



Morven Hawthorn Pit Grid Connection Project

Preliminary Environmental Information Report

Volume 3, Annex 3.5: Interim Bat Surveys Technical
Report

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Glossary

Term	Meaning
Bat Survey Area	Habitats within the MHPGC PEIR Red Line Boundary: Onshore, and an additional 50 metre (m) buffer, where considered suitable to support bat roosts
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.
Morven Hawthorn Pit Grid Connection (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 the Planning Inspectorate (on behalf of the Secretary of State) and Marine Directorate Licensing Operations Team (MD-LOT) (on behalf of the Scottish Ministers) and the Marine Management Organisation (MMO) in response to the MHPGC Scoping Report prepared by the Applicants. The MHPGC Scoping Opinions contain the range of issues that the Planning Inspectorate, and MD-LOT in consultation with statutory stakeholders, have identified should be considered within the Environmental Impact Assessment (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 – Licensing Operations Team (MD-LOT) in February 2025.
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.
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.
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.
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

Term	Meaning
	which likely significant effects of the MHPGC Project may be experienced by the relevant receptors (i.e. Zone of Influence (Zol)).
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.

Acronyms

Unit	Meaning
BCT	Bat Conservation Trust
DEFRA	Department for Environment, Food, and Rural Affairs
DBW	Daytime Bat Walkover
EA	Environment Agency
EIA	Environmental Impact Assessment
EPS	European Protected Species
ERIC NE	Environmental Records Information Centre North East
ES	Environmental Statement
FAR	Further Assessment Required
GLTA	Ground Level Tree Assessment
ILP	Institution of Lighting Professionals
MAGIC	Multi-Agency Geographic Information for the Countryside
MD-LOT	Marine Directorate – Licencing Operations Team
MHPGC	Morven Hawthorn Pit Grid Connection
MMO	Marine Management Organisation
NE	Natural England
NBN	National Biodiversity Network
NBW	Night-time Bat Walkover
NVAs	Night Vision Aids
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PRA	Preliminary Roost Assessment
PRF	Potential Roost Feature
SAC	Special Area of Conservation
SoS	Secretary of State
SSSI	Site of Special Scientific Interest
UKHab	UK Habitat Classification

Units

Unit	Meaning
cm	Centimetre
°C	Degrees Celsius
km	Kilometre
m	Metre

Executive Summary

This report presents the results of the bat desk study, and field surveys undertaken in September 2025 and Spring 2026 for the Morven Hawthorn Pit Grid Connection Project (referred to hereafter as the MHPGC Project) to inform **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR**.

The desk study identified historical records of bat activity within the Bat Study Area (MHPGC PEIR Red Line Boundary: Onshore, with a 10 kilometre (km) buffer applied), from the Environmental Records Information Centre North East (ERIC NE). These records show a continued presence of bats comprising multiple species.

The desk study and Daytime Bat Walkover (DBW), completed between June 2025 and September 2025, identified areas of woodland, trees and buildings/structures, considered to be suitable to support bats and provided the necessary information to refine the areas to be surveyed as part of the field surveys. A programme of Ground Level Tree Assessment (GLTA) surveys were undertaken in September 2025, and April 2026, across the Bat Survey Area (habitats within the MHPGC PEIR Red Line Boundary: Onshore, and an additional 50 metre (m) buffer, where considered suitable to support bat roosts). Nighttime Bat Walkover (NBW), dusk emergence and aerial inspection surveys were completed in Summer 2026, where the requirement for further survey was identified during the DBW and Preliminary Roost Assessment (PRA)/GLTA surveys.

The GLTA field surveys were carried out in line with best practice guidance (Collins, 2023) within the identified Bat Survey Area. The surveys involved licensed and experienced surveyors conducting walkover surveys, examining pre-identified habitat areas for trees with features suitable to support roosting bats.

Morton Woods was previously located within earlier iterations of the project design and were subject to GLTA surveys in September 2025. Due to the iterative nature of the MHPGC Project design, Morton Woods has since been removed from the project boundary and is located approximately 2 kilometres (km) outside of the Bat Survey Area. However, this area has been retained within the Contextual Bat Survey Area due to the survey data recorded and its potential relevance to the impact assessment. In Morton Woods, two trees were identified (Tree 7 and 8) where brown long-eared bat *Plecotus auritus* roosts were confirmed as present. These were confirmed via endoscopic inspection of the trees. Several PRF-I and PRF-M trees were also recorded here.

GLTA surveys were undertaken throughout the Bat Survey Area where suitable habitat for roosting bats was present. This included two pockets of woodland adjacent to Hawthorn Dene Nature Reserve (including Haythorne Plantation) which supported multiple mature trees in addition to standing deadwood. A third pocket of woodland was identified within Kinley Hill Farm, adjacent to Hawthorn Quarry on its northern side of which, the eastern half of this woodland supported a more natural habitat and contained multiple mature trees. Coop House Wood, situated to the northeast of South Hetton, was found to contain numerous trees with roosting suitability, in particular a large number of ash trees assumed to have ash dieback, which contained features including knot holes, rot holes, tearouts and woodpecker holes. A small ash-dominant woodland was identified directly east of the B1432 which contained two trees identified to have suitability for roosting bats. A line of mature trees was situated at the northern end of Hawthorn village, which were all identified as having features suitable for roosting bats. A summary of PRFs found during the surveys is provided in **Table 3.2**.

The confirmed bat roosts and potential roost features (PRFs) found in Morton Woods indicate that bats are present in the wider area. Bats are highly mobile species and presence within the Bat Survey Area is likely where foraging and commuting habitat is widely distributed. No incidental sightings were recorded during the bat field surveys.

The results of the NBW, dusk emergence and aerial inspection surveys, completed during Summer 2026, will be set out in the forthcoming Environmental Statement (ES). Emergence surveys and aerial inspections have been completed for all areas identified as requiring further survey effort based on the results of the GLTA/PRA surveys and undertaken in accordance with the methodology set out within **Section 3.3, Volume 3, Annex 3.1: Terrestrial Ecology and Terrestrial and Intertidal Ornithology Survey Methodologies Technical Report, of the PEIR**.

1 Introduction

1.1 Overview

- 1.1.1.1 This report presents the bat surveys undertaken for the Morven Hawthorn Pit Grid Connection Project (referred to hereafter as the MHPGC Project). It forms **Volume 3, Annex 3.5: Interim Bat 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 This report presents the results of the desk study, and the initial Preliminary Roost Assessment (PRA) and Ground Level Tree Assessment (GLTA) surveys undertaken in September 2025 and April 2026, across the Bat Survey Area (habitats within the MHPGC PEIR Red Line Boundary: Onshore, and an additional 50 metre (m) buffer, where considered suitable to support bat roosts).
- 1.1.1.3 The desk study, and Daytime Bat Walkover (DBW) completed concurrently with the UKHab surveys (see **Volume 3, Annex 3.2: UK Habitat Classification, National Vegetation Classification, River Condition Assessment and Hedgerow Surveys Technical Report, of the PEIR**) between June 2025 and September 2025, identified areas of woodland, trees and buildings/structures considered to be suitable to support bats and provided the necessary information to refine the areas to be surveyed as part of the field surveys. The bat surveys completed to date assess the suitability of trees within the MHPGC PEIR Red Line Boundary: Onshore and the areas in earlier iterations of the Red Line Boundary to support populations of bats. The results of the GLTA surveys have been used to inform the requirement for further dusk emergence and aerial inspection surveys where required. The results of the desk study and DBW have been used to inform the location and requirement of the static bat detectors and Nighttime Bat Walkover (NBW) routes (**Figure 3.2**). The further emergence, aerial inspection, and NBW surveys have been undertaken in Summer 2026, the results of which will be set out in the forthcoming Environmental Statement (ES).

1.2 Legislation

- 1.2.1.1 Bats are European Protected Species (EPS). All bat species and their roosts are legally protected in the UK by legislation including the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). It is therefore considered an offence to:
- Deliberately capture, injure or kill a bat;
 - Deliberately disturb a bat;
 - Damage or destroy a breeding site or resting place (roost) of a bat. This applies whether bats are present or not.
 - Intentionally obstruct access to any structure or place of shelter or protection by bats (even when bats are not present);
- 1.2.1.2 Developers must comply with the legal protection of bats. A mitigation licence accompanied by an appropriate mitigation strategy issued by Natural England is required for developers to carry out proposed works considered to comprise the above-mentioned activities, which would otherwise be illegal.

