harrislamb
PROPERTY CONSULTANCY

clearthinking
COMMERCIAL PROPERTY ADVICE

Preliminary Ecological Appraisal

Land North of Station Road, Hook Norton

On Behalf Of:
Greystoke Land

Prepared By:
Josh Randhawa BSc
Harris Lamb | Grosvenor House | 75-76 Francis Road | Edgbaston | Birmingham B16 8SP
Telephone: 0121 410 2064 Facsimile: 0121 455 6595 E-mail: josh.randhawa@harrislamb.com

Job Ref: PE0160 Date: January 2021

Preliminary Ecological Appraisal

Land North of Station Road, Hook Norton

_____

Main Contributors
Josh Randhawa BSc

_____

Issued By

Signature 

Print Name: Josh Randhawa BSc

Date: 08/01/2021

_____

Approved By

Signature…… 

Print Name: Dr Holly Smith

Date: 11/01/2021

CONTENTS

EXECUTIVE SUMMARY

Harris Lamb Property Consultancy (HLPC) was commissioned by Greystoke Land to undertake a Preliminary Ecological Appraisal (PEA) of Land North of Station Road, Hook Norton. The site is located adjacent to the east of the Hook Norton settlement and sits within a predominantly arable landscape

HLPC carried out an Extended Phase 1 Habitat Survey of the site in April 2020 undertaken by a suitably experienced ecologist. Desk-based consultation was undertaken with Thames Valley Environmental Records Centre for records of protected species and habitats within 2km of the site. No statutorily designated sites, non-statutorily designated sites or ancient woodlands are anticipated to be negatively affected by the proposed scheme.

The majority of the site is comprised of arable land and has low ecological value. Hedgerows, which are anticipated to be retained, form the northern, western and southern site boundaries and are of site level value to nature conservation.

A mammal hole was identified on the northern site boundary which did not show signs of use by badger at the time of survey. Badgers are highly mobile and can establish new setts at any time. A badger survey is recommended prior to reserved matters and construction and secured via planning condition. The hedgerows are being retained with the exception of a gap for access. Hedgerow removal should be undertaken following a dormouse method statement and outside breeding bird season which runs March to August inclusive (or nesting bird checks should be carried out immediately prior to clearance). As a precautionary measure it is advised that construction works are undertaken following a reptile and amphibian method statement included within this report.

Detailed landscape design at the reserved matters stage should include the planting of native species to enhance the value of the site. Mitigation above and enhancement measures could be secured through planning condition and therefore the proposed development is considered to accords with biodiversity planning policy.

1.0 INTRODUCTION

1.1 Terms of reference

1.1.1 Harris Lamb Property Consultancy (HLPC) was commissioned by Greystoke Land to undertake a Preliminary Ecological Appraisal (PEA) of Land North of Station Road, Hook Norton (national grid reference SP 36236 33703), hereafter termed the 'site' (see Figure 1 below).

Figure 1: Site location. Not to scale.

1.2 Site location

1.2.1 The site is c. 2.2 ha in extent and is located to the north of Station Road. The site is currently in arable production and at the time of the survey an arable crop had been sown. The site is located adjacent to the north-east of the Hook Norton settlement and sits within a predominantly arable landscape. The site is bounded by defunct hedgerows to the north, south and west.

1.3 Proposed development

1.3.1 It is understood that outline planning permission is being sought for the construction of 43 dwellings and associated infrastructure.

1.4 Purpose of this report

1.4.1 The purpose of this report is to:

- Identify key ecological constraints associated with the proposed development and input into the scheme design to minimise ecological impacts where possible.
- Set out mitigation measures required to ensure compliance with nature conservation legislation and address potentially significant ecological effects.
- Identify how mitigation measures could be secured.
- Provide an assessment of significance of residual effects.
- Identify appropriate enhancement measures.
- Identify appropriate post-construction monitoring if relevant.

