biodiversity in England when carrying out their normal functions.

1.2.4 The Environment Act 2021

1.2.4.1 The Environment Act 2021 translates aspects of the government's "*A Green Future: Our 25 Year Plan to Improve the Environment*" into legislation. 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 LNRS in the process.

1.2.4.2 A legal requirement for projects consented under the Planning Act 2008 to deliver a biodiversity net gain commitment will come into force in 2nd November 2026. A direction under section 35 of the Planning Act 2008 from the SoS for Energy and Net Zero was made in March 2024 confirming that

the MHPGC Project should be treated as a development for which development consent is required under the Planning Act 2008 for the onshore and offshore components in England, as such the MHPGC Project will be subject to the mandatory biodiversity gain commitment.

1.2.5 The Hedgerows Regulations 1997 (as amended) (UK Government, 1997)

1.2.5.1 Legislation that protects 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 Hedgerows Regulations.

1.2.5.2 Further details on the legislation outlined in this Section can be found in **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR.**

1.3 Consultation and engagement

1.3.1 Environmental Impact Assessment - scoping

1.3.1.1 The MHPGC Project Scoping Report was issued to the PINS and MD-LOT in November 2024 (RPS, 2025). Following consultation with the appropriate statutory bodies, PINS (on behalf of the SoS) and MD-LOT provided a Scoping Opinion in March 2025 (PINS, 2025; MD-LOT, 2025).

1.3.1.2 Section 3.3 of Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR sets out the key comments raised during the scoping process specific to terrestrial ecology and terrestrial and intertidal ornithology.

1.3.2 Expert Working Groups

1.3.2.1 The scope, methodology and findings of the UKHab, NVC, RCA and hedgerow surveys completed to date have been discussed and, where appropriate, agreed with stakeholders via the Onshore Ecology and Onshore and Intertidal Ornithology Expert Working Group (EWG) meetings. Further detail regarding consultation undertaken with respect to terrestrial ecology and terrestrial and intertidal ornithology through the EWG can be found in Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR.

2 Methodology

2.1 UKHab surveys

2.1.1 Overview

2.1.1.1 UKHab surveys were undertaken to characterise the type, extent and distribution of habitats present and to establish baseline conditions. Surveys were undertaken in accordance with best practice guidance set out in the UK Habitat Classification Version 2.0 guidance (UKHab Ltd, 2023). Distinct habitat types and parcels were identified and mapped to produce a detailed, site-specific map of the habitats present within the UKHab Survey Area (as defined in **Section 2.1.3**).

2.1.2 Study area

2.1.2.1 The study area defines the geographical extent within which potential ecological effects (direct or indirect) may occur and therefore informs the scope of the desk study.

2.1.2.2 For the purpose of the UKHab assessment, the study area (hereafter referred to as the UKHab Study Area) comprises the MHPGC PEIR Red Line Boundary: Onshore plus a 2km buffer. This buffer reflects a precautionary zone of influence consistent with best practice (CIEEM, 2018). The UKHab Study Area is shown in **Figure 2.1.**

2.1.3 Survey area

2.1.3.1 The survey area is defined as the area which is subject to field surveys as shown in **Figure 2.2.**

2.1.3.2 The survey area for the UKHab surveys (hereafter referred to as the UKHab Survey Area) comprises the MHPGC PEIR Red Line Boundary: Onshore and a 30m buffer.

2.1.3.3 Exceptions included where connectivity to a local feature was deemed relevant, or, where land use affords limited ecological connectivity, such as roads. The UKHab Survey Area is shown in **Figure 2.2.**

2.1.4 Methodology

Desk study

2.1.4.1 A desk based review was undertaken of all available data prior to undertaking the field surveys. This included a review of aerial imagery, previous survey data (WSP, 2023) and records obtained from Environmental Records Information Centre North East (ERIC NE).

2.1.4.2 The purpose of this desk study was to inform survey design, identify potential ecological constraints and target field survey effort.

Field survey

2.1.4.3 The UKHab surveys were undertaken by suitably qualified ecologists across three separate visits on the following dates: 10 to 12 June 2025, 28 July to 01 August 2025; 18 to 20 August 2025; 01 to 02 April 2026; and 06 to 10 July 2026. At the time of writing this report, further surveys are scheduled, the results of which will be included in the ES.

2.1.4.4 The UKHab surveys comprised a walkover and preliminary assessment of key habitats, land use and ecological features, particularly focusing on areas of natural interest which have the potential to be affected by the MHPGC Project. At the same time, a habitat condition assessment was carried out following the methodology in Defra's Biodiversity Metric. During the walkover surveys, the main habitats present were classified using standard UKHab methodology and definitions described in the UK Habitat Classification Version 2.0 guidance (UKHab Ltd, 2023).

2.1.4.5 Target notes were used to record habitats and features of particular interest. In addition to general habitat classification, a list was compiled of observed plant species (using the nomenclature of

Stace, 2019). The relative abundance of each species was estimated for each habitat respectively using standard 'DAFOR' codes:

- **D** = Dominant;
- **A** = Abundant;
- **F** = Frequent;
- **O** = Occasional;
- **R** = Rare

2.1.4.6 Habitats were mapped in the field using ArcGIS FieldMaps application on a handheld tablet. Photographs and grid references were recorded where relevant. Minimum Mapping Units used were 25m^2 which are in line with best practice guidelines (DEFRA, 2026).

2.1.5 Limitations

2.1.5.1 At the time of writing, UKHab field surveys were completed for approximately 92% of the UKHab Survey Area, as shown in **Figure 2.2.** As noted in **Paragraph 2.1.3.3**, the remaining 8% could not be accessed due to land access and H&S restrictions. Inaccessible areas were interpreted using a combination of adjacent field observations and a review of aerial photography and historical survey data. These areas were predominantly built-up areas and intensively managed agricultural habitat with little ecological value. Additional visits were undertaken in 2026 to achieve complete coverage, where possible. Additional survey visit data will be included within the MHPGC ES.

2.1.5.2 Private gardens, roads and carriageway embankments, railways and railway embankments and areas under construction were excluded from the UKHab Survey Area due to access and H&S restrictions.

2.1.5.3 Notwithstanding the above limitations, the survey coverage and approach are considered sufficient to characterise baseline habitat conditions and complete a preliminary impact assessment for the purposes of **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR**, using precautionary principle where necessary.

2.2 NVC surveys

2.2.1 Overview

2.2.1.1 NVC surveys were undertaken within identified habitats of higher ecological value as detailed below in **Paragraph 2.2.3.2**, such as habitats present within designated sites (i.e. SSSIs) and sensitive habitats such as woodlands and wetlands. The objective was to classify the plant communities present within each of these habitat parcels (as defined in **Section 2.2.3**) through targeted botanical assessment, providing a more detailed characterisation than was afforded by the UKHab survey alone.

2.2.2 Study area

2.2.2.1 The NVC Study Area is consistent with that adopted for the UKHab assessment, and comprises the MHPGC PEIR Red Line Boundary: Onshore, with a 2km buffer applied.

2.2.3 Survey area

2.2.3.1 For the purpose of the NVC surveys, the survey area (hereafter referred to as the NVC Survey Area) comprises habitats of higher ecological value located within the MHPGC PEIR Red Line Boundary: Onshore, and an additional 30m buffer, where relevant to capture functionally connected habitats. Noting, that the buffer was extended to 100m with respect to the Hawthorn Dene SSSI to include greater coverage of the designated site

2.2.3.2 Habitats selected for NVC survey were identified through a combination of UKHab mapping, desk study review and stakeholder consultation (including Natural England via the EWG).

2.2.3.3 The NVC Survey Area is shown in **Figure 2.3.**

2.2.4 Methodology

Desk study

2.2.4.1 A desk-based review was undertaken in conjunction with the UKHab desk-based review. This was used to identify habitats of higher ecological value, including habitats present within designated sites (i.e. SSSIs) and sensitive habitats such as woodlands and wetlands. The review was also used to refine the selection of riparian areas requiring detailed NVC survey.

2.2.4.2 Data sources included aerial imagery, historical survey data (WSP, 2023) and records obtained by ERIC NE.

Field survey

2.2.4.3 The NVC surveys were undertaken by suitably qualified ecologists on three separate visits on the following dates: 10 to 12 June 2025, 28 July to 01 August 2025 and 18 to 20 August 2025. Further surveys in 2026 were undertaken on 06 to 10 July and 19 to 20 August 2026, to provide full coverage of Durham Coast SSSI and Hesledon Moor East SSSI; and habitats forming parts of Hawthorn Dene SSSI and Hesledon Moor West SSSI; and sensitive habitats within the NVC Survey Area. The results of the NVC surveys completed in 2026 will be reported in the ES.

2.2.4.4 The NVC surveys were undertaken alongside the UKHab surveys, with targeted botanical assessment undertaken within habitat identified as requiring detailed classification.

2.2.4.5 Vegetation was classified in accordance with the National Vegetation Classification (Rodwell, 2006). Within each habitat parcel, five 2m^2 quadrats were surveyed. All plant species within each quadrat were recorded with an estimate of percentage cover and abundance using the Domin scale (Rodwell, 2006) outlined in **Table 2.1**. The frequency of each species was determined based on the number of quadrats in which each species occurred (Rodwell, 2006) (**Table 2.2**).

Table 2.1: Domin scale

Cover	Domin
91-100%	10
76-90%	9
51-75%	8
34-50%	7
26-33%	6
11-25%	5
4-10%	4
<4% (many individuals)	3
<4% (several individuals)	2
<4% (few individuals)	1

Table 2.2: Frequency of species

Frequency class	% of quadrants in which species recorded	Frequency measure
I	1-20%	Scarce
II	21-40%	Occasional
III	41-60%	Frequent
IV	61-80%	Constant
V	81-100%	Constant

2.2.4.6 The software MAVIS (Modular Analysis of Vegetation Information System) was utilised to compare the data collected within each habitat with published data (i.e. plant communities detailed within the British Plant Communities volumes (Rodwell 1991a; 1991b; 1992; 1995; 2000)) to aid in the identification of plant communities. The results were reviewed to ascertain the most appropriate plant community, defined by an NVC name and code.

2.2.5 Limitations

2.2.5.1 At the time of writing, NVC data is available for approximately 8% of the NVC Survey Area, as shown in **Figure 2.3.** Access to some areas was not possible due to land access restrictions such as access refusals or on-site access constraints.

2.2.5.2 It should be noted that identified habitats of higher ecological value within private gardens, along road verges and carriageway embankments, railways and railway embankments and areas under construction were excluded from the NVC Survey Area due to access restrictions.

2.2.5.3 In addition, further areas that were scoped in based on consultation feedback could not be surveyed within 2025 due to seasonal restrictions. All of these areas have been surveyed in July 2026 and the results of the surveys will be included within the ES. Overall, the coverage and approach, together with the findings of the desk study, are considered appropriate and robust for the purposes of informing the characterisation of baseline conditions reported in **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR**.

2.3 RCA surveys

2.3.1 Overview

2.3.1.1 RCA surveys were completed to assess the ecological health, quality and function of watercourses present within the RCA Survey Area (as defined in **Section 2.3.3**). The surveys also inform the watercourse component of the BNG assessment.

2.3.2 Study area

2.3.2.1 The RCA Study Area is consistent with that adopted for the UKHab assessment and comprises the MHPGC PEIR Red Line Boundary: Onshore, with a 2km buffer applied.

2.3.3 Survey area

2.3.3.1 The survey area considered for RCA (hereafter referred to as the RCA Survey Area) comprises suitable watercourses within the MHPGC PEIR Red Line Boundary: Onshore and an additional 30m buffer, where relevant, to include hydrologically connected features.

2.3.3.2 It should be noted that watercourses within private gardens, or adjacent to roads and carriageway embankments, railways and railway embankments, and areas under construction were excluded from the RCA Survey Area due to access restrictions. A combination of aerial imagery review and observations from accessible adjacent land was used at the scoping stage to identify and verify suitable watercourses for survey. The RCA Survey Area is shown in **Figure 2.4.**

2.3.4 Methodology

Desk study

2.3.4.1 Prior to the commencement of field surveys, a desk-based review of aerial imagery was undertaken to identify watercourses within the UKHab Survey Area. This review, combined with the UKHab field survey findings informed the scope of the RCA Survey Area.

2.3.4.2 Following completion of the RCA field surveys, a review was undertaken to supplement field survey data. This incorporated survey details such as bed material, with information collected in the desk study covering river planform, valley gradient and valley confinement (post-survey RCA desk study). A series of indicators were derived from the combined data, enabling classification of each watercourse into an indicative river type, as detailed in Section 2.3.4.8. The indicative river type was used to translate the Preliminary Condition Score (which is the average of all positive indicators plus the average of all negative indicators) into a Final Condition Score. This information informs the BNG assessment as well as providing further information on riparian habitats.

Field surveys

2.3.4.3 The RCA survey was carried out in August 2025 by a certified surveyor holding RCA accreditation. Surveys were carried out in accordance with the MoRPh survey methodology outlined in The MoRPh Survey Technical Reference Manual (Gurnell and Shuker, 2022). The river type was also assigned in accordance with the Guide to Assessing River Condition (Gurnell et al., 2022).

2.3.4.4 The RCA approach aims to sample each river/watercourse by surveying modules across five survey locations (collectively referred to as a MoRPh5) at which the physical and habitat features are recorded. The length of each module was determined by the MoRPh River Width; estimated as the typical water width and width of regularly inundated bare sediment or marginal/emergent plants at the water edge.

2.3.4.5 The MoRPh field surveys extended 10m from the river/watercourse bank top. The surveyor recorded information relating to river/watercourse morphometrics, including bank top, bank face, channel margin and the riverbed. The survey captured the extent and character of:

- sediment composition;
- morphological and hydraulic features/habitats;
- riparian and aquatic vegetation extent and structure;
- presence and extent of non-native invasive plant species;
- land use;
- human intervention.

2.3.4.6 Watercourses identified as artificial ditches were excluded from field surveys as they do not fall into any RCA category.

Data analysis

2.3.4.7 Once field data was uploaded into the MoRPh information system, river condition was assessed using 32 condition indicators that were automatically extracted from MoRPh field surveys. The River Type Assessment measures eight physical characteristics of the watercourse and placed it within one of fifteen River Types (labelled A-M), in addition to the unique type (large).

2.3.4.8 Each of these river types uses a different range of river condition scores (calculated as part of the MoRPh surveys) to determine river condition. The Preliminary Condition Score for the sub-reach was then calculated as the sum of the average of the positive condition indicator scores and the average of the negative condition indicator scores. The results of each characteristic measured was scored from -4 to 4. The combined score for each characteristic from the five surveys was then averaged to generate the Final Condition Score. Final Condition Scores can fall within the following categories: Good, Fairly Good, Moderate, Fairly Poor and Poor.