1.3 Consultation and engagement

1.3.1 EIA 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 Further detail regarding consultation undertaken with respect to terrestrial ecology and terrestrial and intertidal ornithology can be found in **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR.**

2 Methodology

2.1 Overview

- 2.1.1.1 A combination of desk study and field surveys were undertaken for the MHPGC Project to ascertain the presence of bats within the MHPGC Project PEIR Red Line Boundary: Onshore. The objectives of the desk study and surveys undertaken to date were to identify suitable trees and habitats with the potential to support roosting bats. This has been used to complete further NBW, dusk emergence, and aerial inspection surveys to determine the presence/absence of bat roosts and bat activity within the MHPGC Project PEIR Red Line Boundary: Onshore to inform working methods and mitigation requirements of the project where impacts to bats or their roosts could occur.

2.2 Study Area

- 2.2.1.1 The study area was intended to cover the area within which an impact (direct or indirect) can be reasonably expected to occur and describes the geographical extent subject to desk-based research.
- 2.2.1.2 The study area considered for bats (hereafter referred to as the Bat Study Area) is the area subject to a desk study for bat species within England and comprises the MHPGC PEIR Red Line Boundary: Onshore, with a 10 kilometre (km) buffer applied, noting that the buffer is clipped to MHWS and does not extend 10km offshore. This buffer is considered appropriate given the size and nature of the MHPGC Project, in line with BCT best practice survey guidance (Collins, 2023).
- 2.2.1.3 The location and geographic extent of the Bat Study Area is presented in **Figure 2.1**.

2.3 Survey Area

2.3.1 Overview

- 2.3.1.1 The survey areas considered for bats comprises the Bat Survey Area and the Contextual Bat Survey Area, which are defined below. The location and geographic extent of both survey areas are presented in **Figure 2.2**. The survey areas have been divided up into several Areas, and numbered from 1 to 12, as shown on **Figure 2.2**.

2.3.2 Bat Survey Area

- 2.3.2.1 The Bat Survey Area was defined as the habitats within the MHPGC Project PEIR Red Line Boundary: Onshore, and an additional 50 metre (m) buffer, considered suitable to support bat roosts. GLTA surveys have been undertaken of suitable trees and PRA surveys of suitable buildings/structures, where present, have been undertaken where required.
- 2.3.2.2 In addition, static surveys and NBW transects have been designed to include sufficient coverage of the Bat Survey Area. Static detector locations and NBW transect routes are depicted in **Figure 3.2**. In some instances, the route of the transects go beyond the Bat Survey Area to ensure coverage of suitable habitat linked to the MHPGC Project.

2.3.3 Contextual Bat Survey Area

- 2.3.3.1 Morton Woods was previously located within an earlier iteration of the MHPGC PEIR Red Line Boundary: Onshore and has been subject to GLTA surveys. Morton Woods has since been removed from the project design and is located approximately 2km outside of the Bat Survey Area. However, this area has been retained as the Contextual Bat Survey Area (**Figure 2.2**) due to the survey data recorded.

2.3.4 Access Restrictions

- 2.3.4.1 It should be noted that private gardens, roads and carriageway embankments, railways and railway embankments and areas under construction were excluded from the Bat Survey Area and will be excluded from the Bat Survey Area. Where access was not possible to private land, a review of satellite mapping, together with a visual survey from adjacent land, was utilised.

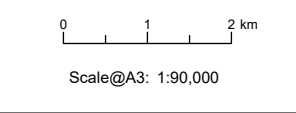
2.3.4.2 The area including and surrounding the Jade Business Park and Hawthorn Pit Substation (**Figure 2.2**) has been partly accessed during bat surveys to date due to access restrictions related to the ongoing construction works in this area. This is discussed further in **Section 2.4.4**.



- LEGEND**
- MHPGC PEIR Red Line
 - Boundary: Onshore
 - Bat Study Area - 10km Buffer

Project Name:
MORVEN HAWTHORN PIT GRID
CONNECTION PROJECT

Drawing Title:
FIGURE 2.1 MHPGC PROJECT BAT STUDY AREA



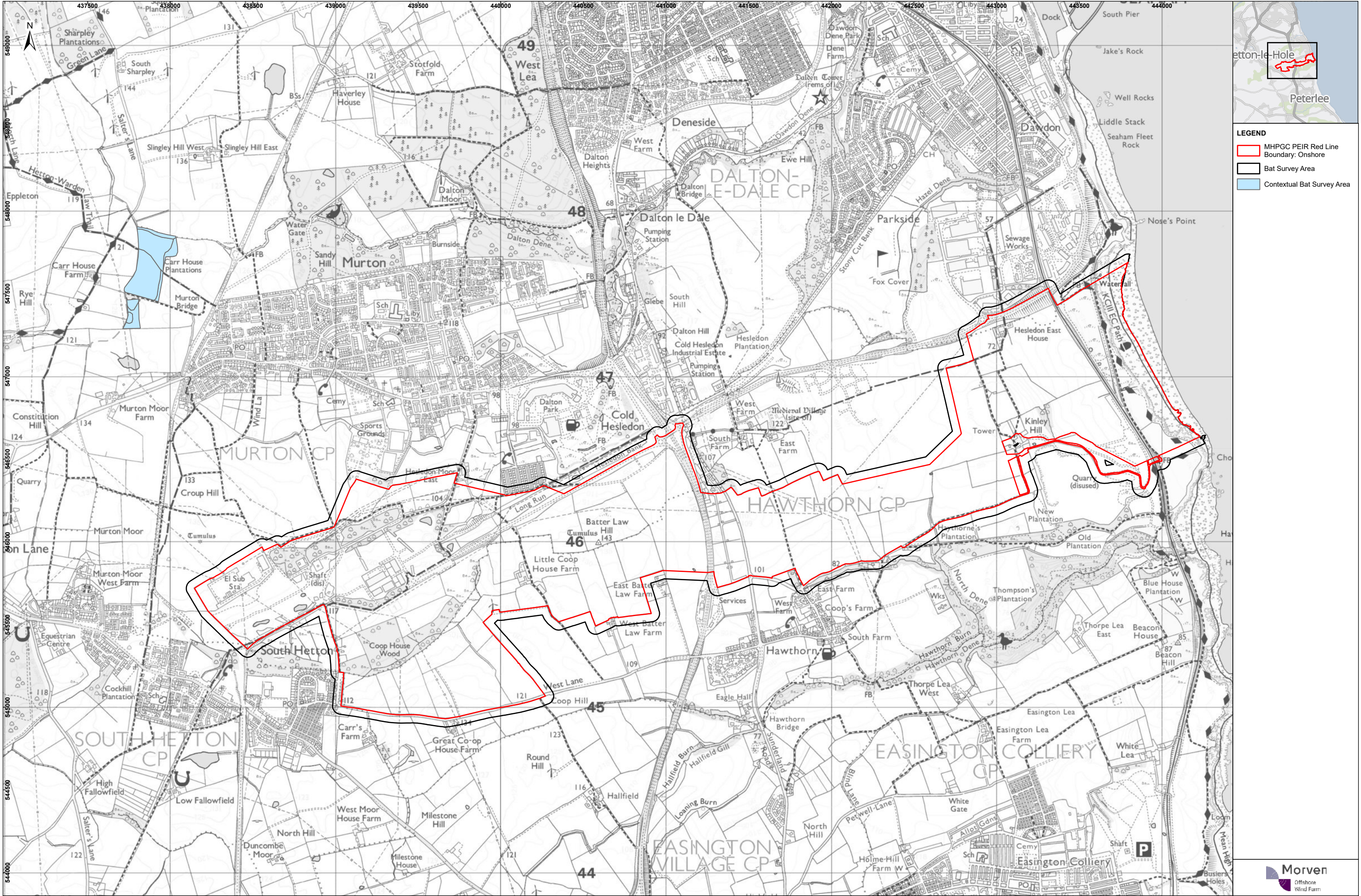
Geodetic Information:
Datum: OSGB 1936
Projection: British National Grid

Data Sources:
BP, Ordnance Survey

Service Layer Credits:
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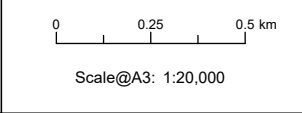


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Project Name:
MORVEN HAWTHORN PIT GRID
CONNECTION PROJECT

Drawing Title:
FIGURE 2.2 MHPGC PROJECT PRA/GLTA BAT SURVEY AREA



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

Data Sources:
BP, Ordnance Survey

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2.4 Survey Methodology

2.4.1 Desk Study

- 2.4.1.1 The purpose of the desk study was to collect and analyse existing baseline data in relation to bat records and designated sites notified for bat species within the Bat Study Area. The existing baseline data has been gathered using publicly available data on the Defra Multi-Agency Geographic Information for the Countryside (MAGIC) Map (Natural England, n.d.), as well as a request to the ERIC NE for records of bats within the Bat Study Area for the previous five years (made in October 2025).