2.0 PLANNING CONTEXT

2.1 National Planning Policy Framework (NPPF)

2.1.1 National Planning Policy Framework (NPPF)[1] is the top tier of planning policy. The Framework provides guidance to local authorities and other agencies on planning policy and the operation of the planning system. Section 15 relates to 'Conserving and enhancing the natural environment'.

2.1.2 Relevant policies in relation to planning application include Paragraph 170:

2.1.3 "Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

2.1.4 174. To protect and enhance biodiversity and geodiversity, plans should:

[1] National Planning Policy Framework (2019) February 2019 Ministry of Housing Communities and Local Government

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity56; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

2.1.5 175. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons58 and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."

2.2 Relevant local planning policy

2.2.1 Identified relevant local planning policy is summarised in Table 1 below.

Table 1: Summary of relevant biodiversity local planning policy

Policy	Description
Adopted Cherwell Local Plan 2011-2031	
Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment	Protection and enhancement of biodiversity and the natural environment will be achieved by the following: In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources. The protection of trees will be encouraged, with an aim to increase the number of trees in the District. The reuse of soils will be sought. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or as a last resort, compensated for, then development will not be permitted. Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated. Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity. Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity. Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity. Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value. Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse

Policy	Description
	impact on biodiversity by generating an increase in air pollution. Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably. A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.
Policy ESD 17: Green Infrastructure	The District's green infrastructure network will be maintained and enhance through the following measures: Pursuing opportunities for joint working to maintain and improve the green infrastructure network, whilst protecting sites of importance for nature conservation. Protecting and enhancing existing sites and features forming part of the green infrastructure network and improving sustainable connectivity between sites in accordance with policies on supporting a modal shift in transport (Policy SLE 4: Improved Transport and Connections), open space, sport and recreation (Policy BSC 10: Open Space, Outdoor Sport and Recreation Provision), adapting to climate change (Policy ESD 1: Mitigating and Adapting to Climate Change), SuDS (Policy ESD 7: Sustainable Drainage Systems (SuDS)), biodiversity and the natural environment (Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment), Conservation Target Areas (Policy ESD 11: Conservation Target Areas), heritage assets (Policy ESD 15) and the Oxford Canal (Policy ESD 16). Ensuring that green infrastructure network considerations are integral to the planning of new development. Proposals should maximise the opportunity to maintain and extend green infrastructure links to form a multi-functional network of open space, providing opportunities for walking and cycling, and connecting the towns to the urban fringe and the wider countryside beyond. All strategic development sites (Section C: 'Policies for Cherwell's Places' will be required to incorporate green infrastructure provision and proposals should include details for future management and maintenance.

2.3 Natural Environment and Rural Communities Act

2.3.1 In Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act, which came into force on 1st Oct 2006 requires the Secretary of State to publish "*a list of habitats and species which are of principal importance for the conservation of biodiversity in England*". This list guides decision-makers such as councils and statutory undertakers, as to their duty under Section 40 of the NERC Act, to "*have regard to the conservation of biodiversity in England*" in day-to-day decisions.

2.3.2 There are currently 56 habitats of principal importance and 943 species of principal importance included on the S41 list. The habitats recorded were considered against the list of species likely in the site's geographical area and supporting habitats.

3.0 METHODOLOGY

3.1 Study area

3.1.1 The study area is the application boundary shown on Figure 1. The study area was extended beyond the site where appropriate to undertake species-specific appraisals as detailed below. The study area and assessments comply with industry guidance from the CIEEM Guidelines for Preliminary Ecological Appraisal[2].

3.2 Desk study

3.2.1 The desktop study was undertaken in April 2020 and included:

- Thames Valley Environmental Records Centre (TVERC),
- Multi Agency Geographic Information for the Countryside (MAGIC) website[3],
- Ordnance Survey (OS)[4], and
- Aerial imagery[6].