2.3.4.9 The field surveys, along with post survey RCA desk study were required to generate the river condition outputs for DEFRAs Biodiversity Metric Calculation Tool (DEFRA, 2026).

2.3.5 Limitations

2.3.5.1 No significant limitations were noted for the surveys. Surveys were completed for all of the relevant river/watercourses within the RCA Survey Area, as shown in **Figure 2.4.** Overall, the coverage and approach is considered sufficient to characterise baseline river condition for the purposes of informing **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology of the PEIR**.

2.4 Hedgerow surveys

2.4.1 Overview

2.4.1.1 The objective of the hedgerow surveys was to map the distribution and condition of hedgerows within the Hedgerow Survey Area (as defined in **Section 2.4.3**), to identify those with particular value for wildlife, and to determine whether any of the hedgerows have the potential to be classified as 'important' under the Hedgerows Regulations 1997 under the ecological criteria.

2.4.2 Study area

2.4.2.1 The Hedgerow Study Area considered for hedgerows is consistent with that adopted for the UKHab assessment and comprises the MHPGC PEIR Red Line Boundary: Onshore, with a 2km buffer applied.

2.4.3 Survey area

2.4.3.1 The Hedgerow Survey Area comprises all hedgerows within the MHPGC PEIR Red Line Boundary: Onshore and an additional 30m buffer, where relevant to capture functionally connected features.

2.4.3.2 A combination of aerial imagery review and observations from accessible adjacent land was used at the scoping stage to identify and verify hedgerows for survey. The Hedgerow Survey Area is shown in **Figure 2.5**.

2.4.4 Methodology

Desk study

2.4.4.1 Prior to the commencement of field surveys, a desk-based review of aerial imagery was undertaken to identify hedgerows within the UKHab Survey Area. This review, combined with the UKHab field survey findings, informed the scope of the Hedgerow Survey Area.

Field survey

2.4.4.2 An initial assessment of hedgerows was carried out in conjunction with the UKHab field survey. Hedgerow locations were mapped and were assessed for their potential to qualify as 'important' under the Hedgerows Regulations 1997. Hedgerow surveys were undertaken on three separate visits on the following dates: 10 to 12 June 2025, 28 July to 01 August 2025 and 18 to 20 August 2025.

2.4.4.3 Further surveys were completed in April, July and September 2026 to confirm hedgerow type and condition. These surveys included all hedgerows within the Hedgerow Survey Area, where relevant hedgerows are defined as a boundary line of trees or shrubs over 20m long and less than 5m wide at the base (provided they are largely continuous). The results of these surveys shall be reported on in the MHPGC Project ES.

2.4.4.4 In accordance with best practice set out in the Hedgerow Survey Handbook (Defra, 2007), hedgerows were surveyed in 30m sections. The survey included identification of the hedgerow type, characteristics and associated features, as defined in the Hedgerow Survey Handbook (Defra, 2007) and summarised in **Table 2.3** and **Table 2.4** respectively.

Table 2.3: Hedgerow types (Defra, 2007)

Hedgerow type	Description
Shrubby hedgerow	A line of woody hedgerow plants that have some or all of their leafy canopies <2m in height from the ground so that woody linear features as a whole appears as a 'shrubby' hedgerow, even though some of the woody species are capable of growing into trees. The shrubby component must be <5m wide. May have hedgerow trees along its length, but their canopies should be >20m apart.
Line of trees	A line of trees where the base of the canopy is >2m from the ground and the gap between tree canopies is <20m, so that the woody linear features appears as a 'line of lollipops'. The width at the base should be <5m. There may be a distinct shrub layer beneath the line of trees but this shrub layer must have <2m of continuous canopy cover.
Shrubby hedgerow with trees	A shrubby hedgerow of trees of >20m of woody hedgerow plants where the distance between the ground and the base of the leafy layer is <2m, so that the woody linear feature as a whole appears as a 'shrubby layer plus lollipops'. The shrubby components must be <5m wide at the base
Gappy hedgerows[1]	Both shrubby hedgerows and shrubby hedgerows with trees can range from a complete continuous canopy cover to being happy remnants of shrubs. Some hedgerows are very gappy so that most of the feature is actually gaps, but no gap is >20m.

Table 2.4: Hedgerow characteristics and associated features recorded to assess importance (Defra, 2007)

Characteristic/feature	Description
Hedgerow type	Shrubby hedgerow, line of trees, shrubby hedgerow with trees or gappy hedgerow
General notes	Special wildlife or nature conservation features e.g. badger setts
Dimensions	Average hedgerow height and width
Connectivity	Number of direct connections with other hedgerows which may form a valuable hedgerow network
Adjacent land use	Description of the adjacent land use on either side of the hedgerow such as arable, grassland, woodland, road/route and water, as well as presence of livestock
Associated features	Description of associated features including banks, ditches, fences or herbaceous vegetation on banks and margins
Undisturbed ground and perennial herbaceous vegetation cover	Average width of undisturbed ground and average width of perennial herbaceous vegetation
Nutrient enrichment ground flora indicator species	Percentage cover of enrichment species in the 30m survey section including nettles *Urtica* spp., cleavers *Galium aparine* or docks *Rumex* spp.
Recently introduced, non-native species	Percentage cover of recently introduced, non-native species in the 30m survey section as defined in the 'New Atlas of the British and Irish Flora' by Preston (2002)
Hedgerow shape	Shrubby hedgerows and shrubby hedgerows with trees should be sub-divided by the following shapes: trimmed and dense, intensively managed, untrimmed, tall and leggy, untrimmed with outgrowths, recently coppiced and recently laid
Integrity (i.e. 'gappiness')	Integrity is measured as a factor of several features including the continuity of the canopy, estimated as a percentage of gaps along the 30m survey section, gaps >5m and the average height of the base of the canopy

[1] Gappy hedgerows are included so they can be condition assessed. Hedgerows with gaps >20m and with no woody section >20m long are not surveyed.

Characteristic/feature	Description
Isolated hedgerow trees	Total number of isolated hedgerow trees within the 30m section. Percentage of young trees with a maximum Diameter at Breast Height (DBH) of 1-5cm within the total number of trees in the sample and percentage of veteran trees with a DBH >1m within the total number of trees in the sample. Average number of isolated hedgerow trees per 100m (extrapolated from 30m counts)
Woody species per 30m	Number of woody species per 30m of continuous woody species cover including structural species, not climbers (other than roses) or bramble
Hedgerow management	Obvious signs of management e.g. trimming or gapping

2.4.4.5 The ecological importance of the hedgerow will then be assessed against the set criteria within the Hedgerows Regulations 1997. Based on the Hedgerows Regulations 1997, hedgerows are considered important if they are at least 30 years old and meet at least one of the following criteria:

- Contain protected species listed in part 1 of Schedule 1, Schedule 5 or Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).
- Contain species that are endangered, vulnerable and rare and are identified in the British Red Data books (Perring and Farrell, 1977; Shirt, 1987; Bratton, 1991).
- Include woody species and associated features as specified in Schedule 1, Part II Criteria, paragraph 7(1) of the Hedgerows Regulations 1997. In summary, the hedgerow must include one or more of the following:
- at least six woody species;
- at least five woody species plus at least three associated features (detailed in paragraph 2.4.2.5);
- at least five woody species including black poplar, large-leaved lime, small-leaved lime or wild service tree; or
- at least four woody species and at least four associated features.

2.4.4.6 The associated features noted above include:

- a bank or wall for at least half the length;
- a ditch for at least half the length;
- gaps over no more than 10% of the length;
- at least one standard tree per 50m;
- at least three ground flora woodland species as defined in Schedule 2 of the Regulations within 1m of the hedgerow;
- connections scoring four or more points, where connection with a hedgerow counts as one, and a connection with broadleaved woodland or a pond counts as two;
- a parallel hedge within 15m.

2.4.4.7 Hedgerows were mapped in the field via the ArcGIS FieldMaps application on a handheld tablet. Photographs and grid reference locations were collected where relevant.

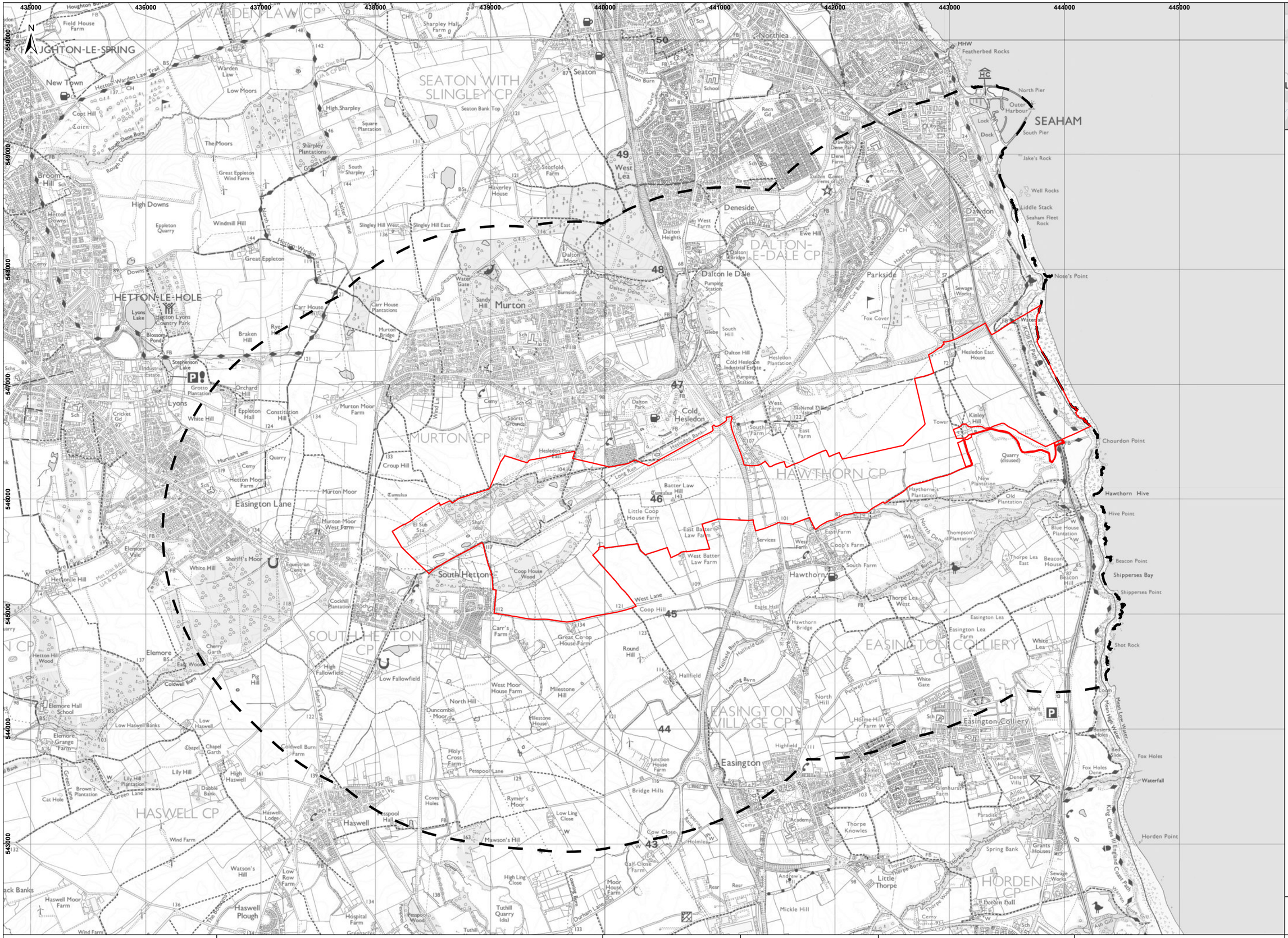
2.4.5 Limitations

2.4.5.1 At the time of writing, hedgerow field surveys, comprising mapping of hedgerow locations and a preliminary assessment of type and condition, were completed for approximately 92% of the UKHab Survey Area, as shown in **Figure 3.3.** The remaining 8% could not be accessed due to land access restrictions.

2.4.5.2 As set out in **Paragraph 2.4.4.3**, further surveys to confirm hedgerow type and condition, were completed in April, July and September 2026. The results of these surveys shall be reported on in the MHPGC Project ES.

2.4.5.3 It should be noted that hedgerows within private gardens, or adjacent to roads and carriageway embankments, railways and railway embankments and areas under construction were excluded from the Hedgerow Survey Area due to access restrictions.

2.4.5.4 Overall, the survey coverage and approach are considered sufficient to inform the baseline conditions reported in **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology**, **of the PEIR**.



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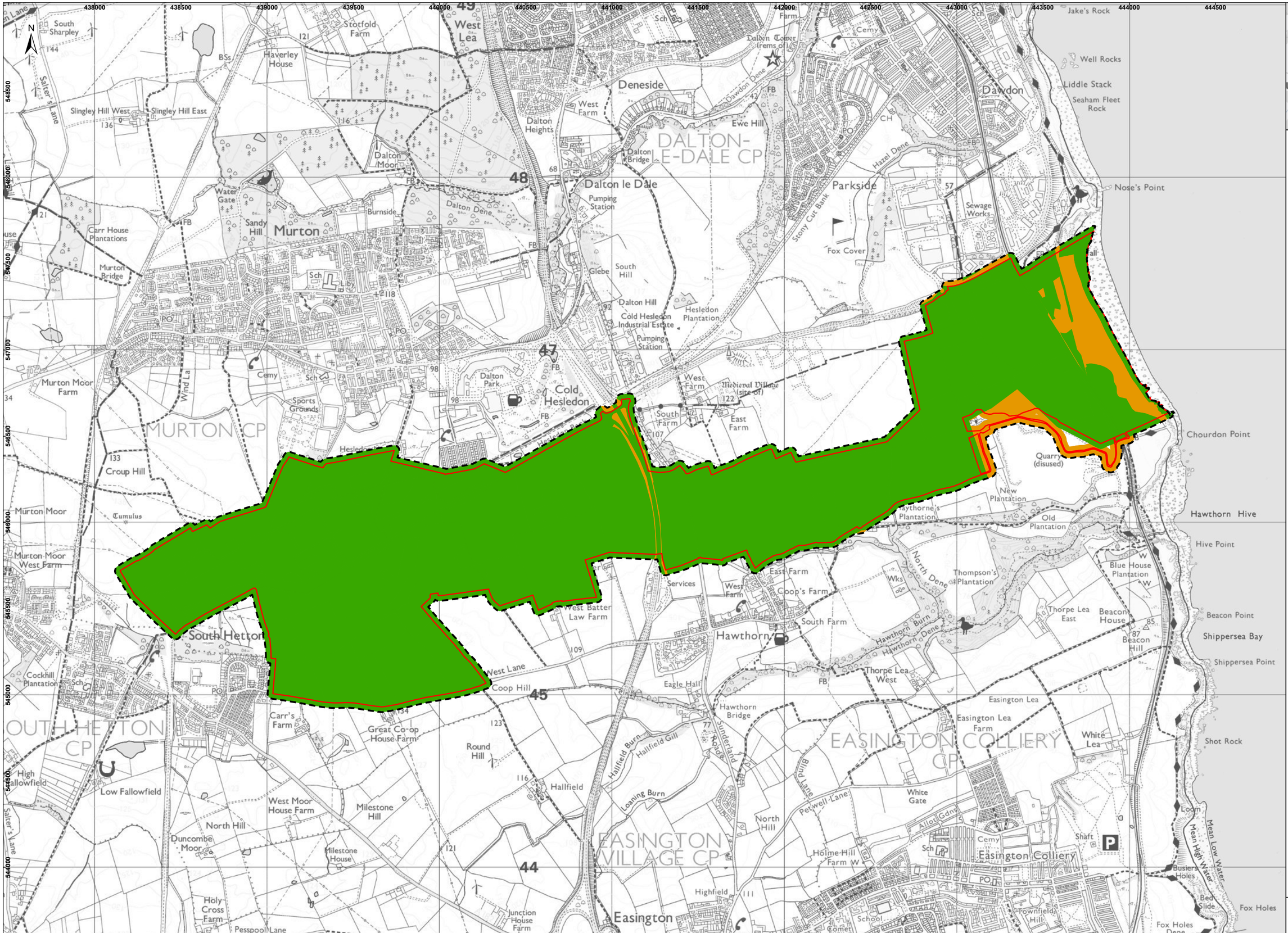
- MHPGC PEIR Red Line Boundary: Onshore
- UKHab Study Area - 2km Buffer