2.4.2 Field Survey

PRA and GLTA

- 2.4.2.1 The desk study and DBW identified areas of woodlands, trees, or buildings/structures with potential to support roosting bats and provided the necessary information to refine the areas to be surveyed as part of the PRA/GLTA surveys. The DBW was carried out during the UKHab surveys, following good practice guidelines (Collins, 2023), completed between June 2025 and September 2025.
- 2.4.2.2 The GLTA surveys have been, carried out in line with good practice survey guidance (Collins, 2023) within the Bat Survey Area. The initial GLTA surveys were undertaken in the week of the 15 September 2025 by experienced ecologists, with further GLTA (and PRA) surveys undertaken in the week of the 20 April 2026. The PRA/GLTA survey involves surveyors conducting a daytime visual inspection of buildings/structures and trees (limited to exterior elevations for buildings/structures, and trees, both external elevations and internal voids) within the Bat Survey Area.
- 2.4.2.3 Buildings/structures and trees were assessed for their potential to support bats based on the presence of potential roost features (PRFs), in accordance with BCT good practice survey guidelines (Collins, 2023) and professional judgement. The types and features of buildings/structures and trees with potential to support roosting bats are set out within the BCT guidelines.
- 2.4.2.4 Surveys via endoscope or tree climbing were carried out where PRFs could not be assessed adequately via ground surveys, undertaken by an ecologist with a Class 2 (CL18) Natural England bat licence, and a tree climbing certification, where applicable.
- 2.4.2.5 During the PRA (where this was required to be undertaken), each building/structure was categorised dependent on the presence of PRFs in accordance with the current BCT survey guidelines (Collins, 2023), as set out in **Table 2.1**, below.
- 2.4.2.6 During the GLTA, each tree was categorised according to the presence of PRFs in accordance with the current BCT survey guidelines (Collins, 2023), as set out in **Table 2.2**, below.

Table 2.1: Bat Roosting Suitability Categories in Built Structures

Roost Potential	Description
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).

Roost Potential	Description
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

Table 2.2: Bat Roosting Suitability Categories in Trees

Roost Potential	Description
None	Either no potential roost features (PRFs) in the tree or highly unlikely to be any.
FAR	Further assessment required (FAR) to establish if PRFs are present in the tree.
PRF	A tree with at least one PRF Present.

2.4.2.7 For any trees for which PRFs were present and could be assessed from ground level, a GLTA was carried out. Details of the PRFs present were recorded, including their location, width, depth, type and any evidence of bat presence such as scratching, staining or live/dead bats. These trees were further assigned suitability categories as outlined in **Table 2.3**.

Table 2.3: Guidelines for categorising the potential suitability of tree PRFs on a proposed development site for bats, to be applied using professional judgement

Roost Potential	Description
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity or hibernation colony.

2.4.2.8 All buildings/structures with PRFs with at least Low suitability or higher for roosting bats, and all trees with features classified as PRF-I or higher (as described above), were, and will continue to be mapped with Target Notes via the ArcGIS FieldMaps application on a handheld tablet by surveyors whilst in the field, and their grid references noted.

Emergence Surveys

2.4.2.9 The emergence surveys were carried out in line with BCT best practice survey guidance (Collins, 2023), focusing on structures and trees that have been identified as having suitability to support roosting bats, situated within the Bat Survey Area. The bat emergence surveys were completed on the following dates; 17-18 June 2026, 20-24 July 2026, 17-21 August 2026, and 01-04 September 2026 which is within the optimum survey window for bat emergence surveys: May to September. The visits were spaced at least three weeks apart (with at least two visits between May and August).

2.4.2.10 The emergence survey design was informed by the findings of the PRA/GLTA survey, specifically where:

- Any building/structure or trees are assessed as low/moderate/high suitability (for buildings/structures), PRF-I or PRF-M (for trees) or confirmed roosts following the PRA/GLTA surveys;
- The PRA/GLTA did not rule out the reasonable likelihood of a roost being present, but no definitive evidence of the presence of bat roosts has been recorded;
- A comprehensive inspection survey of a structure was not possible because of restricted access, but there are features with a reasonable likelihood of supporting bats;
- There were PRFs present but a risk that evidence of bat use may have been removed by weather or human activities;

- A feature could not be safely accessed for inspection (e.g. Dead tree) or may be damaged by close inspection (e.g. Lifted bark).

2.4.2.11 Bat emergence surveys comprised dusk visits to determine presence/absence of bat roosts. The dusk visits involved recording confirmed emergences (using a bat detector and Night Vision Aids (NVAs)), compiling information on species of bat, numbers of bat, access points, roosting locations and flightpaths. The timings of the surveys commenced at least 15 minutes before sunset and finished at least one and a half to two hours after sunset which is in accordance with BCT best practice survey guidance. The results of the dusk emergence surveys will be presented in the ES.

Aerial Inspection Surveys

2.4.2.12 Trees categorised as either FAR or PRF during the GLTA surveys were subject to detailed at-height climbing inspections (where safe and accessible to do so). These inspections were required where features could not be confidently categorised as PRF-I or PRF-M from ground level, in order to obtain sufficient information to determine their roosting suitability. The climbing surveys were undertaken on 20-24 July 2026.

2.4.2.13 Inspections were undertaken using appropriate access methods, including tree climbing equipment (ropes and harnesses) and ladders. A torch and endoscope were used as necessary to inspect PRFs. During these inspections, trees were re-assessed and the characteristics and suitability of PRFs recorded, including aspect and dimensions. Based on the information collected, trees were assigned a final suitability classification as appropriate outlined in **Table 2.2** and **Table 2.3**.

2.4.2.14 Trees were also inspected for field signs of roosting bats to help determine presence/absence at the time of survey if no bats are observed in PRFs. Field signs of bats using a roost can include faeces, scratch marks, or oil staining from fur rubbing. The results of aerial inspection surveys will be presented in the ES.

Bat Activity Surveys

2.4.2.15 Utilising the desk-based exercise detailed above, GIS database and a review of the Bat Survey Area, an approach has been taken to monitor and assess bat activity, based on professional judgement. This includes a series of NBW transects and static bat detector deployment surveys undertaken in line with the BCT Good Practice Survey Guidelines (Collins, 2023).

2.4.2.16 NBW transects have been chosen (presented in **Figure 2.2**) where linear features are present to offer suitable foraging and commuting habitat for bats (i.e. along treelines, hedgerows and woodland edges). To ensure adequate coverage of suitable habitats, the transects do go beyond the MHPGC PEIR Red Line Boundary: Onshore to provide robust data of local bat populations and how they are using the habitats that could be impacted by the project. During the surveys, transects are walked by surveyors equipped with hand-held bat detectors to record bat activity. Bat activity surveys were undertaken on 17-18 June, 20-24 July and 17-21 August 2026. The timings of the surveys are based on site-specific circumstances, commencing at sunset and finishing at least two hours after sunset which is compliant with the BCT best practice survey guidance.

2.4.2.17 In tandem with the NBW surveys, a number of static bat detectors were deployed in various areas to investigate bat activity throughout the Bat Survey Area. At least two static detectors were located on each of the NBW transect routes. Static locations will include areas likely to be impacted by the scheme, whilst ensuring adequate coverage of perceived important habitat for bats (**Figure 3.2**). The results of NBW surveys will be presented in the ES.

2.4.3 Incidental Records

2.4.3.1 Any sightings of non-target species (or evidence of) recorded during surveys were recorded in the separate incidental records form on the Field Maps application.

2.4.4 Limitations

2.4.4.1 Bat activity levels are liable to fluctuate seasonally, and/or in response to other environmental factors. As with any ecological study, the bat survey provides only a 'snapshot' of the conditions of the given survey area prevailing at the time of the visit.