3.2.2 The geographical extent of the search area for biodiversity information was related to the significance of sites and species and potential zones of influence which might arise from development within the site. For this site the following search areas were considered to be appropriate:

- 10km around the site boundary for sites of International Importance (e.g. Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site));
- 2km around the site boundary for sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSI)), protected or otherwise notable species and non-statutory designated sites of County Importance (e.g. Local Wildlife Sites (LWS);
- 1km for ancient woodland, and
- 2km for biological records (post-2000).

---

[2] CIEEM (2018) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

[3] www.magic.gov.uk accessed April 2020

[4] www.bing.co.uk accessed April 2020

3.2.3 No pre-application consultation relating to ecology was undertaken at the time of writing this report.

3.3 Field survey

Flora

3.3.1 In April 2020, HLPC carried out an Extended Phase 1 Habitat Survey of the site. The survey was carried out by an experienced and suitably qualified ecologist. The survey was undertaken in accordance with 'Extended Phase 1' methodology[5].

3.3.2 Specific habitat features were mapped using Target Notes (TN) to record ecological features of particular note.

Fauna

3.3.3 The fauna included within this assessment is based on the habitats present, data from the desk-based searches, and the following legislation[6]:

- Wildlife and Countryside Act 1981 (as amended);
- The Protection of Badgers Act 1992;
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
- The NERC Act 2006 – S41 Species of Principal Importance (SPI) for the conservation of biodiversity.

Amphibians

3.3.4 Waterbodies on site or within 250m of the site boundary, not separated by major barriers to amphibian dispersal, were identified using online Ordnance Survey maps and aerial imagery[7]. These were assessed for their suitability to support great-crested newts *Triturus cristatus* using a Habitat Suitability Index (HSI). The HSI is a numerical index, between 0 and 1. Values close to 0 indicate unsuitable habitat, 1 represents optimal habitat (Oldham *et al*., 2000) [8].

[5] Joint Nature Conservation Committee (2010) Handbook for Phase 1 Habitat Survey. A Technique for Environmental Audit.

[6] See www.legislation.gov.uk

[7] www.bing.com/maps accessed April 2020

[8] Oldham *et al*., 2000. Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10, 143-155

Reptiles

3.3.5 An assessment of the suitability of the habitats present to support common reptile species was undertaken. In accordance with current guidance, this assessment involved a review of habitats and habitat structure for suitable shelter for reptiles such as areas of scrub and woodpiles, grassland with well-developed and varied structure, areas suitable for basking, large tussocks etc.

Birds

3.3.6 Bird species identified at the time of survey were noted and nesting birds recorded as seen. An assessment of habitats was undertaken to determine the likely value to breeding and foraging birds.

Hazel Dormouse

3.3.7 An assessment of the habitat on and adjacent to the site for suitability to support hazel dormice *Muscardinus avellanarius* was undertaken.

Bats

3.3.8 The tree assessments were undertaken from ground level, with the aid of a torch and binoculars, where required. During the survey Potential Roosting Features (PRF) for bats following current best practice[9],[10],[11] were recorded.

3.3.9 The potential for the site and immediate surrounds to support foraging and commuting bats was also assessed, with particular regard given to the presence of continuous treelines, watercourses and hedgerows providing good connectivity in the landscape, and the presence of varied habitat such as scrub, woodland, grassland and open water in the vicinity.

[redacted]

[9] Bat Conservation Trust (BCT) 2016. Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition
[10] Mitchell-Jones, A.J, & McLeish, A.P. Ed. 2004. Bat Workers' Manual 3rd Edition
[11] BCT (2015) Surveying for Bats in Trees and Woodland – Guide

Legally controlled species

3.3.12 Evidence of species listed on Schedule 9 of the Wildlife and Countryside Act (1981) as amended were recorded as seen.

Scoped out

3.3.13 No watercourses were recorded within 30m of the site and therefore otters *Lutra lutra* or water vole *Arvicola amphibious* and white-clawed crayfish *Austropotamobius pallipes* were not considered likely to be a receptor with respect to the proposed development.