Morven Offshore Wind Farm

Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 2.1: MHPGC PROJECT UKHAB STUDY AREA	0 0.5 km Scale@A3: 1:30,000	**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 Contains public sector information licensed under the Open government License v3.0. © Crown copyright and database rights 2026 Ordnance Survey AC0000848283

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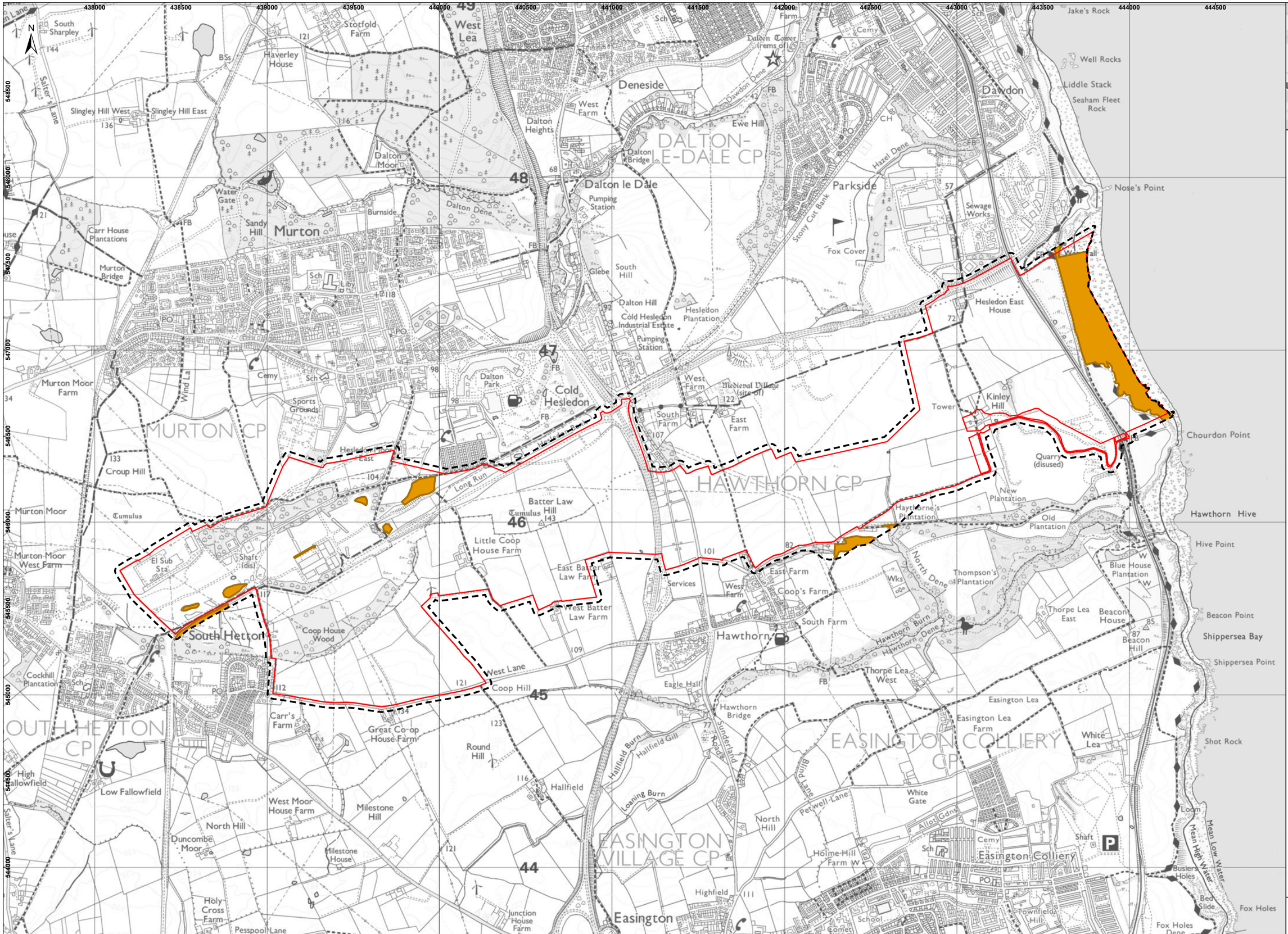
- MHPGC PEIR Red Line Boundary: Onshore
- UKHab Study Area - 30m Buffer

Survey Type

- To be Surveyed (At Time of Writing)
- Survey Completed

Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 2.2: MHPGC PROJECT UKHAB SURVEY AREA AND SURVEY COVERAGE	0 — 0.5 km Scale@A3: 1:20,000	**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 Contains public sector information licensed under the Open government License v3.0. © Crown copyright and database rights 2026 Ordnance Survey AC0000848283	**Drawing Number:** MHPGC-WSP-PEIR-072

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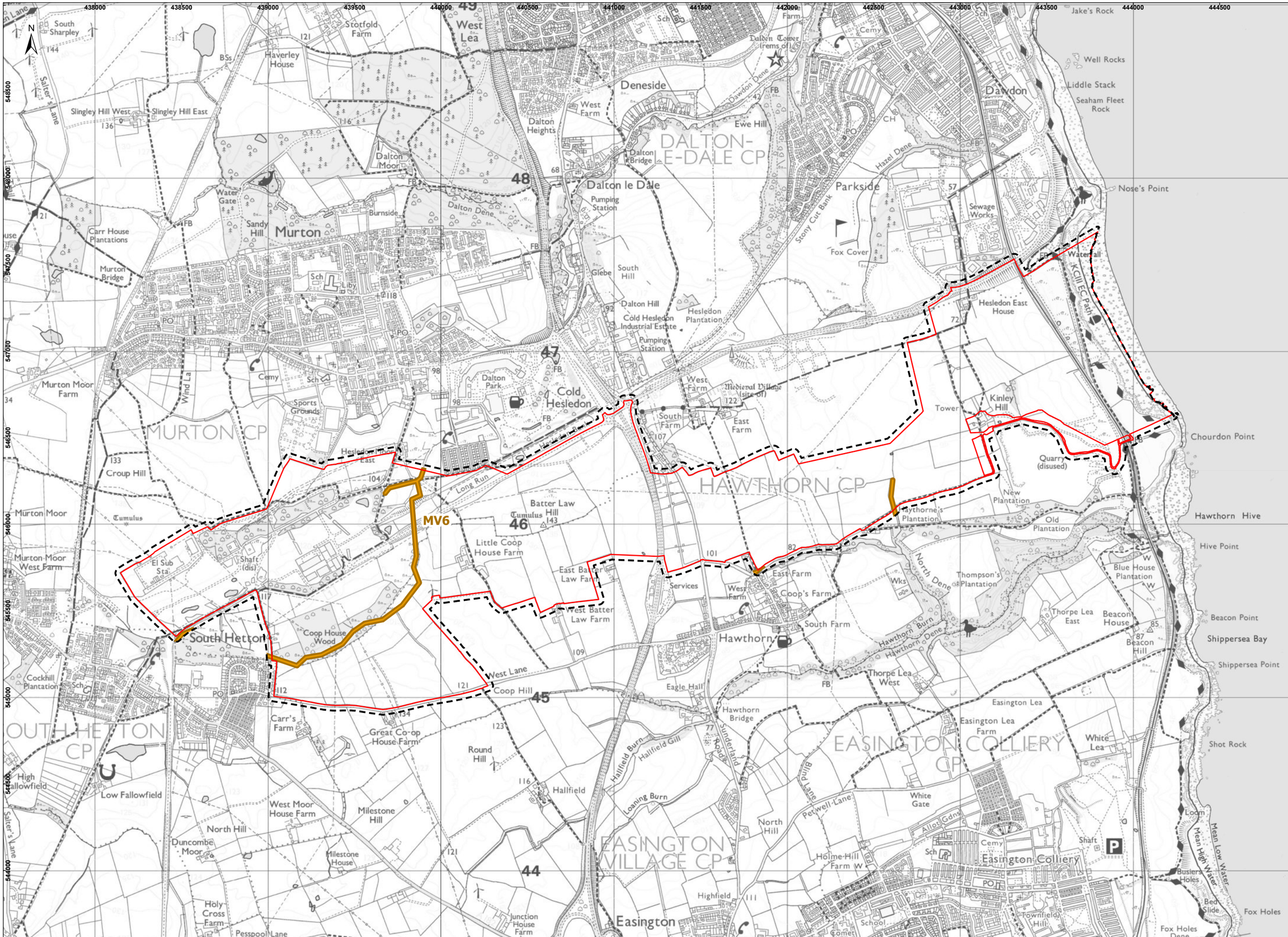


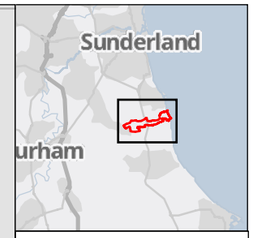
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- MHPGC PEIR Red Line Boundary: Onshore
- NVC Survey Area (30m buffer, extended to 100m at Hawthorne Dene)
- Areas scoped in for NVC Survey

Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 2.3: MHPGC PROJECT NVC SURVEY AREA	0 — 0.5 km Scale@A3: 1:20,000	**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 Contains public sector information licensed under the Open government License v3.0. © Crown copyright and database rights 2026 Ordnance Survey AC0000848283	**Drawing Number:** MHPGC-WSP-PEIR-073

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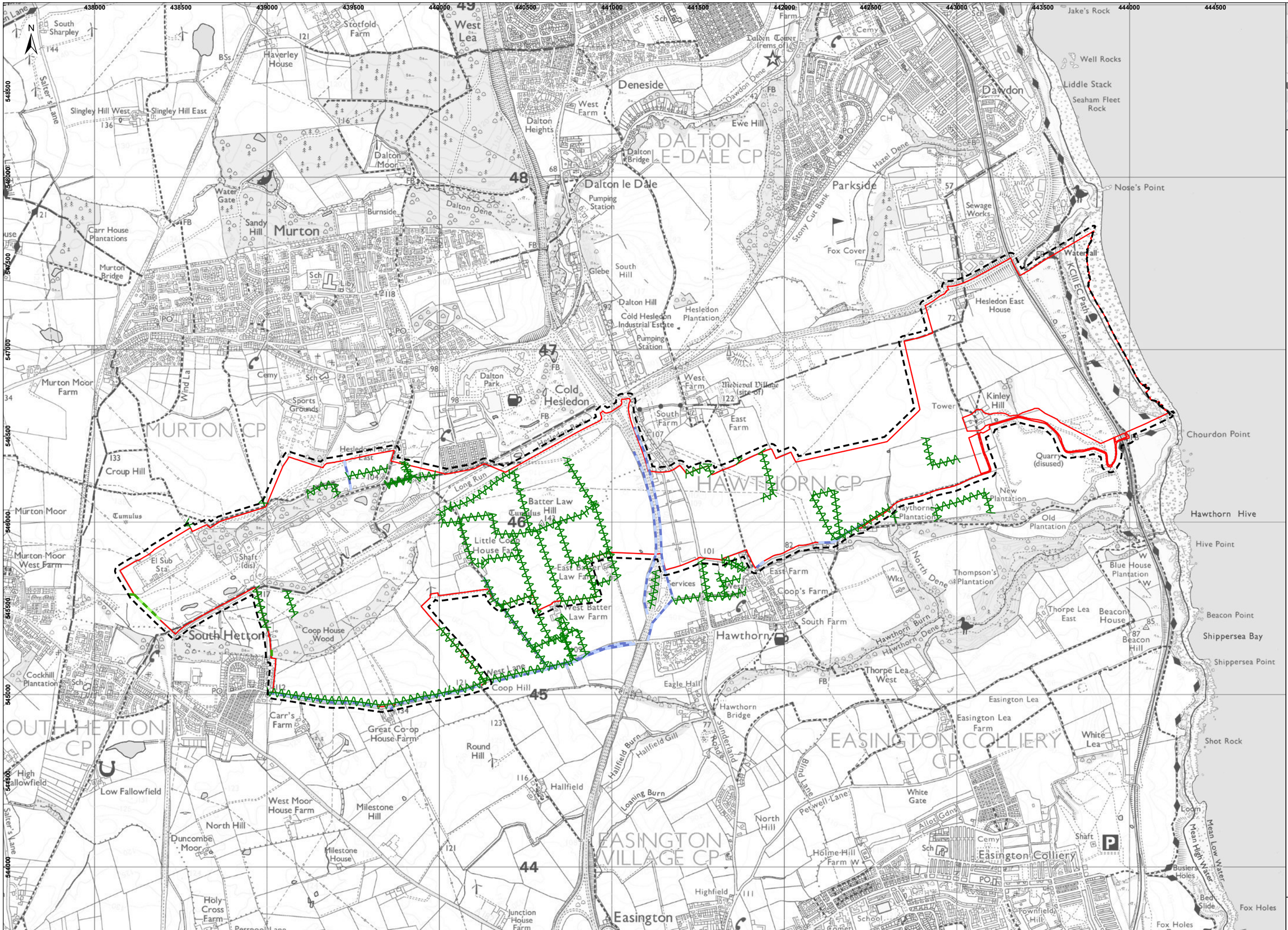
- MHPGC PEIR Red Line Boundary: Onshore
- 30m buffer
- Scoped in for RCA Surveys