- 2.4.4.2 It should be noted that the availability and quality of the information obtained during the desk study is reliant on third party responses and recorders. This varies for regions and different species groups. Furthermore, the comprehensiveness of information often depends on the level of coverage, the expertise and experience of the recorder and the submission of records to the local recorder. This is not considered to be a limitation of the desk study and its ability to inform the baseline of the Study Area as this was, and will continue to be, further supplemented by the field surveys.
- 2.4.4.3 It should be noted that private gardens, roads and carriageway embankments, railways and railway embankments and areas under construction were excluded from the Bat Survey Area. Where access was not possible to access private land, a review of satellite mapping, together with visual assessments from adjacent accessible land, was utilised. As such, this lack of access was not considered to be a significant limitation to this report, and a thorough assessment was still completed.
- 2.4.4.4 The area including and surrounding the Jade Business Park and Hawthorn Pit Substation (**Figure 2.2**) has been partially accessed during the suite of bat surveys due to access restrictions as a result of the ongoing construction works in this area. However, it was noted from accessible land that the trees present in the inaccessible areas were all immature and unlikely to be suitable for roosting bats.

3 Results

3.1 Desk Study

3.1.1 Statutory and non-statutory sites

3.1.1.1 No statutory or non-statutory sites notified for bats were identified within the Bat Study Area.

3.1.2 Local records

3.1.2.1 Records obtained from ERIC NE, specific to records of bat, are listed in **Table 3.1** and shown in **Figure 3.1**. Records from the previous ten years are included in **Table 3.1**. The location (OSGB36 British National Grid Reference) of each record has been detailed within **Appendix A**. Note, due to inaccurate grid references, some records included within this report have grid references that are centred beyond the 10km Bat Study Area but for completeness, they have been included as grid reference provided by ERIC partly covers the Bat Study Area.

Table 3.1: Bat desk study data obtained from ERIC NE

Species	Occurrence (no. of records)	Number of Records Per Year
Unidentified bat	70	• 2016 (8 Records); • 2017 (8 Records); • 2018 (5 Records); • 2019 (8 Records); • 2020 (5 Records); • 2021 (11 Records); • 2022 (2 Records); • 2023 (21 Records); • 2024 (2 Records).
<i>Myotis</i> sp.	37	• 2016 (24 Records); • 2017 (2 Records); • 2019 (2 Records); • 2020 (1 Record); • 2021 (2 Records); • 2022 (2 Records); • 2024 (4 records).
Daubenton's bat	24	• 2016 (4 Records); • 2018 (5 Records); • 2019 (4 Records); • 2020 (2 Records); • 2021 (2 Records); • 2022 (2 Records); • 2023 (5 Records).
<i>Nyctalus</i> sp.	2	• 2016 (2 Records).
Noctule	73	• 2016 (24 Records); • 2017 (4 Records); • 2019 (5 Records); • 2020 (5 Records); • 2021 (4 Records); • 2022 (20 Records);

Species	Occurrence (no. of records)	Number of Records Per Year
		• 2023 (5 Records); • 2024 (5 Records); • 2025 (1 Record).
Leisler's bat	3	• 2017 (2 Records); • 2023 (1 Record).
<i>Pipistrellus</i> sp.	81	• 2016 (16 Records); • 2017 (4 Records); • 2018 (10 Records); • 2019 (8 Records); • 2021 (8 Records); • 2022 (28 Records); • 2023 (3 Records). • 2024 (4 Records).
Common pipistrelle	373	• 2016 (94 Records); • 2017 (29 Records); • 2018 (4 Records) • 2019 (6 Records); • 2020 (10 Records); • 2021 (11 Records); • 2022 (106 Records); • 2023 (10 Records); • 2024 (103 Records).
Soprano pipistrelle	75	• 2016 (20 Records); • 2017 (6 Records); • 2019 (3 Records); • 2020 (3 Records); • 2021 (4 Records); • 2022 (28 Records); • 2023 (3 Records); • 2024 (8 Records).
Nathusius's pipistrelle	5	• 2016 (2 Records); • 2019 (1 Record); • 2023 (2 Records).
Brown long-eared bat	25	• 2016 (10 Records); • 2017 (1 Record); • 2018 (1 Record); • 2019 (1 Record); • 2020 (5 Records); • 2021 (1 Record); • 2022 (1 Record); • 2023 (2 Records); • 2024 (2 Records). • 2025 (1 Record)

3.2 PRA and GLTA

Contextual Bat Survey Area

- 3.2.1.1 Murton Woods was visited during the GLTA field surveys. As mentioned above (**Section 2.3.3**), this area is now outside the Bat Survey Area following amendments to the project design. However, the results of GLTA field surveys from these areas have been included within this report to provide context regarding the ecological sensitivity of the wider area. To distinguish these results, **Table 3.2**, below, includes a column stating yes (Y) or no (N) as to what results lie within the Bat Survey Area.
- 3.2.1.2 Habitat within Murton Woods comprised a small mixed plantation woodland situated directly west of the village of Murton, Seaham. The northern extent comprised coniferous plantation that formed the majority of the woodland, with a small southern section supporting young mixed deciduous woodland. This latter area was more naturalised than other areas of the woodland, and supported a greater number of mature trees, as well as a small area of wet woodland at its western end.
- 3.2.1.3 Two trees, Tree 7 and Tree 8, are situated in the northernmost part of Murton Woods and are confirmed bat roosts with multiple brown long-eared bats present. This finding was confirmed with an endoscope inspection and is shown in **Figure 3.2**.

Bat Survey Area

- 3.2.1.4 The area including and surrounding the Jade Business Park and Hawthorn Pit Substation comprised a large area of grassland, scrub, and young woodland, situated north of the village of South Hetton. At the time of the survey, this area contained active construction sites in various stages of removing vegetation. However, it was noted from accessible land that there were no trees identified in this area as having suitability for roosting bats during the GLTA survey.
- 3.2.1.5 A thin strip of mixed deciduous woodland was identified adjacent to Hawthorn Dene Nature Reserve, north-east of the village of Hawthorn. This area supported multiple mature trees in addition to standing deadwood.
- 3.2.1.6 A small woodland was identified within Kinley Hill Farm, adjacent to Hawthorn Quarry on its northern side. The eastern half of this woodland supported a more natural habitat and contained multiple mature trees. The western half of the woodland was found to be much younger and less diverse, consisting almost entirely of younger deciduous trees as part of a plantation.
- 3.2.1.7 Further GLTA surveys were carried out in April 2026. Coop House Wood, situated to the northeast of South Hetton, was found to contain numerous trees with roosting suitability, in particular large number of ash trees assumed to have ash dieback, which contained features including knot holes, rot holes, tearouts and woodpecker holes. In the nearby vicinity, two further trees were identified at Great Co-op House Farm, and a further two at West Batter Law Farm.
- 3.2.1.8 A small ash-dominant woodland was identified directly east of the B1432 which contained two trees identified to have suitability for roosting bats. A line of mature trees was situated at the northern end of Hawthorn village, which were all identified as having features suitable for roosting bats. Finally, Haythorne's Plantation, situated within Hawthorn Dene Nature Reserve, contained multiple mature deciduous trees and standing deadwood, providing suitability for roosting bats.
- 3.2.1.9 A summary of PRFs found during the surveys is provided in **Table 3.2** below.
- 3.2.1.10 No buildings or structures were identified within the accessible areas of the Bat Survey Area as having suitability to support roosting bats in line with Good Practice Survey Guidelines.