3.4 Assessment methodology

3.4.1 The importance of ecological features and impact assessment methodology is based on CIEEM guidelines for ecological impact assessment in the UK and Ireland[12]. Significant effects are defined as "*an effect that either supports or undermines biodiversity conservation objectives for important ecological features*" (CIEEM, 2016). A significant effect does not necessarily equate to an affect so severe that consent for a project should be refused planning permission if they can demonstrate following the mitigation hierarchy (avoid, mitigate, compensate) has been applied as part of the decision-making process. Significant effects are qualified with a scale: international and European, national, regional, metropolitan/county, local or within the zone of influence (defined here as site level).

3.4.2 This report assumes that construction will commence within 1-2 years of the date of the assessment in accordance with the British Standard 42020:2013[13] unless otherwise stated.

Determining importance

3.4.3 Determining the importance of identified ecological features is based on CIEEM guidance. Various characteristics contribute to the importance of ecological features including:

- naturalness;

[12] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester

[13] BSI (2013) Biodiversity – Code of Practice for Planning and Development.

- animal or plant species, sub-species or varieties that are rare or uncommon, either internationally, nationally or more locally, including those that may be seasonally transient;
- ecosystems and their component parts, which provide the habitats required by important species, populations and/or assemblages;
- endemic species or locally distinct sub-populations of a species;
- habitat diversity;
- habitat connectivity and/or synergistic associations;
- habitats and species in decline;
- rich assemblages of plants and animals;
- large populations of species or concentrations of species considered uncommon or threatened in a wider context;
- plant communities (and their associated animals) that are considered to be typical of valued natural/seminatural vegetation types, including examples of naturally species-poor communities;
- species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.

3.4.4 Geographic context is also considered within a defined geographical context.

- International and European.
- National.
- Regional.
- Metropolitan, County, vice-county or other local authority-wide area.
- Local (including district or borough context) or within a zone of influence (here termed the site).

3.5 Assessment limitations

3.5.1 Ecological surveys are limited by factors that affect the presence of plants and animals, such as the time of year, weather, migration patterns and behaviour. The initial survey was undertaken in April and is a not considered a limitation of this assessment.

3.5.2 Any absence of desk study records cannot be relied upon to infer absence of a species/habitat as the absence of records may be a result of under-recording within the given search area.

3.5.3 Phase 1 Habitat survey aimed to characterise the habitat on site and is not intended to give a complete list of plant species present.

4.0 RESULTS

4.1 Ecological designations

Internationally designated sites for nature conservation

4.1.1 No internationally designated sites for nature conservation were identified within 10km of the site.

Nationally designated sites for nature conservation

4.1.2 Hook Norton Cutting & Banks Site of Special Scientific Interest (SSSI) is located c. 1.3km to the south of the site. This site contains a variety of sheltered, semi-natural and man-made habitats associated with the limestone outcrops all within a comparatively small area. It is of particular interest for its calcareous grassland flora, and bee and butterfly fauna, which include rare and uncommon species.

4.1.3 Hook Norton Cutting & Banks SSSI is considered to be of national importance to nature conservation.

Non-statutorily designated sites for nature conservation

4.1.4 Three non-statutorily designated sites for nature conservation were identified within 2km of the site, as summarised in Table 2 below

Table 2: Non-statutorily designated sites for nature conservation recorded within 2km of the site.

Name of Site	Status	Approx. Distance and Direction from the Site	Brief Description/Reason for Designation
Cradle and Grounds Farm Banks	Local Wildlife Site	900m south-east	Two valleys formed by the upper reaches of the Swere and a southern tributary. There is a mosaic of habitats with steep, flower-rich banks, swamp (at the base of the slope), wet grassland, ponds, wooded areas and scrub.
Hook Norton Railway Cutting (North)	Proposed District Wildlife Site	1.1km south	A section of railway cutting of the former Great Western Railway line. It is woodland that is largely left to develop naturally into high forest.
Hook Norton	BBOWT Reserve	1.5km south	Two sections of railway cuttings of the former Great Western Railway line with a rich assemblage of unimproved calcareous grassland flora, along with associated invertebrates.