Morven Offshore Wind Farm

Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 2.4: MHPGC PROJECT RCA SURVEY AREA	0 — 0.5 km Scale@A3: 1:20,000	**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 Contains public sector information licensed under the Open government License v3.0. © Crown copyright and database rights 2026 Ordnance Survey AC0000848263

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- MHPGC PEIR Red Line Boundary: Onshore
- 30m Buffer

Hedgerow Survey Results

- h2 - Hedgerow
- h2a - Native Hedgerow
- h2a6 - Other Native Hedgerow

Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 2.5: MHPGC PROJECT HEDGEROW SURVEY AREA	0 — 0.5 km Scale@A3: 1:20,000	**Geodetic Information:** Datum: OSGB 1936 Projection: British National Grid	**Data Sources:** BP, Ordnance Survey

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Morven Offshore Wind Farm

Drawing Number: MHPGC-WSP-PEIR-075

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3 Baseline characterisation

3.1 UKHab surveys

3.1.1 Desk study

Statutory and non-statutory designated sites

3.1.1.1 There are 11 statutory designated sites located within the UKHab Study Area, that are designated for habitats or botanical features. These comprise the following:

- **Durham Coast SAC**, which lies partially within the MHPGC PEIR Red Line Boundary: Onshore and partially within the UKHab Study Area at its eastern extent. This designated site is the only example of vegetated sea cliffs on magnesian limestone exposures in the UK. These cliffs extend along the North Sea coast for over 20km from South Shields southwards to Blackhall Rocks. Qualifying Features include Annex I habitats[2]: vegetated sea cliffs of the Atlantic and Baltic Coasts, comprising a complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub.
- **Durham Coast SSSI**, which lies partially within the MHPGC PEIR Red Line Boundary: Onshore and partially within the UKHab Study Area at its eastern extent. This designated site, which lies between South Shields and Hart Warren, is of considerable biological, geological and physiographic interest. It contains most of the paramaritime magnesian limestone vegetation in Britain, as well as a species-rich dune system.
- **Hesledon Moor East SSSI**, which lies partially within the MHPGC PEIR Red Line Boundary: Onshore and wholly within the UKHab Study Area, to the northeast of Jade Business Park. This site supports two habitats of particular conservation importance. The majority of the site comprises unimproved neutral pasture, whilst a separate, smaller parcel of land to the south supports a base-rich mire. Scrub and flowing water add further interest to the site.
- **Hesledon Moor West SSSI**, which lies adjacent to the MHPGC PEIR Red Line Boundary: Onshore and wholly within the UKHab Study Area, just southwest of Jade Business Park. This designated site is small but diverse and includes fen, carr and heathland communities. These communities are developed on acidic glacial drift overlying magnesian limestone and were once widespread in eastern Durham, but are now confined to small, isolated pockets within the urban/agricultural landscape.
- **Hawthorn Dene SSSI**, which lies adjacent to the south of the MHPGC PEIR Red Line Boundary: Onshore, but partially within the UKHab Study Area. This designated site supports one of the most extensive, diverse and least disturbed areas of semi-natural woodland on the magnesian limestone of County Durham (second only to Castle Eden Dene), with additional habitats including magnesian limestone grassland and tall fen.
- **Pig Hill SSSI**, which lies 1.7km to the west of the MHPGC PEIR Red Line Boundary: Onshore, but partially within the UKHab Study Area. The steep slopes of Pig Hill, above the valley of the Coldwell Burn, support one of the most extensive surviving examples of primary magnesian limestone grasslands in Britain.
- **Eppleton Grassland SSSI**, which lies 1.8km to the northwest of the MHPGC PEIR Red Line Boundary: Onshore, but partially within the UKHab Study Area. This designated site supports a diverse mosaic of semi-natural habitats, including unimproved neutral and acid grasslands, fen-meadows and rush-pastures, swamps, tall-herb fens, scrub and woodland.
- **Tufthill Quarry SSSI**, which lies 1.8km to the southwest of the MHPGC PEIR Red Line Boundary: Onshore, but partially within the UKHab Study Area. This designated site is a disused limestone quarry containing areas of primary and secondary species-rich

[2] Habitats of conservation importance designated under the EU Habitats Directive and transposed into UK law via the Habitats Regulations.

calcareous grassland developed over magnesian limestone, together comprising one of the larger remaining examples of this habitat in East Durham.

- **Noses Point Local Nature Reserve (LNR)**, which lies partially within the MHPGC PEIR Red Line Boundary: Onshore and wholly within the UKHab Study Area, at its eastern extent. This designated site is magnesian limestone bedrock, laid down in an ancient sea, and has given rise to a rare form of grassland with unique populations of plants and animals. The dramatic and rugged coastline with its cliffs and sea stacks was carved out by the action of the waves.
- **Easington LNR**, which lies 1.7km to the south of the MHPGC PEIR Red Line Boundary: Onshore and partially within the UKHab Study Area, at its southeastern extent. The site has high nature conservation value and contains several Durham Biodiversity Action Plan Priority Habitats (woodland, ponds, fen reed bed, brownfield mosaic and lowland meadow).

3.1.1.2 There are 22 non-statutory designated sites located within the UKHab Study Area, that are designated for habitats or botanical features. These are as set out in the following:

- **Cold Hesledon Meadow Local Wildlife Site (LWS)**, which lies adjacent to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, to the south of Cold Hesledon. This site is a damp meadow supporting many herbs including fragrant orchid (*Gymnadenia conopsea)*, common twayblade (*Listera ovata)*, cowslip (*Primula veris)*, oxeye daisy (*Chrysanthemum leucanthemum)*, field scabious (*Knautia arvensis)*, harebell (*Campanula rotundifolia)*, burnet saxifrage (*Pimpinella saxifraga)*, centaury (*Centaurium erythraea)*, lady's bedstraw (*Galium verum)*, common knapweed (*Centaurea nigra)* and quaking grass (*Briza media)*.
- **Coop House Wood LWS**, which lies wholly within the MHPGC PEIR Red Line Boundary: Onshore and wholly within the UKHab Study Area at its western extent, to the south of Jade Business Park. This site contains damp woodland with sessile oak (*Quercus petraea*), ash (*Fraxinus excelsior*), downy birch (*Betula pubescens*), alder (*Alnus glutinosa*) and rowan (*Sorbus aucuparia*). The field layer consists of abundant male fern (*Dryopteris filix-mas*), wood anemone (*Anemone nemorosa*) and honeysuckle (*Lonicera periclymenum*).
- **Hesledon Moor West LWS**, which adjacent to the MHPGC PEIR Red Line Boundary: Onshore and partly within the UKHab Study Area at the western extent, to the southwest of Jade Business Park. The southern side is acid pasture with species; purple moor-grass (*Molinia caerulea*), sweet vernal-grass (*Anthoxanthum odoratum*), heath bedstraw (*Galium saxatile*) and tormentil (*Potentilla erecta*), common spotted orchid, sneezewort (*Achillea ptarmica*), sorrel (*Rumex acetosa*), autumn hawkbit (*Scorzoneroides autumnalis*), cat's-ear (*Hypochaeris radicata*) and slender St. John's-wort (*Hypericum pulchrum*).
- **Hesledon Moor East LWS**, which lies partially within the MHPGC PEIR Red Line Boundary: Onshore and wholly within the UKHab Study Area at the northwestern extent, to the east of Jade Business Park. Largely semi-improved grassland with fringing scrub next a watercourse. Marsh vegetation occurs particularly in the eastern section.
- **Hawthorn Quarry LWS**, which lies partially within the MHPGC PEIR Red Line Boundary: Onshore, and partly within the UKHab Study Area, at its eastern extent. Quarry with plants typical of the magnesian limestone: bee orchid (*Ophrys apifera*), fragrant orchid, common spotted orchid, northern marsh orchid, yellow-wort (*Blackstonia perfoliata*), field scabious, greater knapweed (*Centaurea scabiosa*), wild carrot (*Daucus carota*), cowslip, quaking grass and glaucous sedge (*Carex flacca*).
- **South Murton Marsh LWS**, which lies 150m to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, to the south of Murton. Marsh with largely tall-herb species, that has ditches on both the north and south aspects.
- **Cowtons Pond LWS**, which lies 220m to the south of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, at its southwestern extent. A pond and marsh which retains open water/extensive emergent vegetation and some marsh.
- **Hawthorn Bridge Pumping Station LWS**, which lies 950m to the south of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, at its southeastern extent and to the south of Hawthorn. A small sedge meadow/marsh is present and left undisturbed due to its inaccessibility.

- **South Hetton Pond LWS**, which lies 400m to the southwest of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, at its southwestern extent and to the south of South Hetton. A large pond with extensive areas of bulrush *Typha latifolia* on the west side.
- **Cold Hesledon Pond and Walkway LWS**, which lies 600m to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, to the east of Cold Hesledon. A small pond with a marshy area.
- **Duncombe Moor LWS**, which lies 750m to the southwest of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, at its southwestern extent and to the south of South Hetton. A species-rich spring fen containing wetland communities uncommon in the county with a variety of sedges and northern marsh orchid (*Dactylorhiza purpurella*). The northern field includes an acid grassland community which includes cat's-ear.
- **Murton Bridge Carr LWS**, which lies 1.4km to the northwest of the MHPGC PEIR Red Line Boundary: Onshore, but partially within the UKHab Study Area, at its northeastern extent. Carr and calcareous grassland, predominantly willow carr (*Salix cinerea*) and (*Salix caprea*) with the field layer dominated by greater pond sedge (*Carex riparia*). The margins are more diverse with meadowsweet (*Filipendula ulmaria*) and rushes (*Juncus* spp.)
- **Pesspool Lane Ponds LWS**, which lies 1km to the south of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area, to the southeast of South Hetton. Silty ponds are situated in rough pasture with soft rush (*Juncus effusus)* and tufted hair-grass (*Deschampsia cespitosa)*.
- **Elemore Woods (1) and (2) LWS**, which lies 1.9km to the southwest of the MHPGC PEIR Red Line Boundary: Onshore, but partially within the UKHab Study Area, at its western extent. A mixed woodland site with conifers interspersed with broadleaved woodland. Ground flora is very patchy, with dog's mercury (*Mercurialis perennis*)in some areas.
- **Hazel Dene LWS**, which lies 610m to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area at its northern extent. A remnant of a small dene on ancient woodland; slopes are covered principally by ash with hazel (*Corylus avellana*) and elder (*Sambucus nigra*).
- **Dawdon Dene LWS**, which lies 700m to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area at its northern extent, to the east of Murton. An ancient woodland site dominated by mixed deciduous woodland; including willow (*Salix sp*)., and elder.
- **Murton Meadows LWS**, which lies 750m to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area at its northern extent, to the east of Murton. Species-rich meadows used for horse grazing. Species include bee orchid, pyramidal orchid (*Anacamptis pyramidalis)*, common spotted orchid, northern marsh orchid.
- **Tufthill Quarry LWS**, which lies 1.8km to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area at its southern extent. This site is a quarry containing magnesian limestone species.
- **Dalton Dene LWS**, which lies 1.3km to the north of the MHPGC PEIR Red Line Boundary: Onshore, but wholly within the UKHab Study Area at its northern extent, to the northeast of Murton. A section of woodland on an ancient woodland site: ash, hawthorn (*Crataegus monogyna*) and elder fringe a small stream. Slopes of the dene support herb-rich grassland.

Local records

3.1.1.3 A desk-based review of available information, including historic data from previously completed field surveys within the UKHab Study Area (WSP, 2023), identified that the UKHab Survey Area is dominated by agricultural habitats, mainly cereal crops but with areas of grazing pasture also present. There are small patches of broadleaved woodland and scrub, particularly in the western area of the UKHab Survey Area around Jade Business Park. The eastern area of the UKHab Survey Area supports a greater extent of grassland habitats associated with the coastal cliffs and shingle beach.

3.1.1.4 To supplement the desk study completed for the MHPGC Project Scoping Report, additional records were requested from ERIC NE and were received on 28 October 2025. Relevant records obtained from ERIC NE, specifically those pertaining to red listed plant species, were used to inform the UKHab baseline. These records are listed in **Appendix A** and set out in **Figure 3.1.** To ensure the baseline reflects current conditions, the data has been filtered to include only records from 2020 onwards. Records collected prior to 2020 are not included in **Appendix A**.

3.1.2 Field surveys

3.1.2.1 Habitat types recorded within the UKHab Survey Area are presented below. This section summarises the UKHab classification code, habitat type, habitat descriptions and species list; and its location within the UKHab Survey Area.

3.1.2.2 The spatial distribution and extent of habitat within the UKHab Survey Area are illustrated in Figure 3.2 and Figure 3.3. Target notes, as numbered on Figure 3.3, include observations of protected species recorded during UKHab field surveys, as well as the locations of INNS. Full details of these records are provided in Appendix B.

c1c – Cereal crops

3.1.2.3 The most widespread habitat recorded in the UKHab Survey Area was agricultural land consisting of cereal crops. The crops recorded included wheat and barley with fields presenting as high intensity agriculture with field margins either narrow or absent. The secondary code 109 – Hay was recorded at one location.

f2 – Fen marsh and swamp, f2e – Reedbeds and f2f – Other wetlands

3.1.2.4 Wetland habitats were recorded at six locations, all situated around Jade Business Park. These areas were typically small, occupying lower-lying ground where water collects. This included potential man-made wetlands around drainage features.

3.1.2.5 Two areas of reedbed were recorded, dominated by common reed. Soft rush and compact rush (*Juncus compactus*) were both frequent, with meadowsweet, common knapweed and silverweed (*Potentilla anserina*) occasional. Willow (*Salix* sp.) occurred along habitat margins, with Yorkshire-fog (*Holcus lanatus*) and bent-grasses (*Agrostis* spp.) also present. These habitats were associated with the following secondary codes:

- 14 – Scattered rushes;
- 16 – Tall forbs;
- 128 – Tall and tussocky sward;
- 502 – Seasonally wet.