Table 3.2: Detailed PRA/GLTA survey results from 2025 and 2026

Tree /Structure Number	Tree species/Structure type	PRF	Description	Within Bat Survey Area?
2025 Results				
Tree 1	<i>Quercus robur</i>	PRF-I	PRF present- wound on trunk at 12m observed from distance.	N
Tree 1	<i>Quercus robur</i>	PRF-I	PRF present- multiple wounds on branch and trunk at 10m, chambered.	N
Tree 2	<i>Fraxinus excelsior</i>	PRF-I	PRF present- Multi-stemmed tree, multiple PRFs present in knot holes on branches at 5m.	N
Tree 3	<i>Quercus robur</i>	PRF-I	PRF present- subsidence/helical/shearing crack feature on branches, inspected via endoscope.	N
Tree 4	<i>Alnus glutinosa</i>	PRF-I	PRF present.	N
Tree 5	<i>Quercus robur</i>	PRF-I	PRF present.	N
Tree 6	<i>Fagus sylvatica</i>	PRF-I	PRF present.	N
Tree 7	<i>Acer pseudoplatanus</i>	Confirmed	PRF present – multiple brown long-eared bats present in chambered feature (frost crack) on branch at 2m, inspected via endoscope.	N
Tree 8	<i>Acer pseudoplatanus</i>	Confirmed	PRF present – multiple brown long-eared bats present in chambered feature (frost crack) on branch at 2m, inspected via endoscope.	N
Tree 101	<i>Fraxinus excelsior</i>	PRF-I	PRF present – ivy on trunk, visual inspection.	Y
Tree 101	<i>Fraxinus excelsior</i>	PRF-I	PRF present – desiccation fissures on branches at 3m, chambered features, observed via binoculars.	Y
Tree 101	<i>Fraxinus excelsior</i>	PRF-I	PRF present – desiccation fissures on branches at 10m, tube-shaped features, observed via binoculars.	Y
Tree 102	<i>Acer pseudoplatanus</i>	PRF-M	PRF-M present. Tear-out feature on branches at 3m, several.	Y
Tree 103	<i>Fraxinus excelsior</i>	PRF-M	PRF-M present. Large splits in branches	Y
Tree 201	<i>Fraxinus excelsior</i>	PRF-I	PRF- I (two ash trees). Dense ivy, fissures in broken branches.	Y
Tree 202	<i>Fraxinus excelsior</i>	PRF-I	PRF-I present. Rot hole 8m up, dense ivy cover.	Y
Tree 203	<i>Fraxinus excelsior</i>	PRF-M	PRF-M, ash dieback, multiple PRFs including broken stem with gaps, woodpecker holes, spits in branch.	Y
Tree 204	<i>Fraxinus excelsior</i>	PRF-I	PRF-I. Dense ivy cover.	Y
Tree 205	<i>Castanea sativa</i>	PRF-I	PRF-I. Dense ivy cover, some splits visible from ground level.	Y
Tree 206	<i>Fraxinus excelsior</i>	None	No PRF observed.	Y
Tree 207	<i>Fraxinus excelsior</i>	PRF-M	PRF-M, 2x mature ash. Ivy cover, rot holes, split limbs and branches.	Y
Tree 208	<i>Fagus sylvatica</i>	PRF-M	PRF-M. Large tear on branch. Large split left from fallen branch. Smaller rot/branch holes higher up.	Y

Tree /Structure Number	Tree species/Structure type	PRF	Description	Within Bat Survey Area?
Tree 208	<i>Fraxinus excelsior</i>	PRF-M	PRF-M. 2x ash trees. Ivy cover. One large hole on western most tree. Several smaller holes where branches have snapped.	Y
Tree 209	<i>Acer pseudoplatanus</i>	PRF-M	PRF-M. Several rot holes, some split branches.	Y
Tree 210	<i>Fraxinus excelsior</i>	PRF-M	PRF-M. Large hole on eastern side of tree. Ivy cover. Some cracked bark and multiple splits on limbs.	Y
Tree 211	<i>Acer pseudoplatanus</i>	PRF-M	PRF-M. Numerous smaller cavities and cracks.	Y
Tree 212	<i>Acer pseudoplatanus</i>	PRF-M	PRF-M. One large hollow near base of tree, several smaller hollows/cavities higher up. Some small rot holes.	Y
Tree 213	<i>Acer pseudoplatanus</i>	PRF-I	PRF present. Dense ivy cover and some small splits and cracks.	Y
Tree 214	<i>Fraxinus excelsior</i>	PRF-M	Group of trees with PRF-M. Ash – large splits and cracks, peeling/lifted bark. Cavities at end of branches. Sycamore – large cavity in trunk, several smaller holes throughout.	Y
2026 Results				
Structure 1	Culvert	Moderate	Culvert underneath trainline. Head height and walkable with wellington boots. Some small gaps present in the brickwork, and there are possibly more further into the culvert. Gaps in brickwork at entrance, with old bird nest present.	Y
Bat Tree 01	<i>Fagus sylvatica</i>	PRF-M	High potential for roosting bats, one of many mature trees with PRFs in this woodland block.	Y
Bat Tree 02	<i>Fraxinus excelsior</i>	PRF-M	No description provided.	Y
Bat Tree 03	<i>Fagus sylvatica</i>	PRF-M	Trunk knot hole which is down draining, on the eastern aspect of the tree, 2m from ground.	Y
Bat Tree 04	<i>Fraxinus excelsior</i>	PRF-M	Horizontal limb saddle knot hole on the southern aspect of the tree, 2.5m high, approximately 15cm deep. Knot hole on horizontal saddle, on the southern aspect of the tree, 2.5 high.	Y
Bat Tree 06	<i>Fraxinus excelsior</i>	FAR	Knot hole on the northern aspect of the tree, 4m high.	Y
Bat Tree 07	<i>Fagus sylvatica</i>	FAR	Knot hole on the northern aspect of the tree, 5m high.	Y
Bat Tree 08	<i>Acer pseudoplatanus</i>	FAR	Knot hole present on the main stem, 7m high.	Y
Bat Tree 09	<i>Acer pseudoplatanus</i>	FAR	Lifting bark present on tree. Tree has low ivy cover. Tree not climbable, further survey by dusk emergence.	Y
Bat Tree 10	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with some rotting below a tear out, on the eastern aspect of tree, at 6m high. Another tear out is on the eastern aspect of the tree, at	Y

Tree /Structure Number	Tree species/Structure type	PRF	Description	Within Bat Survey Area?
			11m high. Potential ash dieback, so not possible to climb tree.	
Bat Tree 11	<i>Fraxinus excelsior</i>	FAR	Knot hole and tear out on northern aspect of tree, at 12m high.	Y
Bat Tree 12	<i>Fraxinus excelsior</i>	PRF-M	Ash with knot hole on the southern aspect of the tree, and mature ivy around base.	Y
Bat Tree 13	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with a feature on the western aspect of the tree at 10m high, and mature ivy at the base. Tree appears to be dying and is unsafe to climb.	N
Bat Tree 14	<i>Unknown (dead)</i>	PRF-M	Dead tree with multiple features - not safe to climb.	N
Bat Tree 15	<i>Fraxinus excelsior</i>	PRF-I	Dead ash with rotten woodpecker hole on the southern aspect of the tree. Tree is not safe to climb.	N
Bat Tree 16	<i>Fraxinus excelsior</i>	PRF-M	Dead ash tree with multiple features. Tree has a yellow X marked on the stem possibly indicating it has been marked for felling. Not safe to climb.	N
Bat Tree 17	<i>Fraxinus excelsior</i>	PRF-M	Dead ash tree with a woodpecker hole on southern aspect of tree. Not safe to climb.	N
Bat Tree 18	<i>Fraxinus excelsior</i>	PRF-M	Dead ash with knot hole on the eastern aspect of the tree at 2m high. Not safe to climb.	N
Bat Tree 19	<i>Acer pseudoplatanus</i>	FAR	Sycamore with knot hole on the western aspect of the tree at 4m high. Tree appears climbable.	N
Bat Tree 20	<i>Fraxinus excelsior</i>	FAR	Ash tree with one knothole on the western aspect of the tree and two knotholes on the southern side of the tree at ~11m high. Tree appears climbable.	N
Bat Tree 21	<i>Fraxinus excelsior</i>	PRF-M	Veteran ash tree with multiple features on all side of tree. Tree appears climbable.	Y
Bat Tree 22	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with knot holes on the eastern and western aspect of the tree at 2m high. Not safe to climb.	Y
Bat Tree 23	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with knot hole on the eastern and western aspect of the tree at 3m high. Tree appears climbable.	Y
Bat Tree 24	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with knot hole on the northern aspect of the tree at 3m high. Not safe to climb.	Y
Bat Tree 25	<i>Populus alba</i>	PRF-I	White poplar with two knot holes on the eastern aspect of the tree at ~5m. Tree appears climbable.	Y
Bat Tree 26	<i>Unknown (dead)</i>	PRF-I	Dead tree with a woodpecker hole on the northern aspect of the tree at 7m. Not safe to climb.	Y

Tree /Structure Number	Tree species/Structure type	PRF	Description	Within Bat Survey Area?
Bat Tree 27	<i>Betula pendula</i>	PRF-M	Silver birch with two woodpecker holes on the northern aspect of the tree. Visible fungi, not safe to climb.	Y
Bat Tree 28	<i>Unknown (dead)</i>	PRF-M	Dead tree with multiple features on all aspects. Not safe to climb.	Y
Bat Tree 29	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with multiple features, at least seven are present on the western aspect of the tree. Tree appears climbable.	Y
Bat Tree 30	<i>Quercus sp.</i>	FAR	Oak tree with two features on the western aspect - tree appears climbable.	Y
Bat Tree 31	<i>Acer pseudoplatanus</i>	PRF-M	Sycamore with a rot hole on the western aspect.	Y
Bat Tree 32	<i>Fraxinus excelsior</i>	FAR	Ash tree with a tear out on a main stem on the eastern aspect of the tree, which has an opening that extends upwards. Recommend endoscope inspection.	Y
Bat Tree 33	<i>Alnus glutinosa</i>	PRF-M	Alder with six knot holes and a woodpecker hole on the southern aspect. Tree appears climbable.	Y
Bat Tree 34	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with a large tearout. Tree appears climbable.	Y
Bat Tree 35	<i>Fraxinus excelsior</i>	PRF-M	Dead ash tree, with large knot hole on the western aspect of the tree at ~8m high. Not safe to climb.	Y
Bat Tree 36	<i>Fraxinus excelsior</i>	PRF-I	Ash tree appears to be dying from ash dieback with no fresh growth this year. One knot hole on the southern aspect of the tree at 9m high. Tree not safe to climb.	Y
Bat Tree 37	<i>Unknown (Dead)</i>	PRF-M	Dead tree with large knot hole. Knot hole offers barn owl potential. Not safe to climb.	Y
Bat Tree 38	<i>Unknown (Dead)</i>	PRF-M	Dead tree with large knot hole, lifting bark and ivy. Not safe to climb.	Y
Bat Tree 39	<i>Fraxinus excelsior</i>	PRF-M	Dead ash tree with a knot hole at 1m high that extends into and up the stem. Requires endoscope inspection. Not safe to climb.	Y
Bat Tree 40	<i>Fraxinus excelsior</i>	PRF-I	Dead ash with mature ivy as its main feature. Not safe to climb, can be endoscoped from the ground.	Y
Bat Tree 41	<i>Quercus sp.</i>	FAR	Oak tree with a knot hole on the eastern aspect at 7m high. Tree appears climbable.	Y
Bat Tree 42	<i>Quercus sp.</i>	PRF-M	Oak tree with a woodpecker hole on the northern aspect. Can be endoscoped from the ground.	Y
Bat Tree 43	<i>Quercus sp.</i>	PRF-I	Oak tree with a knot hole on the western aspect, can be endoscoped from the ground.	Y

Tree /Structure Number	Tree species/Structure type	PRF	Description	Within Bat Survey Area?
Bat Tree 44	<i>Quercus sp.</i>	PRF-M	Oak tree with large knot hole on the main stem of the eastern aspect of the tree at 7m high. Tree appears climbable.	Y
Bat Tree 45	<i>Fraxinus excelsior</i>	PRF-M	Ash with two knot holes on the western aspect of the main stem of the tree, at 10m high. Another knot hole is present on the western aspect of the tree at 5m high. Tree appears climbable.	Y
Bat Tree 46	<i>Fraxinus excelsior</i>	PRF-I	Dying ash tree with multiple knot holes, two on the northern aspect and two on the western aspect of the tree. Not safe to climb.	Y
Bat Tree 47	<i>Betula pendula</i>	PRF-M	Silver birch with a large knot hole on the western aspect of the tree, which has potential for nesting barn owl and contains nesting material. Tree appears climbable but nesting birds should be taken into account.	Y
Bat Tree 48	<i>Fraxinus excelsior</i>	FAR	Ash tree with a knot hole on the eastern aspect of the tree. Tree appears climbable.	Y
Bat Tree 49	<i>Fagus sylvatica</i>	PRF-M	Beech tree with a tearout on the eastern aspect of the tree. Tree appears climbable.	Y
Bat Tree 50	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with a knot hole on the northern aspect of the tree. Not safe to climb.	Y
Bat Tree 51	<i>Fraxinus excelsior</i>	PRF-M	Dying ash tree, with multiple knot holes, woodpecker holes, and peeling bark covering the main stem in multiple aspects, predominantly on the eastern aspect of the tree.	Y
Bat Tree 52	<i>Fraxinus excelsior</i>	PRF-I	Tree with two knot holes on the western aspect of the tree, and one knothole on the eastern aspect of the tree.	Y
Bat Tree 53	<i>Fraxinus excelsior</i>	PRF-M	Two-trunk stem mature ash, with five knot holes on the northern aspect of the tree.	Y
Bat Tree 54	<i>Fraxinus excelsior</i>	PRF-I	Two-trunk stem ash, decayed, with one knot hole on the northern aspect of the tree.	Y
Bat Tree 55	<i>Fraxinus excelsior</i>	PRF-M	Two-trunk stem tree, with large trunk cavity on the eastern aspect of the tree which is down-draining, situated 1.5m from ground. Further four potential knot holes.	Y
Bat Tree 56	<i>Fraxinus excelsior</i>	PRF-M	Ash tree with ash dieback, containing multiple woodpecker holes and peeling bark.	Y
Bat Tree 57	<i>Fraxinus excelsior</i>	PRF-I	Tree with knot hole on eastern aspect. Heavy honeysuckle cover	Y

3.3 Emergence Survey

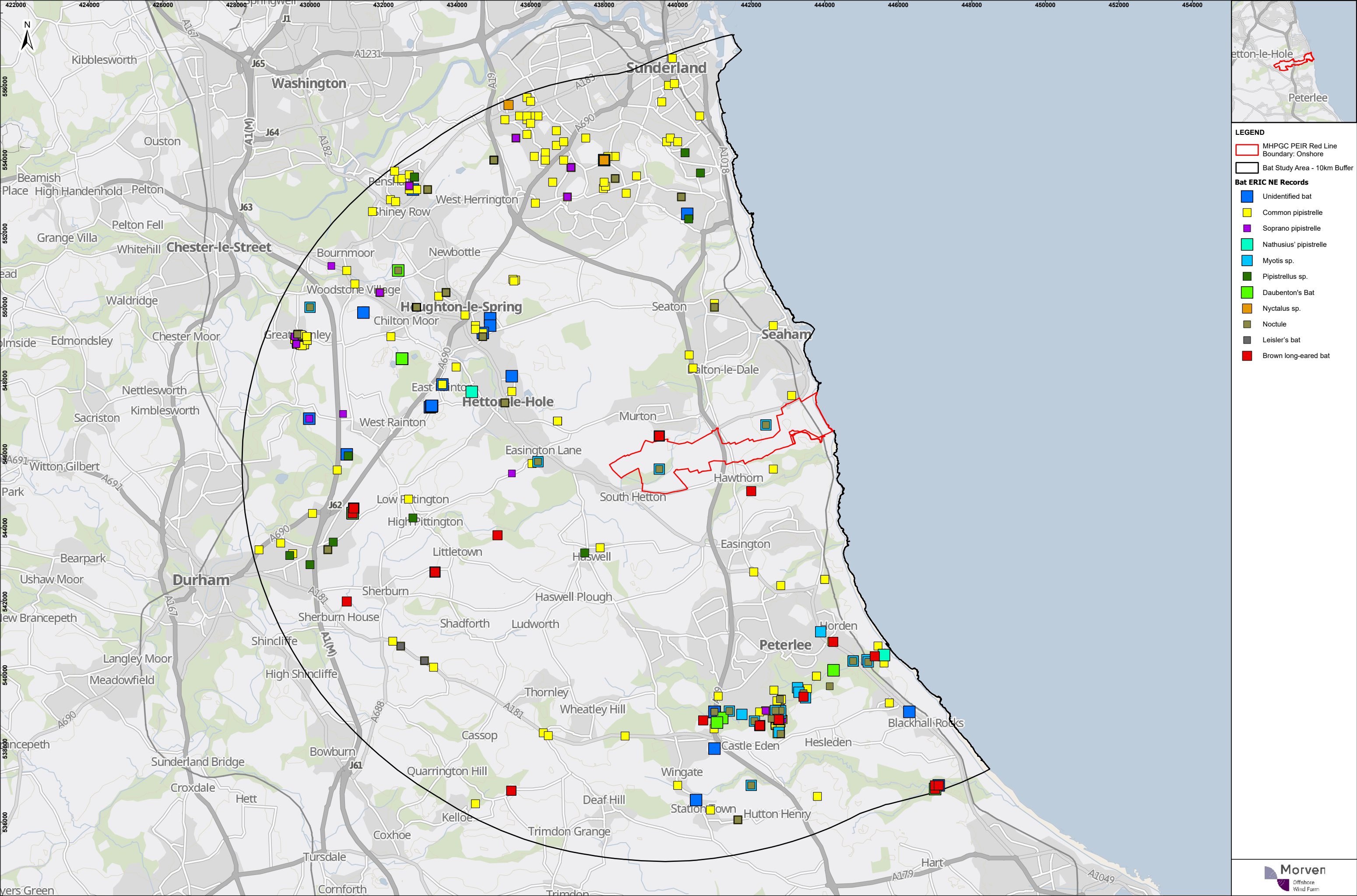
- 3.3.1.1 Emergence surveys have been completed for all trees where required, following the completed PRA/GLTA surveys, and undertaken in line with the methodology set out within **Section 2.4.2**. Full results from this survey will be included and assessed in the ES.