3.1.2.6 Other wetland areas were recorded with dominant soft rush, common reed, great reedmace (*Typha latifolia)* and rosebay willowherb *(Chamaenerion angustifolium)*. Compact rush and purple loosestrife *Lythrum salicaria* were recorded as abundant, with great willowherb (*Epilobium hirsutum),* willow, sedge (*Carex* sp.), marsh thistle (*Cirsium palustre)* and yellow iris (*Iris pseudacorus)* recorded as frequent. Dock (*Rumex* sp.), alder, hawthorn, willow and ragged-robin (*Lychnis flos-cuculi*) were recorded occasionally with European gorse and silver birch (*Betula pendula)* recorded as rare. These habitats were associated with the following secondary codes:

- 10 – Scattered scrub;
- 14 – Scattered rushes;
- 502 – Seasonally wet.

g2c – Other calcareous grassland

3.1.2.7 A area of other calcareous grassland is present at the eastern edge of the UKHab Survey Area, where calcareous flora has colonised previously disturbed ground along trackways and calcareous overburden close to Hawthorn Quarry. The unmanaged sward consists of grasses and sedges including quaking-grass, creeping bent (*Agrostis capillaris*), red fescue (*Festuca rubra*) and glaucus sedge (*Carex flacca*), and herbs such as carline thistle (*Carlina vulgaris*) yellow-wort, common

knapweed, devil's-bit scabious (*Succisa pratensis*), fairy flax (*Linum catharticum*), wild marjoram (*Origanum vulgare*), zig zag clover (*Trifolium medium*), fragrant orchid (*Gymnadenia conopsea*), bird's-foot trefoil (*Lotus corniculatus*), eye bright (*Euphrasia officinalis*), common fleabane (*Pulicaria dysenterica*), tufted vetch (*Vicia cracca*) and salad burnet (*Poterium sanguisorba subsp. minor*). Scattered areas of tall forb vegetation include rosebay willowherb (*Chamaenerion angustifolium*), bramble (*Rubus fruticosus* agg.), rose (*Rosa sp.*), hemp agrimony (*Eupatorium cannabinum*) and hog weed (*Heracleum sphondylium*). The following secondary codes were associated with this habitat parcel:

- 10 – Scattered scrub;
- 16 – Tall forbs.

g3c – Other neutral grassland

3.1.2.8 Other neutral grassland was recorded on ten occasions, primarily around and west of Jade Business Park. These areas were typically dominated by either Yorkshire-fog, false oat-grass (*Arrhenatherum elatius)* or cock's-foot. Other grass species present included meadow-grasses *Poa* spp., bent-grasses, perennial rye-grass (*Lolium perenne)*, crested dog's-tail (*Cynosurus cristatus)*, Timothy and tufted hair-grass. Forb species recorded as frequent include common knapweed, red clover (*Trifolium pratense)*, common bird's-foot trefoil (*Lotus corniculatus)*, wild carrot, yarrow (*Achillea millefolium)*, autumn hawkbit, lady's bedstraw and kidney vetch (*Anthyllis vulneraria)*. Occasionally recorded species include willow, creeping thistle (*Cirsium arvense),* giant hogweed (*Heracleum mantegazzianum)*, red bartsia (*Odontites verna)*, horsetails (*Equisetum* spp.), false fox-sedge (*Carex otrubae)*, compact rush and creeping cinquefoil (*Potentilla reptans)*. Oak (*Quercus* sp.) and white poplar (*Populus alba)* saplings were recorded as rare. The following secondary codes were associated with these habitat parcels:

- 10 – Scattered scrub;
- 14 – Scattered rushes;
- 16 – Tall forbs;
- 128 – Tall and tussocky sward.

g4 – Modified grassland

3.1.2.9 Modified grassland was widespread, comprising grazed pasture. These areas were typically dominated by perennial rye-grass and crested dog's-tail. Other grass species were abundant in some areas, including Yorkshire-fog, false oat-grass, Timothy and red fescue (*Festuca rubra).* Wetter areas contained abundances of jointed rush (*Juncus articulates)*.

3.1.2.10 The main herb species recorded includes frequent curled dock (*Rumex crispus)*, creeping buttercup (*Ranunculus repens)*, common sorrel, creeping thistle, broadleaved dock (*Rumex obtusifolius)*, cow parsley (*Anthriscus sylvestris)* and rosebay willowherb. White clover was locally abundant, with areas of nettles (*Urtica dioica)* and brambles (*Rubus fruticosus* agg.) present in nutrified areas.

3.1.2.11 These habitats were associated with the following secondary codes:

- 14 – Scattered rushes;
- 16 – Tall forbs;
- 32 – Scattered trees;
- 100 – Grazed;
- 103 – Horse grazed;
- 107 – Mown and collected.

h3a – Blackthorn scrub

3.1.2.12 A single very small parcel of scrub dominated by blackthorn is present at the south of the UKHab Survey Area in the corner of an arable field.

h3e – Gorse scrub

3.1.2.13 Two areas of gorse scrub were recorded within the UKHab Survey Area, with an area to the west of Jade Business Park and an area on Batter Law Hill. Within both, European gorse was the dominant species, with occasional elder and bramble also recorded.

h3h – Mixed scrub

3.1.2.14 Seven areas of mixed scrub were recorded within the UKHab Survey Area, mostly around Jade Business Park and its access road from the east. Dominant species were typically blackthorn (Prunus spinosa) and hawthorn, with gorse, willow and bramble recorded as abundant. Species recorded frequently include beech (Fagus sylvatica), downy birch, aspen (Populus tremula), silver birch, white poplar, elder, rowan and rosebay willowherb. Species recorded as occasional include creeping thistle, reed canary-grass (Phalaris arundinacea), mallow (Malva sp.), giant hogweed, Yorkshire-fog, soft rush, Scots pine (Pinus sylvestris), ash, dog-rose (Rosa canina) and wild cherry (Prunus avium). These habitats were associated with the following secondary codes:

- 10 – Scattered scrub;
- 16 – Tall forbs;
- 32 – Scattered trees.

R1g 40 – Other standing water (Ponds; priority) and r1g 41– Other standing water (Ponds; non-priority)

3.1.2.15 Several ponds are present within the UKHabs Survey Area, potentially qualifying as Priority Habitat/HPI. While several ponds were dry at the time of survey, others contained water and supported aquatic and marginal vegetation.

R1g 50 Other standing water (Ditch) and r2b other rivers and streams

3.1.2.16 Several minor watercourses consisting of ditches and streams are present within the UKHab Survey Area, which are discussed further in Section 3.3.

s2a – Maritime cliff and slopes (Priority Habitat)

3.1.2.17 Much of the cliffs are unvegetated, but some shelves are vegetated with magnesian limestone species.

t1f – Other littoral rock

3.1.2.18 Exposed rock at the base of sea cliffs and exposed to waves and in the intertidal zone, on the seaward side of beach habitats. In places this consists of compacted industrial spoil from legacy colliery operations.

t2g5 – Saline lagoons (H1150) (Priority Habitat)

3.1.2.19 Standing water at the base of the cliffs at the landward side of the beach. These lagoons hold good volumes of water through most of the year. The lagoons are heavily contaminated, and the water has a deep red colour due to iron ore and sulphur leaching from a legacy of industrial spoil dumped over the cliffs onto the shore.

t2h – Beach

3.1.2.20 A pebble beach where wave movement moves the substrate is located between littoral rock and maritime cliff habitats at the eastern extent of the UKHab survey area.

u1b5 – Buildings, u1b6 – Other developed land, u1c – Artificial unvegetated, unsealed surface, u1e – Built linear features

3.1.2.21 Urban habitats included buildings (u1b5); other developed land (u1b6) such as roads, parking areas, construction areas and gardens; other areas of artificial unvegetated, unsealed surface (u1c) such as areas of aggregate hard standing and tracks; and built linear features (u1e) such as walls.

3.1.2.22 These habitats were associated with the following secondary codes:

- 510 – Bare ground;
- 853 – Mortared walls.

U1d – Suburban mosaic of developed and natural surface and u1d 80 – Suburban mosaic of developed and natural surface (Open mosaic habitats on previously developed land) (Priority Habitat)

3.1.2.23 An area of suburban mosaic of developed and natural surface was recorded to the west of Jade Business Park which potentially qualifies as secondary code 80 Open mosaic habitats on previously developed land) (Priority Habitat). This mosaic habitat was recorded with frequent silver birch, Yorkshire-fog, sedge and soft rush with occasional cow parsley, gorse and common reed, which were intersperse with areas of open/bare ground habitat.

w1f – Lowland mixed deciduous woodland (Priority Habitat) and w1f7 – Other lowland mixed deciduous woodland

3.1.2.24 A small area of lowland mixed deciduous woodland (Priority Habitat) (w1f) is located within the survey buffer north of Jade Business Park. An area of other lowland mixed deciduous woodland (w1f7) was recorded at the western end of Coop House Wood. The mature woodland was dominated by pedunculate oak (*Quercus robur)* and beech, with abundant ash. The understorey was dominated by bramble with frequent bracken (*Pteridium aquilinium)* and sycamore (*Acer pseudoplatanus)* saplings.

3.1.2.25 This habitat was associated with the following secondary codes:

- 10 – Scattered scrub;
- 12 – Scattered bracken;
- 202 – Young trees - self-set;
- 510 – Mature trees.

w1g - Other Broadleaved Woodland

3.1.2.26 This habitat was recorded as the dominant habitat around Jade Business Park on all sides. Four smaller areas were also recorded in the eastern half of the UKHab Survey Area, to the east of the A19. Dominant species include ash, silver birch and alder. Abundant species recorded include silver poplar, bird cherry (*Prunus padus)*, hawthorn and willow. Species recorded frequently include beech, downy birch, blackthorn, sycamore, dog-rose, elder and cherry laurel (*Prunus laurocerasus)*. Species recorded occasionally include rowan, ornamental plum (*Prunus domestica)*, horse chestnut (*Aesculus hippocastanum)*, gorse, common broom (*Cytisus scoparius)*, whitebeam (*Sorbus aria)* and butterfly-bush (*Buddleja davidii)*. The ground flora included frequent rosebay willowherb, bramble, Japanese knotweed (*Reynoutria japonica)*, nettle, common hogweed (*Heracleum sphondylium)*, clover *Trifolium* sp.) and agrimony (*Agrimonia eupatoria).* The ground flora also included the following species, recorded as occasional mugwort (*Artemisia vulgaris)*, broad buckler-fern (*Dryopteris dilatata)* and vetch (*Vicia* sp.). These habitats were associated with the following secondary codes:

- 10 – Scattered scrub;
- 16 – Tall forbs;
- 29 – Plantation;
- 524 – Invasive and non-native species.

w1h – Other woodland, mixed and w1h5 – Other woodland, mixed; mainly broadleaved

3.1.2.27 Two areas of other woodland, mixed were recorded either side of the Long Run, the access road to the east of Jade Business Park. These areas contained abundant hawthorn, with frequent Scots pine, silver birch, gorse and blackthorn. Downy birch, bird cherry, maple Acer sp., rowan and holly (Ilex aquifolium) were recorded occasionally.

3.1.2.28 An additional area of other woodland, mixed; mainly broadleaved was recorded to the north of Hawthorn. Pedunculate oak was abundant, with horse chestnut, alder, beech, ivy and ash recorded frequently.

Hedgerows and line of trees

3.1.2.29 A summary of the hedgerow field survey findings is set out in **Section 3.4.2**, including lines of trees boundary features.

3.1.3 UKHab surveys (point features)

3.1.3.1 The results of the UKHab survey recorded as point features are presented in Figure 3.3.

3.1.3.2 Sixteen individual broadleaved trees were recorded during the field surveys. Most of these (13 out of 16) were mature trees on field margins. Species recorded include ash, goat willow (Salix caprea) and silver birch.

3.1.3.3 Target notes were also compiled during surveys to record key features of ecological interest. In total, 34 target notes were recorded within the UKHab Survey Area. These include locations of INNS plant species (including Himalayan balsam (*Impatiens glandulifera)*, Japanese knotweed and giant hogweed) and signs of protected species identified during the UKHab surveys. A full list of the Target notes recorded is provided in **Appendix B.**

3.2 NVC surveys

3.2.1 Desk study

3.2.1.1 A desk-based review of available information, including historic data from previously completed field surveys within the UKHab Study Area (WSP, 2023), together with aerial imagery, was undertaken to inform an understanding of habitat composition within the NVC Survey Area.

3.2.1.2 To supplement the desk study completed for the MHPGC Project Scoping Report, additional records were requested from ERIC NE and were received on 28 October 2025. However, the data does not include information specific to NVC communities.

3.2.2 Site-specific surveys

3.2.2.1 NVC surveys were scoped in for 10 discrete areas within the NVC Survey Area, as shown in **Figure 2.3.** These areas include wetland (including ditches) and habitats within Durham Coast SSSI and Hesledon Moor East SSSI; and habitats forming parts of Hawthorn Dene SSSI and Hesledon Moor West SSSI. They were selected for NVC field surveys due to their species richness and/or higher potential conservation value, as identified during the UKHab field surveys (or as requested by Natural England following consultation).

3.2.2.2 At the time of writing, NVC field data is available for four of the 10 habitats/areas scoped in and the results are set out in **Table 3.1** and **Figure 3.4**, with further detail on the NVC communities provided below. The remaining surveys of NVC habitats/areas shall be undertaken and reported within the MHPGC Project ES.

Table 3.1: NVC survey results

Habitat type	Habitat code on Figure 3.4	NVC community
f2e - Reedbed	NVC1 and NVC2	MG10 – (*Holcus lanatus*) – (*Juncus effusus)* rush-pasture

f - Wetland	NVC3	S12 – (*Typha latifolia)* swamp
f2f – Other wetlands	NVC4	S4 – (*Phragmites australis)* swamp and reedbeds

NVC1 and NVC2 (f2e- Reedbed)

3.2.2.3 Species recorded within two areas classified as MG10 – (*Holcus lanatus)* – *(Juncus effusus)* rush-pasture community include meadowsweet, Yorkshire-fog, compact rush, soft rush, common reed, silverweed, willow, and bulrush. The presence and composition of these species are characteristic of the MG10 – (*Holcus lanatus)* – *(Juncus effusus)* rush-pasture community.

NVC 3 (f- Wetland)

3.2.2.4 This area was classified as S12 (*Typha latifolia)* swamp.

3.2.2.5 Species recorded include sedge, rosebay willowherb, thistle (*Cirsium* sp.), yellow iris, soft rush, campion (*Lychnis* sp.), willow, and bulrush. The presence and composition of these species are characteristic of the S12 – (*Typha latifolia)* swamp community.

NVC 4 (f2f- Other Wetland)

3.2.2.6 This area was classified as S4 (Phragmites australis) swamp and reedbed.

3.2.2.7 Species recorded include marsh thistle, common broom, common hogweed, yellow iris, purple loosestrife, common reed and bulrush. The presence and composition of these species are characteristic of the S4 – (*Phragmites australis)* swamp and reedbeds community.

3.3 RCA surveys

3.3.1 Desk study

3.3.1.1 A desk-based review of available information, including historic data from previously completed field surveys within the UKHab Study Area (WSP, 2023), together with aerial imagery, identified four watercourses (rivers and streams) present within the RCA Survey Area. These comprise smaller tributaries of large watercourses as well as minor field boundary ditches.

3.3.1.2 To supplement the desk study completed for the MHPGC Project Scoping Report, additional records were requested from ERIC NE and were received on 28 October 2025. These records are summarised in **Appendix A**; however, the data does not include information specific to the RCA.

3.3.2 Site-specific surveys

3.3.2.1 Following the initial desk-based review and the UKHab field surveys, four watercourses were scoped in for further assessment in the RCA Survey Area. Two of these watercourses were classed as artificial ditches (RCA_11 and RCA_12, as shown on **Figure 3.5**) and were therefore not subject to further condition assessment as they do not fall into any RCA category. The two remaining watercourses, South Hetton Burn (RCA_6) and Hallfield Burn (RCA_9), were surveyed in August 2025, in accordance with MoRPh survey guidelines, and are shown on **Figure 3.5.**

3.3.2.2 South Hetton Burn was assessed to be of Moderate condition, with a Final Condition Score of 0.3. Hallfield Burn was assessed to be of Fairly Good condition, with a Final Condition Score of 1.51.

3.3.2.3 The location of each MoRPh5, watercourse details including river type and final condition score are detailed in **Table 3.3**. Photographs of surveyed watercourses are shown in **Appendix C**.

Table 3.2: Condition thresholds for river type K

Likely best average condition score	
Lower threshold for Good	>1.9
Lower threshold for Fairly Good	>1.2
Lower threshold for Moderate	>0.2
Lower threshold for Fairly Poor	>-1.0

Table 3.3: RCA summary

Watercourse Reference	Watercourse survey location (OSGB36 British National Grid))		Watercourse ID	Watercourse description	Final river type	Final condition score
	Easting	Northing				
RCA_6	439107	545247	South Hetton Burn	Small shallow stream flowing northeast to southwest alongside an area of woodland north of South Hetton.	K (straight sinuous)	Moderate
RCA_9	440879	545043	Hallfield Burn	Small stream which forms part of a headwater of Hallfield Burn flowing west to east along arable fields adjacent to	K	Fairly Good

Watercourse Reference	Watercourse survey location (OSGB36 British National Grid))		Watercourse ID	Watercourse description	Final river type	Final condition score
	Easting	Northing				
				the A19 at Hallfield Farm.		

3.4 Hedgerow surveys

3.4.1 Desk study

3.4.1.1 A desk-based review of available information, including historic data from previously completed field surveys within the UKHab Study Area (WSP, 2023), together with aerial imagery, identified that the Hedgerow Survey Area contains numerous hedgerows of varying condition and lines of mature broadleaved trees along field margins and recreational routes, including the North Sea Cycle Route.

3.4.1.2 To supplement the desk study completed for the MHPGC Project Scoping Report, additional records were requested from ERIC NE and were received on 28 October 2025. These records are summarised in **Table** : however, the data does not include information specific to hedgerows.

3.4.2 Field survey

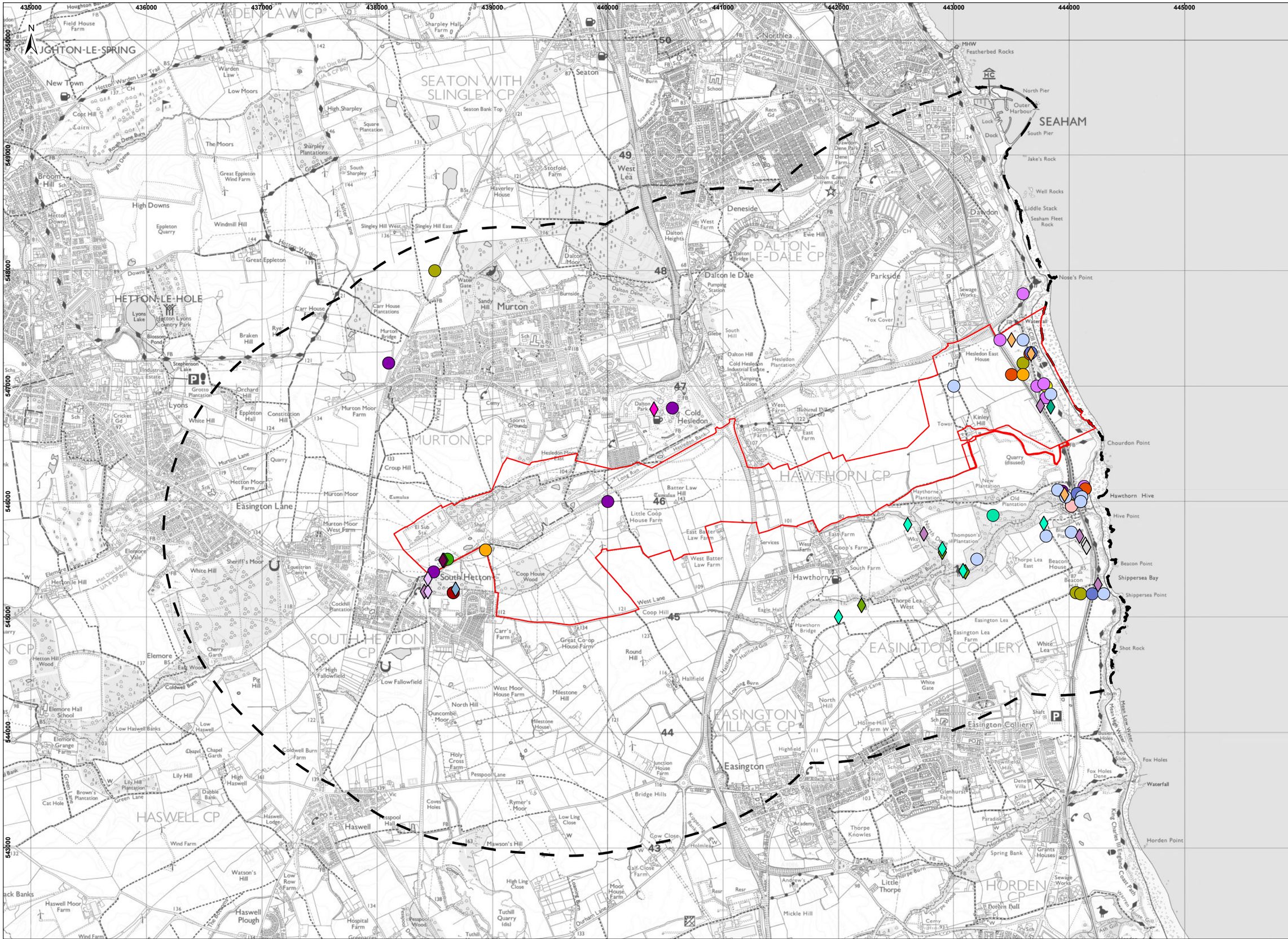
3.4.2.1 The UKHab surveys identified 43 hedgerows within the UKHab Survey Area, totalling approximately 13.9km in length. Hedgerows were most commonly associated with field boundaries and roadside verges. Trees were frequently present within hedgerows, with species including pedunculate oak, sycamore, silver birch, white poplar and plum.

3.4.2.2 The hedgerows recorded were typically 1.5m to 2m in height and usually 1m to 1.5m wide. The condition varied considerably across the survey area, with some hedgerows having no gaps and others being very gappy, to some being considered defunct.

3.4.2.3 Most of the hedgerows recorded were classified as h2a – Native hedgerow (Priority Habitat) or h2a6 – Other native hedgerows (Priority Habitat), reflecting their generally low species diversity and failure to meet the criteria for species-rich hedgerow. These hedgerows were typically dominated by hawthorn, occasionally with other species such as blackthorn, elder and dog-rose. Bramble was often dominant as ground flora.

3.4.2.4 Secondary code 11 – Hedgerow with trees applied to several sections of hedgerow, and several boundary features consisted of w1g 33 – Other broadleaved woodland (Line of trees). These were typically recorded along field margin or roadsides. Species recorded include English elm (*Ulmus procera)*, wild cherry, plum, sycamore, rowan, hawthorn, elder, blackthorn and willow. These lines of trees were recorded north of South Hetton, along West Lane and north of Hawthorn, as shown on **Figure 3.3**.

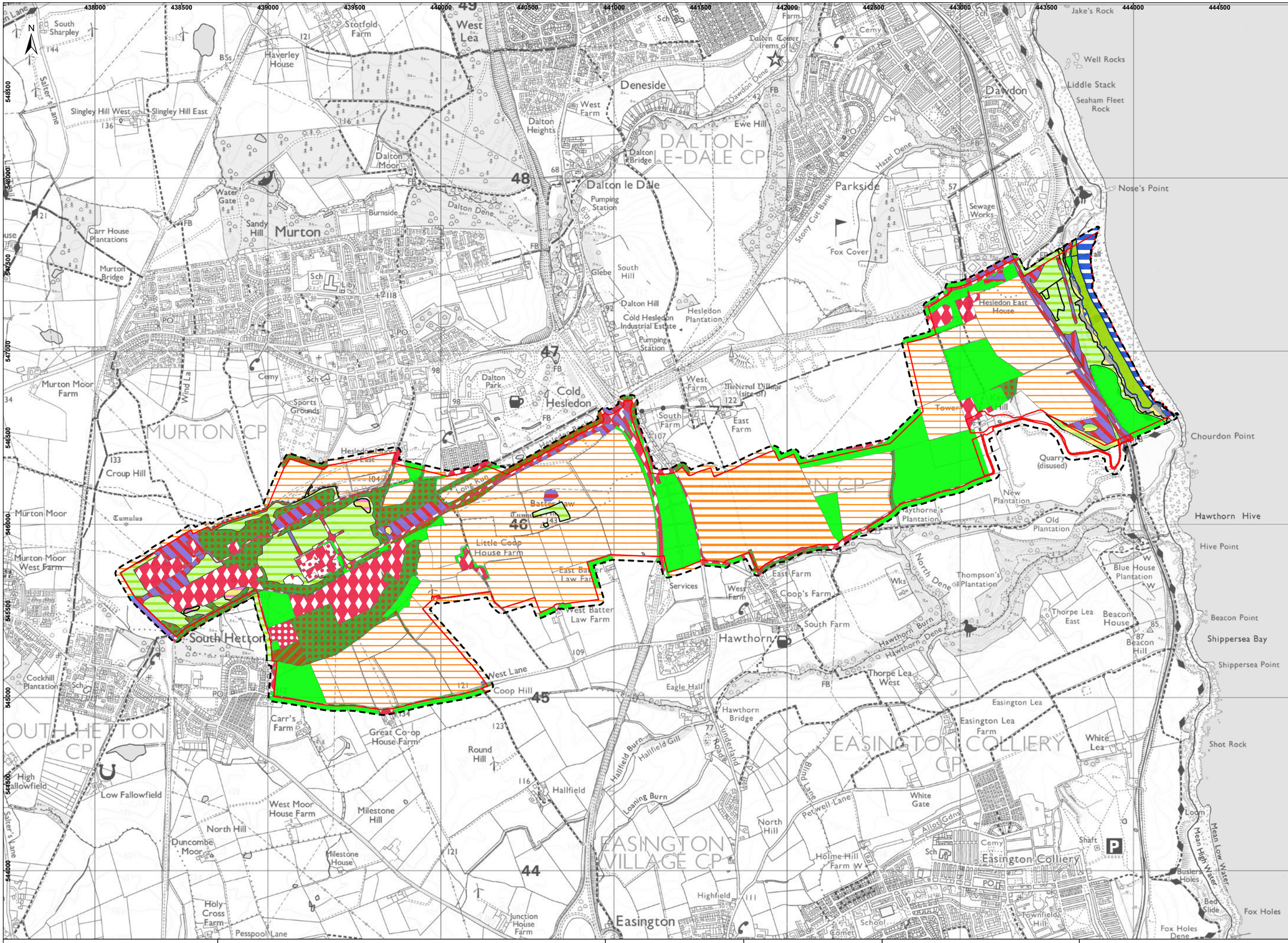
3.4.2.5 At the time of writing, hedgerow surveys to assess hedgerow importance were still ongoing, as defined by the Hedgerows Regulations. These assessments will be completed and reported in the MHPGC Project ES.



Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 3.1: MHPGC PROJECT PLANT ERIC NE RECORDS	0 0.5 km Scale@A3: 1:30,000	**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 Contains public sector information licensed under the Open government License v3.0. © Crown copyright and database rights 2026 Ordnance Survey AC0000848283

Drawing Number: MHPGC-WSP-PEIR-076

VER	DATE	DETAILS	BY	CHECK
01	03/08/2026	Initial Issue	EH	LT
-	-	-	-	-



LEGEND

- MHPGC PEIR Red Line Boundary: Onshore
- UKHab Survey Area - 30m Buffer

UKHab Classification

- c1c - Cereal crops
- c1c7 - Other cereal crops
- f2 - Fen, marsh and swamp
- f2e - Reedbeds
- f2f - Other wetlands
- g2c - Other calcereous grasslands
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3a - Blackthorn scrub
- h3d – Bramble scrub
- h3e – Gorse scrub
- h3h - Mixed scrub
- r1g - Other standing water
- s2a - Maritime cliffs and slopes
- t1f - Other littoral rock
- t2g - Saline lagoons
- t2h - Beach
- u1b5 - Buildings
- u1b6 - Other developed land
- u1c - Artificial unvegetated unsealed surface
- u1d - Suburban mosaic of developed and natural surface
- w1f - Lowland mixed deciduous woodland
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other broadleaved woodland
- w1h - Other woodland; mixed
- w1h5 - Other woodland; mixed; mainly broadleaved