3.4 Aerial Inspection Survey

- 3.4.1.1 Aerial inspection surveys have been completed for all trees where required, following the completed PRA/GLTA surveys, and undertaken in line with the methodology set out within **Section 2.4.2**. Full results from this survey will be included and assessed in the ES.

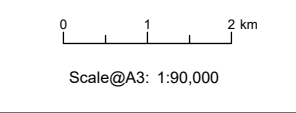
3.5 Bat Activity Survey

- 3.5.1.1 Bat activity surveys have been undertaken in line with the methodology set out within **Section 2.4.2**. Full results from this survey will be included and assessed in the ES.



Project Name:
MORVEN HAWTHORN PIT GRID
CONNECTION PROJECT

Drawing Title:
FIGURE 3.1 MHPGC PROJECT BAT ERIC NE RECORDS



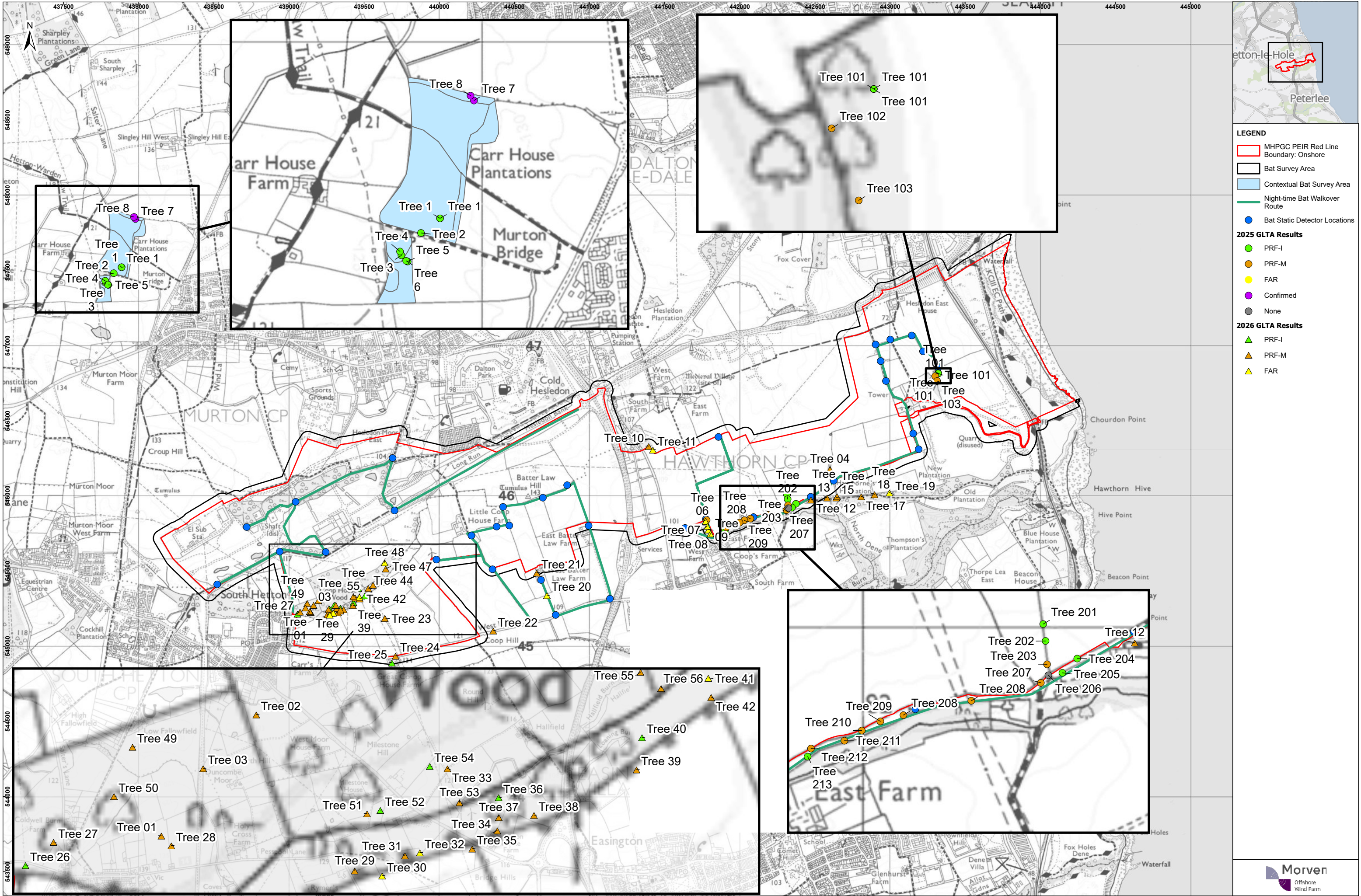
Geodetic Information:
Datum: OSGB 1936
Projection: British National Grid

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.
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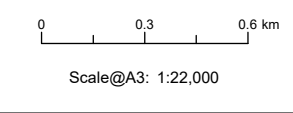
Drawing Number:
MHPGC-WSP-PEIR-069

VER	DATE	DETAILS	BY	CHECK
00	29/07/2025	Initial Issue	KS	LT
-	-	-	-	-



Project Name:
MORVEN HAWTHORN PIT GRID
CONNECTION PROJECT

Drawing Title:
FIGURE 3.2 MHPGC PROJECT PRA GLTA SURVEY RESULTS



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

Data Sources:
BP, Ordnance Survey

Service Layer Credits:
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Drawing Number: MHPGC-WSP-PEIR-070				
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00	29/07/2025	Initial Issue	KS	LT
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4 Summary

- 4.1.1.1 This report presents the results of the bat desk study and field surveys undertaken for the MHPGC Project to inform **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR**.
- 4.1.1.2 The desk study identified historical records of bat activity, comprising multiple species, within the Bat Study Area. These records show a continued presence of various bat species throughout the wooded habitats within the Bat Study Area over the last five years.
- 4.1.1.3 A programme of PRA and GLTA surveys was undertaken, including desk studies within the Bat Study Area and field surveys covering suitable wooded areas throughout the Bat Survey Area. The initial PRA/GLTA survey was conducted in September 2025, with further PRA/GLTA field surveys in April 2026. The field survey recorded features suitable to support individual or multiple roosting bats in numerous wooded locations throughout the Bat Survey Area, including in the vicinity of the village of Hawthorn, Haythorne's Plantation in Hawthorn Dene Nature Reserve, a small woodland within Kinley Hill Farm, Coop House Wood, Great Co-op House Farm, West Batter Law Farm, a small woodland east of the B1432, plus several other individual trees. The results of the GLTA surveys are shown in **Table 3.2** and displayed on **Figure 3.2**.
- 4.1.1.4 In relation to previous iterations of the Red Line Boundary, Morton Woods was surveyed and the data has been provided as contextual bat survey data in the wider area. Morton Woods is located approximately two kilometres (km) outside of the Bat Survey Area. In Morton Woods, two trees were identified, tree seven and eight, where brown long-eared bat *Plecotus auritus* roosts were confirmed as present. These were confirmed via endoscopic inspection of the trees.
- 4.1.1.5 The results of the NBW, dusk emergence, and aerial inspection surveys will be set out in the forthcoming ES. Emergence surveys and aerial inspections have been undertaken based on the results of the completed PRA/GLTA surveys and undertaken in line with the methodology set out within this report.
- 4.1.1.6 No incidental sightings were recorded during bat surveys to date.