Morven Offshore Wind Farm

Project Name:
MORVEN HAWTHORN PIT GRID CONNECTION PROJECT

Drawing Title:
FIGURE 3.2: MHPGC PROJECT UKHAB AREAS

0 0.5 km
Scale@A3: 1:20,000

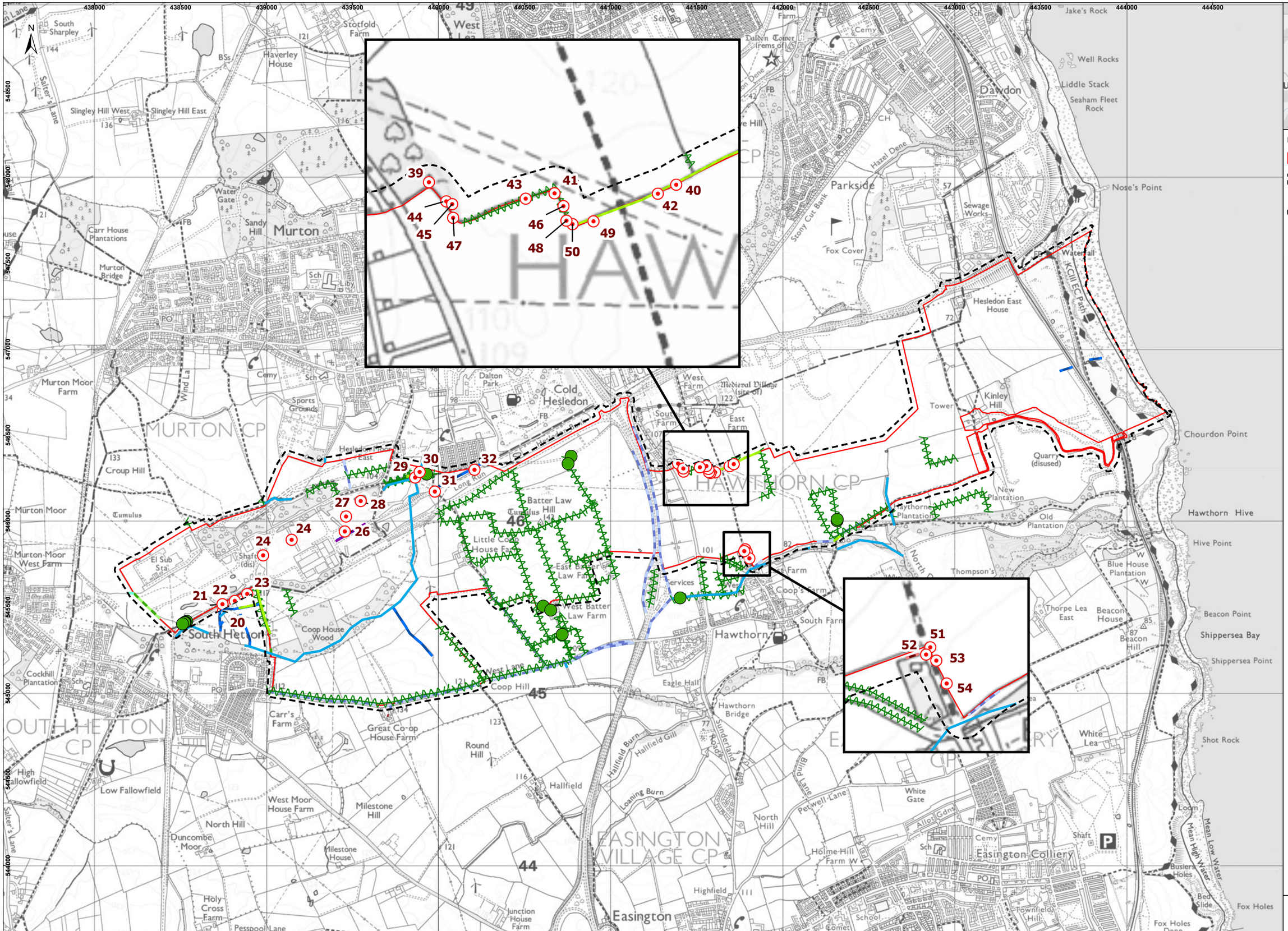
Geodetic Information:
Datum: OSGB 1936
Projection: British National Grid

Data Sources:
BP, Ordnance Survey

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Drawing Number:
MHPGC-WSP-PEIR-077

VER	DATE	DETAILS	BY	CHECK
01	23/09/2026	Initial Issue	RE	LT
-	-	-	-	-





LEGEND

- MHPGC PEIR Red Line Boundary: Onshore
- Hedgerow Survey Area - 30m Buffer
- Target Note

UKHab Classification

- h2 - Hedgerow
- h2a - Native Hedgerow
- h2a6 - Other Native Hedgerow
- r1 - Standing Open Water and Canals
- r1g - Other Standing Water
- r2b - Other Rivers and Streams
- u1e - Built Linear Features
- w1g - Other Broadleaved Woodland
- o - Other; See Notes
- Broadleaved Tree

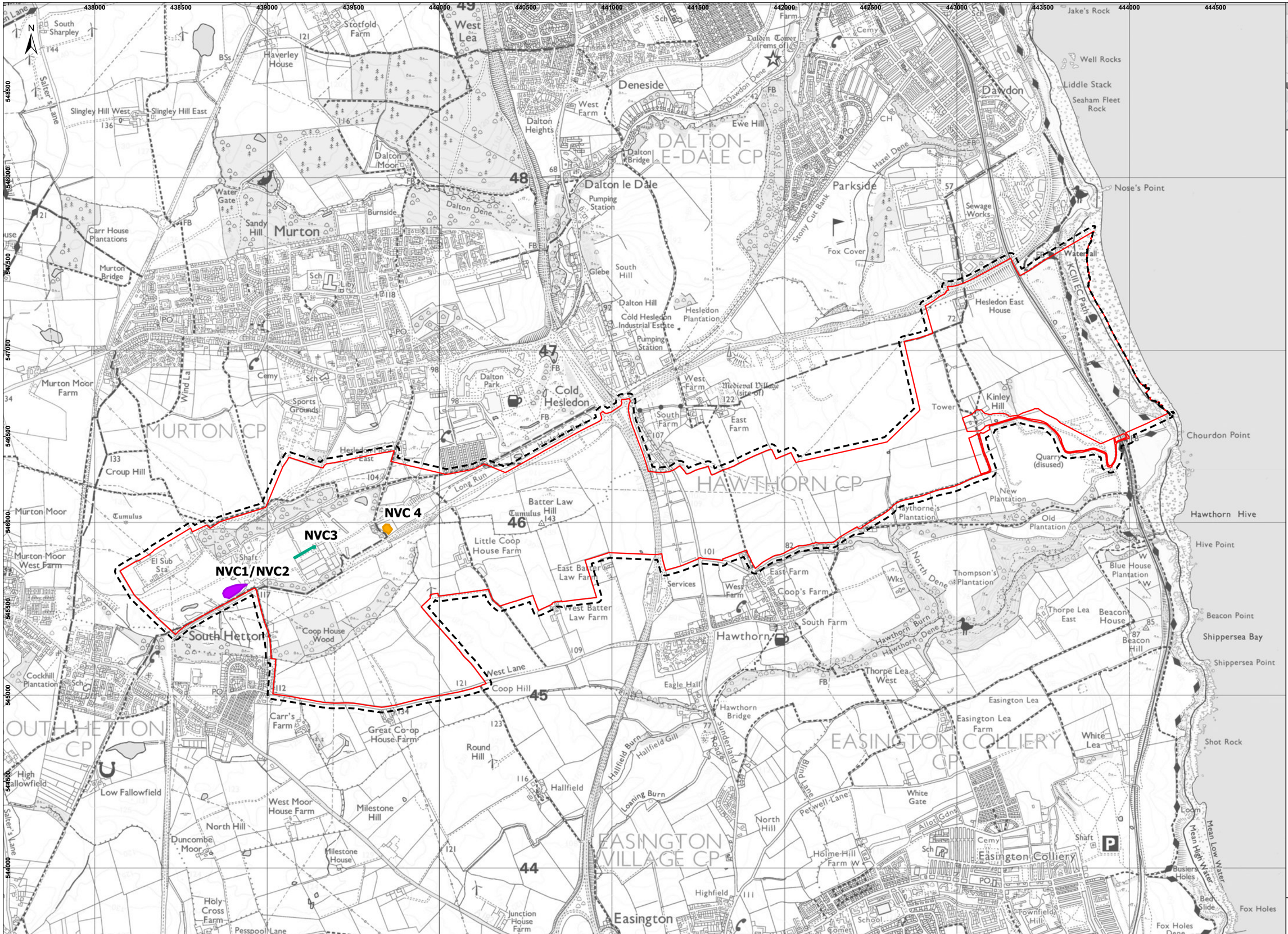
Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 3.3: MHPGC PROJECT UKHAB LINES AND POINTS	0 — 0.5 km Scale@A3: 1:20,000	**Geodetic Information:** Datum: OSGB 1936 Projection: British National Grid	**Data Sources:** BP, Ordnance Survey

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Morven Offshore Wind Farm

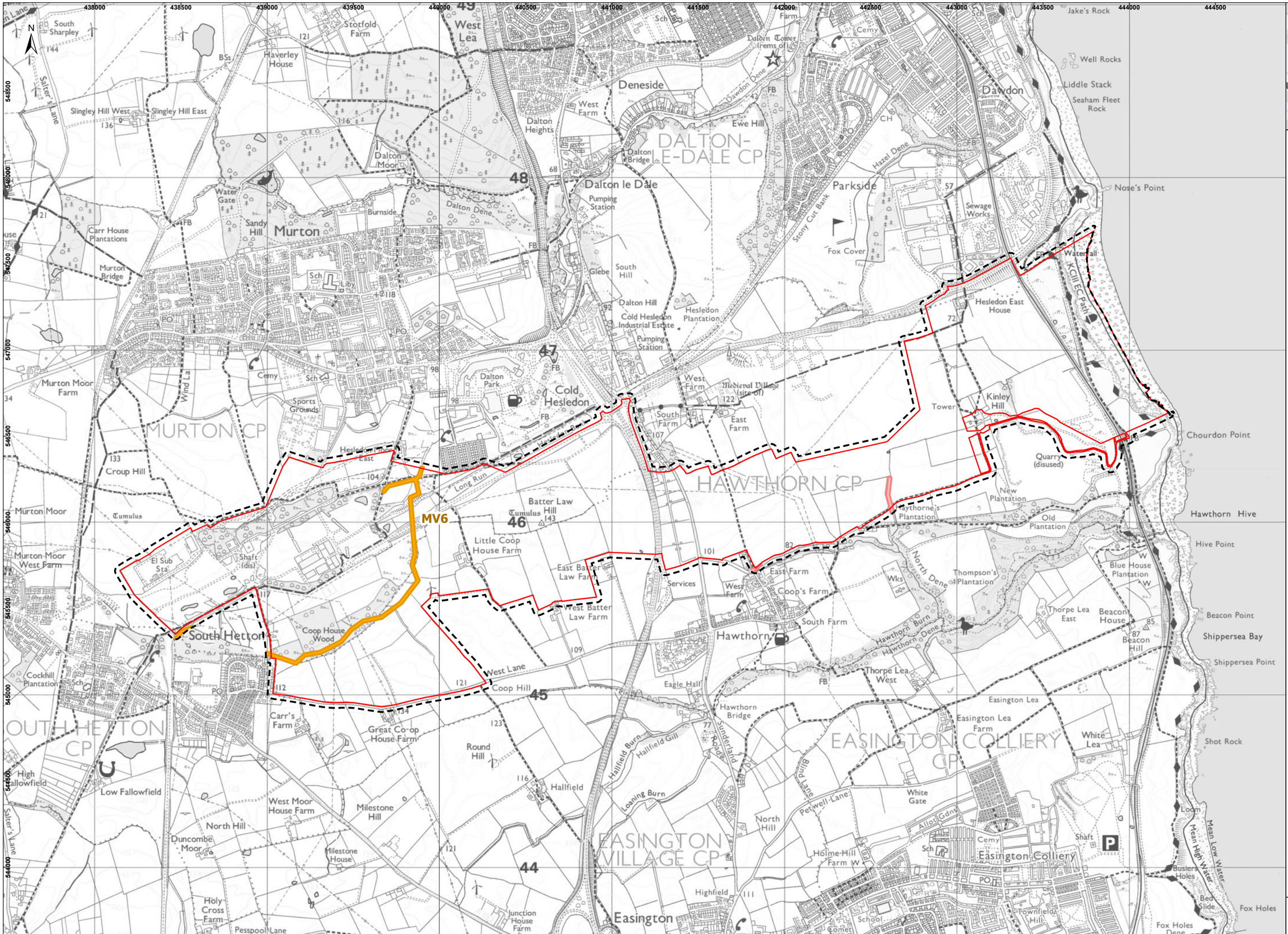
Drawing Number: MHPGC-WSP-PEIR-079

VER	DATE	DETAILS	BY	CHECK
01	03/08/2026	Initial Issue	EH	LT
-	-	-	-	-



Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 3.4: MHPGC PROJECT NVC SURVEY RESULTS	0 0.5 km Scale@A3: 1:20,000	**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 Contains public sector information licensed under the Open government License v3.0. © Crown copyright and database rights 2026 Ordnance Survey AC0000848283	**Drawing Number:** MHPGC-WSP-PEIR-080

VER	DATE	DETAILS	BY	CHECK
01	03/08/2026	Initial Issue	EH	LT
-	-	-	-	-



LEGEND

- MHPGC PEIR Red Line Boundary: Onshore
- RCA Survey Area - 30m Buffer

Condtion

- Moderate
- Not Surveyed

Morven Offshore Wind Farm

Project Name: MORVEN HAWTHORN PIT GRID CONNECTION PROJECT	**Drawing Title:** FIGURE 3.5: MHPGC PROJECT RCA SURVEY RESULTS	0 — 0.5 km Scale@A3: 1:20,000	**Geodetic Information:** Datum: OSGB 1936 Projection: British National Grid	**Data Sources:** BP, Ordnance Survey

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Drawing Number: MHPGC-WSP-PEIR-081

VER	DATE	DETAILS	BY	CHECK
01	03/08/2026	Initial Issue	EH	LT
-	-	-	-	-

4 Summary

4.1 Overview

4.1.1.1 This report presents the results of the UKHab, NVC, RCA and hedgerow desk studies and field surveys undertaken to inform **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR.**

4.2 UKHab

4.2.1.1 UKHab assessments were undertaken to characterise the type and distribution of habitats present within the UKHab Survey Area. UKHab assessments comprised both desk study and field survey. The desk study involved a review of all available data sources and aerial imagery, while field surveys were conducted in accordance with best practice guidance over three survey visits (one visit in June 2025, two visits in August 2025, 01 to 02 April 2026; and 06 to 10 July 2026).

4.2.1.2 The desk study indicated that the Study Area is dominated by agricultural habitats, primarily cereal crops and grazing pasture, with areas of woodland, hedgerows and coastal cliff habitat types also present.

4.2.1.3 The UKHab field survey confirmed the dominance of arable cropland and modified grassland habitat within the Survey Area. Notable habitats included areas other neutral grassland, wetland habitats, scrub and stands of broadleaved and mixed woodland.

4.2.1.4 Invasive non-native plant species were identified within the Survey Area, including giant hogweed, Himalayan balsam and Japanese knotweed.

4.2.1.5 A further field survey was carried out in July, August and September2026 to complete coverage of the UKHab Survey Area. The results will be reported on in the MHPGC Project ES.

4.3 NVC

4.3.1.1 At time of writing this report, data is available from NVC surveys carried out in four discrete areas of higher ecological value within the NVC Survey Area in 2025. These areas included priority and sensitive habitats within designated sites (such as SSSIs) and wetlands. The objective of the survey was to classify the plant communities present in accordance with best practice survey methodologies for NVC classification.

4.3.1.2 Of the areas surveyed in 2025, four distinct NVC communities, comprising three types of wetland habitat. These included:

- Two areas of MG10 – (*Holcus lanatus) – (Juncus effusus)* rush-pasture
- One area of S12 – (*Typha latifolia)* swamp
- One area of S4 – (*Phragmites australis)* swamp and reedbeds

4.3.1.3 Further field surveys have been carried out in summer 2026 to complete coverage of the NVC Survey Area, including Durham Coast SSSI and Hesledon Moor East SSSI; and habitats forming parts of Hawthorn Dene SSSI and Hesledon Moor West SSSI as per Natural England's advice. The results shall be reported on in the MHPGC Project ES.

4.4 RCA surveys

4.4.1.1 A programme of RCA was undertaken, comprising a desk study and field survey covering the RCA Survey Area. The desk study identified four watercourses present within the MHPGC PIER Red Line Boundary: Onshore using aerial imagery and Ordnance Survey mapping.

4.4.1.2 Following the completion of the RCA field surveys, two of the four watercourses were classified as field ditches and were not subject to further assessment. The remaining two watercourses, South Hetton Burn and Hallfield Burn, were surveyed using MoRPh methodology.

4.4.1.3 Both watercourses were classified as straight sinuous rivers. South Hetton Burn was assessed as being in Moderate condition, while Hillfield Burn was assessed as being in Fairly Good condition. These results comprise a full assessment of the condition of a watercourse.

4.5 Hedgerow surveys

4.5.1.1 Hedgerows, treelines and individual trees were commonly recorded within the Study Area during UKHab surveys. A targeted hedgerow survey was undertaken across the Hedgerow Survey Area to map the distribution and condition of hedgerows within the Hedgerow Survey Area.

4.5.1.2 An initial assessment of hedgerows was carried out in conjunction with the UKHab field surveys, following guidance set out in the Hedgerow Survey Handbook (Defra, 2007).

4.5.1.3 A total of 43 hedgerows were recorded within the Hedgerow Survey Area, with a combined length of 13.9km. Most of the hedgerows recorded were classified as h2a – Native hedgerow and h2a6 – Other native hedgerows (Priority Habitat), reflecting generally low species diversity. These hedgerows were typically dominated by hawthorn, occasionally with other species such as blackthorn, elder and dog-rose.

4.5.1.4 Further field surveys were carried out in July and September 2026 to complete coverage and to assess whether any of the hedgerows have the potential to qualify as 'important' under the Hedgerows Regulations 1997. The results of these surveys shall be reported on in the MHPGC Project ES.

4.6 Further surveys

4.6.1.1 This report includes data from surveys up to the end of April 2026. Further surveys were completed in 2026 to complete the survey coverage for the UKHab, NVC and Hedgerow Surveys. No further RCA survey work is required. Field survey data gathered during summer 2026 shall be reported on in the MHPGC Project ES.

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Appendix A

Table A-1: Summary of red list plant species records obtain from ERIC NE

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
Flowering plants				
Autumn gentian (*Gentianella amarella)*	4	434000 430000 433000 448500	537600 530000 540000 536800	2023; 2024.
Basil thyme (*Clinopodium acinose)*	3	434100 433900 434010	537500 537400 537650	2023; 2024.
Bird's-eye primrose (*Primula farinosa)*	5	432000 443900 443890	538000 537400 537420	2023; 2024; 2025.
Bitter-vetch (*Lathyrus linifolius)*	10	429000 428000 428000 428380 428300 428430 428380 428300	547000 545000 544000 544830 544880 545000 544830 544700	2020; 2021; 2022; 2023; 2025.
Bloody crane's-bill (*Geranium sanguineum)*	41	440000 432000 448300 443840 448600 444300 444110 445080 446340 443200 445450 445510 447120 444100 445550 447510 445400 448500 444018 445470 445450 445540 447100	530000 548000 537000 546930 536800 545200 546040 541380 539840 545500 540720 540830 539090 546000 540720 538260 540800 536900 545734 540590 540830 540840 539000	2020; 2021; 2022; 2023; 2024; 2025.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		448290 443600 432480 448000 446200 443800 443000 444000 432000 443900 443970 445110 446430 445450 445520 448600	537190 547400 548580 536000 539400 545700 547000 542000 542800 546100 546040 540590 539850 540740 540760 536700	
Box (*Buxus sempervirens)*	1	432000	542800	2024
Burnt orchid (*Neotinea ustuata)*	1	448940	536510	2023
Carline thistle (*Carlina vulgaris)*	24	434700 441300 445500 444100 444200 433160 437400 443670 438300 434000 432000 437000 434200 449060 437400 445710 447440 434180 448210 448260 444070	552700 562700 540700 546000 545200 544640 537300 547290 559800 537000 538000 537000 537500 536350 537400 540630 538420 537600 537430 537350 546070	2020; 2021; 2022; 2023; 2024; 2025.
Chamomile (*Chamaemelum nobile)*	1	442000	543000	2022
Chicory (*Cichorium intybus)*	5	433310 433110 439630	555800 556040 557610	2020; 2024

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		435000 433600	550000 558800	
Common butterwort (*Pinguicula vulgaris*)	15	437400 437370 437300 437360 432000 443800 437030 443890 437380 437500 445700	537300 537380 537300 537360 538000 537400 537670 537430 537380 537450 540630	2020; 2021; 2022; 2023; 2024; 2025.
Common cottongrass (*Eriophorum angustifolium*)	1	438610	545500	2023
Common cow-wheat (*Melampyrum pratense*)	2	420000 429300	550000 543900	2024
Common rock-rose (*Helianthemum nummularium*)	29	445700 435722 445510 433000 432000 434100 433800 447120 434000 448800 435230 434180 444000 444020 446530 445520 434000 434180 434200 434200 432680 433100 433200 433240 433700 433790 433900	540500 550719 540760 537000 538000 537500 538230 539080 537000 536500 554420 537530 541000 545960 539580 540760 537600 537540 537500 539700 538550 537200 537100 537280 538200 538210 537400	2020; 2022; 2023; 2024; 2025.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		434100	537500	
Common valerian (*Valeriana officinalis)*	10	428000 434000 433000 438660 428000	546000 538000 537000 545210 542000	2020; 2023; 2024.
Corn marigold (*Glebionis segetum)*	1	427000	545000	2024
Creeping willow (*Salix repens)*	1	445760	540430	2024
Crosswort (*Cruciata laevipes)*	50	429280 428000 432760 437400 429000 430310 428100 434000 446000 437400 434000 433000 434220 441000 427560 429900 445000 433760 428780 428580 428510 433760 438940 433320 434220 445290 428510 432000 435000 428300 439470 432000 430000 420000	550430 541000 548620 537600 547000 555250 552100 537500 539000 537300 538000 537000 538340 539900 543410 545430 540000 538490 541240 541620 541670 538490 545580 537370 538340 540540 541670 538000 549000 551000 537910 537000 540000 530000	2020; 2021; 2022; 2023; 2024; 2025.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		428600 437200 428590 433400 441830 434050 440700 448500 443600	542100 537500 541620 545750 535820 537480 535400 536600 547100	
Devil's-bit scabious (*Succisa pratensis*)	18	443660 435722 433000 434290 444140 434000 438660 443800 443500 448800 434000 445000 432230 439600 444020 446520	547280 550719 537000 538500 546110 538000 545210 537400 547100 536700 537000 540000 543070 540100 545960 539610	2020; 2022; 2023; 2024; 2025.
Dwarf milkwort (*Polygala amarella*)	1	438090	561300	2023
Dyer's greenweed (*Genista tinctoria*)	11	433700 443720 443780 443790 441300 443800 444700 443400 444530 444130 443600	557600 547000 547020 541820 563000 546900 542100 547400 541930 546130 547800	2020; 2021; 2022; 2023; 2024; 2025.
Field garlic (*Allium oleraceum*)	1	442000	538000	2020
Field scabious	35	432000 431000 433150 428000 433080 440000	548900 551000 556230 545000 544680 540000	2020; 2021; 2022; 2023; 2024.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		435722 441300 430000 437000 432730 432000 433100 434100 442060 437300 438490 439890 440000 438100 428320 432500 437000 433300 437070 437530 443940 428700 443500 434180 440560	550719 562700 530000 537000 545490 537000 537500 537500 543270 537300 545390 539240 546000 547200 549690 542640 537600 546200 537570 537420 546090 545100 543800 537620 546810	
Flea sedge (*Carex pulicaris)*	1	443800	547000	2021
Goldenrod (*Solidago virgaurea)*	5	428000 429000 428390 428350 428410	545000 544000 545020 544850 544930	2020; 2023.
Good-King-Henry (*Chenopodium bonus-henricus)*	1	429600	550400	2024
Grass-of-Parnassus (*Parnassia palustris)*	1	445980	540300	2020
Harebell	29	435270 434800 447100 447100 428000 443600 444060 438500	554450 552800 538800 539000 545000 547200 545210 548000	2020; 2021; 2022; 2023; 2024.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		435722 441300 434100 437300 428380 433000 432000 444100 437000 438100 428000 437200 434240 434000 444020 437000 434180 434170	550719 562700 537500 537300 545000 537000 538000 545200 537000 547200 544000 537600 538770 537000 545970 537600 537590 537590	
Heath speedwell (*Veronica officinalis)*	6	438000 438000 443460 430230 429320 443340	561000 561300 539710 546310 543970 545880	2023; 2024.
Heather (*Calluna vulgaris)*	12	428000 445490 420000 438440 428350 430580 438440 445700 439600 439640 445780 445480	545000 540750 540000 545330 544850 545950 545220 540400 540220 540180 540500 540740	2020; 2023; 2024.
Hoary plantain (*Plantago media)*	15	443840 437300 433090 430000 436960 434000 432000 437000 434260 434800	546820 537300 544700 530000 537690 538000 538000 537000 538780 552900	2020; 2021; 2022; 2023; 2024.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		436900 437100 446410	537600 537500 539650	
Lesser spearwort (*Ranunculus flammula*)	12	428000 433000 428360 434570 428360 428400 432260	545000 537000 544880 538770 544890 544910 543080	2020; 2023; 2024.
Maiden pink (*Dianthus deltoides*)	1	440400	546800	2023
Marsh arrowgrass (*Triglochin palustre*)	1	443800	537400	2022
Marsh cinquefoil (*Potentilla palustris*)	1	434100	538400	2020
Marsh fragrant-orchid (*Gymnadenia densiflora*)	3	436000 428300 437360	537000 544900 537450	2023; 2024.
Marsh helleborine (*Epipactis palustris*)	1	430000	530000	2022
Marsh pennywort (*Hydrocotyle vulgaris*)	1	438570	545490	2023
Marsh ragwort (*Jacobaea aquatica*)	2	434000 434550	538000 538770	2023
Marsh valerian (*Valeriana dioica*)	4	438680 443900 443430	545240 537400 537000	2022; 2023.
Pale St. John's-wort (*Hypericum montanum*)	1	433800	538700	2022
Purple milk-vetch (*Astragalus danicus*)	1	444000	542000	2021
Quaking-grass	23	434800 433100 430000 443670 440000 427000 435722	552800 544600 530000 547280 530000 542000 550719	2020; 2021; 2022; 2023; 2024; 2025.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		437340 428300 432000 437400 444304 444300 428000 420000 443960 441830 445760 434180 445520 447430	537250 544900 538000 537400 543649 543600 542000 540000 546060 535820 540430 537600 540760 538410	
Ragged-robin (*Lychnis flos-cuculi)*	9	433000 427974 438580 434580 428430 433700 430000 442460	553000 545032 545490 538780 542490 556400 540000 536450	2020; 2022; 2023; 2024; 2025.
Sainfoin (*Onobrychis viciifolia)*	3	446100 446100 446130	539300 540000 540030	2024; 2025.
Sanicle (*Sanicula europaea)*	28	428610 428000 443830 443330 443380 442400 428400 443830 444400 444340 433310 429290 429290 440000 429340 428340 443780 442900 443080 442600 442000	550680 546000 539970 539790 539460 538880 542300 539970 540150 540110 537400 544580 544610 530000 544490 542450 545810 545590 545400 545800 545000	2020; 2021; 2022; 2023; 2024; 2025.

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		438080	542930	
Spiny restharrow (*Ononis spinosa*)	2	434860 432680	553040 541710	2024
Tormentil	14	432499 445490 444151 433140 444140 444600 434200 434000 434000 433000 428000	549262 540750 545604 537410 545630 536800 538200 538000 537000 537000 542000	2022; 2023; 2024; 2025.
Wild strawberry (*Fragaria vesca*)	30	434000 437400 432800 437300 444250 428000 443750 442800 429900 429910 435722 444151 436900 443800 442740 428430 434000 433000 437400 438410 430000 434240 433300 444090 432000 444200 433190 437000	550000 537300 548500 537600 545280 546000 546830 539100 549200 549200 550719 545604 537600 537600 545720 544970 538000 538000 537400 545220 530000 538770 537300 545700 548610 542300 537760 537000	2020; 2021; 2022; 2023; 2024; 2025.
f	17	428000 428000 429000 440000	546000 545000 547000 530000	2020; 2021; 2022; 2023;

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
		429300 430500 444410 430580 429370 429360 444410 429300 434400 420000 429180 429300 430000	547200 546070 540120 545980 547230 547220 540120 547200 553200 530000 543980 543900 540000	2024; 2025.
Wood-sorrel (*Oxalis acetosella)*	41	429000 428000 442200 432000 443100 427300 420000 429960 428000 429250 429730 429960 429270 443500 429730 440000 444000 428160 429420 442900 429250 429400 428160 428520 429270 429270 428000 429350 420000	547000 546000 545100 554000 545390 544200 540000 545480 545000 543920 544790 545480 544680 537700 544790 540000 543400 541780 545480 545560 543920 547190 541780 542470 544680 547280 542000 544040 530000	2020; 2021; 2022; 2023; 2024; 2025.
Yellow horned-poppy (*Glaucium flavum)*	1	441400	556900	2021
Conifers				

Species	Occurrence (no. of records)	OSGB36 British National Grid		Date
		Easting	Northing	
Juniper (*Juniperus communis*)	2	447560 448130	538210 537550	2024
Fungi				
(Boletus subappendiculatus)	1	538210	538210	2023
Alga				
Coral weed (*Corallina officinalis*)	1	442970	549940	2021

Appendix B

Target notes

To be read in combination with **Figure 3.3: UKHab Lines and Points (Target Notes)**

Table B-1: Summary of target notes

Target Note ID	Description
27	Disturbed land from development, grassland habitat regrowing
28	Wetland habitat
29	Himalayan balsam (*Impatiens glandulifera)* (INNS)
30	Himalayan balsam in ditch (INNS)
31	Giant hogweed (INNS)
32	Japanese knotweed (*Reynoutria japonica)* (INNS)
44	Japanese knotweed (INNS)
44	Japanese knotweed (INNS)

Appendix C

RCA watercourse photo references

Table C-1: Watercourse Photo References

Watercourse Photo References	
South Hetton Burn Upstream	South Hetton Burn Downstream
	
Hallfield Burn Upstream	Hallfield Burn Downstream
	