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Bat desk study data obtained from ERIC NE (Full)

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Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
		2016: Easting 434900, Northing 549700; Easting 434900, Northing 549700; Easting 434900, Northing 549500; Easting 432800, Northing 553200; Easting 434700, Northing 549300; Easting 433600, Northing 547900; Easting 447100, Northing 537000; Easting 435487, Northing 548125.
<i>Myotis</i> sp.	37	2024: Easting 442750, Northing 538790; Easting 442804, Northing 538965; Easting 442750, Northing 538790; Easting 442750, Northing 538790; 2022: Easting 433400, Northing 542800; Easting 442400, Northing 546800; 2021: Easting 439500, Northing 545600; Easting 431190, Northing 544535; 2020: Easting 439500, Northing 546500; 2019: Easting 431190, Northing 544535; Easting 431190, Northing 544535; 2017: Easting 430000, Northing 550000; Easting 436200, Northing 545800; 2016: Easting 438000, Northing 554000; Easting 445147, Northing 540416; Easting 441069, Northing 538708; Easting 442753, Northing 538445; Easting 442658, Northing 539032; Easting 442000, Northing 537000; Easting 443260, Northing 539656; Easting 445184, Northing 540355; Easting 444238, Northing 540129; Easting 443297, Northing 539532; Easting 444238, Northing 540129; Easting 444772, Northing 540381; Easting 443889, Northing 541176; Easting 441069, Northing 538708; Easting 441211, Northing 538833; Easting 442088, Northing 538748; Easting 442232, Northing 538626; Easting 441406, Northing 539020; Easting 441746, Northing 538930; Easting 442801, Northing 539033; Easting 443477, Northing 539380; Easting 441211, Northing 538833; Easting 442658, Northing 539032; Easting 444772, Northing 540381.
Daubenton's bat	24	2023: Easting 432400, Northing 551000; Easting 431160, Northing 544400; Easting 431160, Northing 544400; Easting 432500, Northing 548600; Easting 432500, Northing 548600. 2022: Easting 432500, Northing 548600; Easting 432500, Northing 548600. 2021: Easting 432500, Northing 548600; Easting 432500, Northing 548600. 2020: Easting 432500, Northing 548600; Easting 432500, Northing 548600.

Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
		2019: Easting 432500, Northing 548600; Easting 432500, Northing 548600; Easting 432500, Northing 548600; Easting 432500, Northing 548600. 2018: Easting 447000, Northing 536900; Easting 432500, Northing 548600; Easting 432500, Northing 548600; Easting 432500, Northing 548600; Easting 432500, Northing 548600. 2016: Easting 441069, Northing 538708; Easting 444238, Northing 540129; Easting 441211, Northing 538833; Easting 441069, Northing 538708.
<i>Nyctalus</i> sp.	2	2016: Easting 316899, Northing 435400; Easting 316900, Northing 438000;
Noctule	73	2025: Easting 441000, Northing 539000;. 2024: Easting 441000, Northing 539000; Easting 442700, Northing 539000; Easting 441637, Northing 536063; Easting 442000, Northing 545000; Easting 441637, Northing 536063. 2023: Easting 432400, Northing 551000; Easting 441000, Northing 539000; Easting 431160, Northing 544400; Easting 431160, Northing 544400; Easting 441000, Northing 539000. 2022: Easting 429646, Northing 549262; Easting 429658, Northing 549263; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 429646, Northing 549262; Easting 429658, Northing 549263; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 433400, Northing 542800; Easting 442400, Northing 546800; Easting 430484, Northing 543409. 2021: Easting 433200, Northing 553200; Easting 439500, Northing 545600; Easting 431190, Northing 544535; Easting 442800, Northing 538400. 2020: Easting 433700, Northing 550400; Easting 433700, Northing 550400; Easting 433700, Northing 550400; Easting 435475, Northing 536855; Easting 439500, Northing 546500. 2019: Easting 431190, Northing 544535; Easting 431190, Northing 544535; Easting 431190, Northing 544535; Easting 431190, Northing 544535; Easting 431190, Northing 544535; Easting 441000, Northing 539000.

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Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
		2019: Easting 431190, Northing 544535; Easting 431190, Northing 544535; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; 2018: Easting 435000, Northing 554000; Easting 435000, Northing 554000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 435000, Northing 554000; Easting 435000, Northing 554000 2017: Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; 2016: Easting 440300, Northing 552400; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 431000, Northing 542000; Easting 447000, Northing 537000; Easting 435000, Northing 554000; Easting 435000, Northing 554000; Easting 440620, Northing 553650; Easting 429448, Northing 543250; Easting 430632, Northing 543614.
Common pipistrelle	373	2024: Easting 436130, Northing 552830; Easting 434216, Northing 549788; Easting 437500, Northing 554600; Easting 439853, Northing 556769; Easting 442000, Northing 545000; Easting 442696, Northing 538867; Easting 442696, Northing 538876; Easting 442698, Northing 538871; Easting 442698, Northing 538875; Easting 442698, Northing 538876; Easting 442699, Northing 538878; Easting 442700, Northing 538872; Easting 442700, Northing 538874; Easting 442701, Northing 538874; Easting 442725, Northing 538491; Easting 442729, Northing 538931; Easting 442742, Northing 538473; Easting 442743, Northing 539133; Easting 442747, Northing 538476; Easting 442748, Northing 538488; Easting 442758, Northing 539112; Easting 442793, Northing 539071; Easting 442793, Northing 539074; Easting 442793, Northing 539075; Easting 442793, Northing 539076; Easting 442794, Northing 539076; Easting 442794, Northing 539262; Easting 442795, Northing 538971; Easting 442797, Northing 538684; Easting 442801, Northing 538950; Easting 442802, Northing 538965; Easting 442803, Northing 538972; Easting 442804, Northing 538966; Easting 442804, Northing 538970; Easting 442804, Northing 538971; Easting 442804, Northing 538972; Easting 442804, Northing 538974; Easting 442750, Northing 538790; Easting 442653, Northing 538692; Easting 442653, Northing 538722; Easting 442654, Northing 538770; Easting 442655, Northing 538765; Easting 442655, Northing 538769; Easting 442655, Northing 538770; Easting 442655, Northing 538787; Easting 442655, Northing 538791; Easting 442764, Northing 538508; Easting 442772, Northing 539098; Easting 442788, Northing 538556; Easting 442788, Northing 538611; Easting 442788, Northing 539050; Easting

Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
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Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
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Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
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Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
		440200, Northing 554200; Easting 440200, Northing 554200; Easting 432900, Northing 550000; Easting 432900, Northing 550000; Easting 430484, Northing 543409; 2021: Easting 433200, Northing 553200; Easting 431190, Northing 544535; Easting 435490, Northing 545481; Easting 442800, Northing 538400. 2020: Easting 435475, Northing 536855; Easting 435475, Northing 536855; Easting 430900, Northing 547100. 2019: Easting 431190, Northing 544535; Easting 431190, Northing 544535; Easting 431190, Northing 544535. 2017: Easting 438300, Northing 553500; Easting 440100, Northing 553000; Easting 430000, Northing 550000; Easting 430580, Northing 551122; Easting 437000, Northing 553000; Easting 436200, Northing 545800. 2016: Easting 432700, Northing 553300; Easting 438000, Northing 554000; Easting 435600, Northing 554600; Easting 437100, Northing 553800; Easting 437100, Northing 553800; Easting 431900, Northing 550400; Easting 434700, Northing 549200; Easting 430632, Northing 543614; Easting 441069, Northing 538708; Easting 443260, Northing 539656; Easting 444238, Northing 540129; Easting 441069, Northing 538708; Easting 441069, Northing 538708; Easting 441211, Northing 538833; Easting 441211, Northing 538833; Easting 442389, Northing 539029; Easting 441746, Northing 538930; Easting 443422, Northing 539503; Easting 441211, Northing 538833; Easting 442658, Northing 539032.
Nathusius' pipistrelle	5	2023: Easting 431160, Northing 544400; Easting 431160, Northing 544400. 2016: Easting 434400, Northing 547700; Easting 438000, Northing 554000; Easting 445611, Northing 540544.
Brown long-eared bat	25	2025: Easting 435100, Northing 543800. 2024: Easting 442750, Northing 538790; Easting 442000, Northing 545000. 2023: Easting 431160, Northing 544400; Easting 431160, Northing 544400; 2022: Easting 433400, Northing 542800. 2021: Easting 431190, Northing 544535. 2020: Easting 435475, Northing 536855; Easting 435475, Northing 536855; Easting 435475, Northing 536855; Easting 439500, Northing 546500. 2019: Easting 431190, Northing 544535.

Species	Occurrence (no. of records)	Records Per Year/OS Grid Reference
		2018: Easting 447000, Northing 536900. 2017: Easting 431000, Northing 542000. 2016: Easting 447100, Northing 537000; Easting 431190, Northing 544535; Easting 447000, Northing 536900; Easting 431000, Northing 542000; Easting 447100, Northing 537000; Easting 447000, Northing 537000; Easting 447000, Northing 536900; Easting 447000, Northing 537000; Easting 444231, Northing 540902; Easting 443423, Northing 539410; Easting 440693, Northing 538766; Easting 442232, Northing 538626; Easting 445361, Northing 540511; Easting 447100, Northing 537000.