Ancient woodland

4.1.5 No ancient woodland was identified within 1km of the site.

4.2 Habitats

4.2.1 All habitats recorded within the site are described below and are shown on Figure 2. Target notes are provided in Appendix 1. Site photographs are provided in Appendix 2.

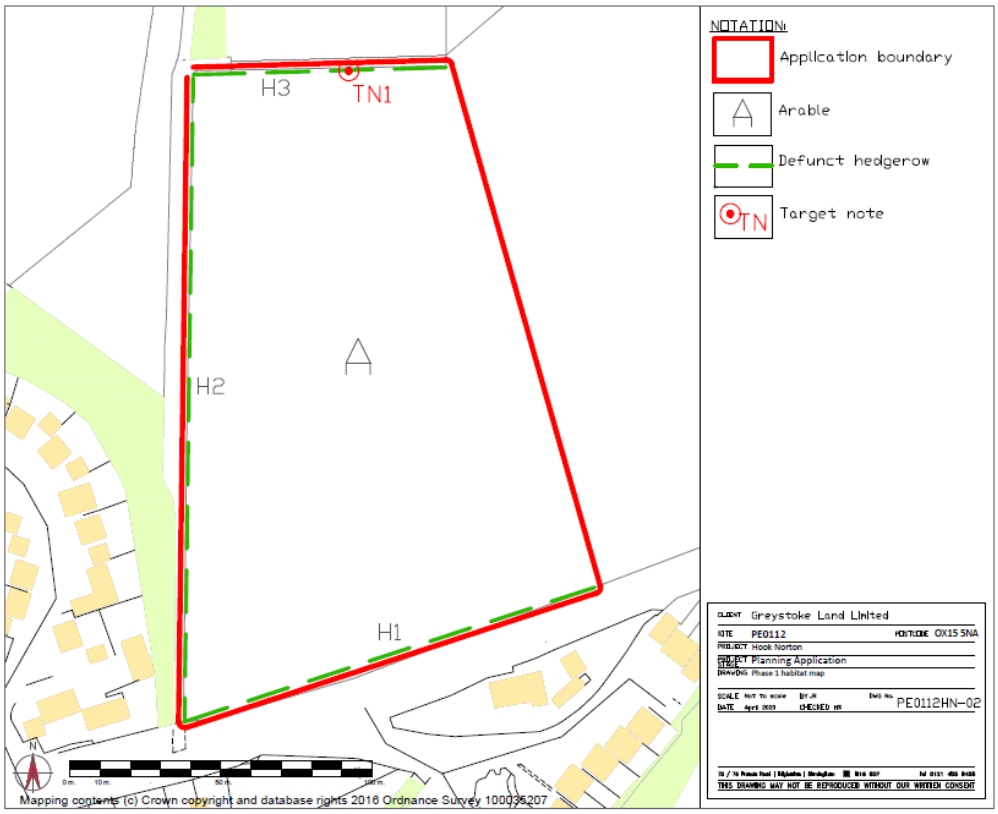


Figure 2: Phase 1 Habitat map. Not to scale.

Arable

4.2.2 The site is dominated by arable land which at the time of survey had been recently sowed with spring wheat.

4.2.3 The arable land did not contain significant field margins and due to the limited native species diversity arable habitat is considered to be of site importance to nature conservation.

Hedgerows

4.2.4 Hedgerows were present along the northern, western and southern site boundaries. The hedgerows were upon banks made of earth and brick c.2-3m high and are described below.

- Hedgerow 1 (H1) – A defunct hedgerow which had been unmanaged and left to grow tall. Species observed included hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, dog rose *Rosa canina* and elder *Sambucus nigra*. Ground flora species recorded included common stinging nettle *Urtica dioica*, bramble *Rubus fruticosus* agg., white dead nettle *Lamium album*, cleavers *Galium aparine* and ivy *Hedera helix*.
- Hedgerow 2 (H2) – A defunct hedgerow which had been unmanaged and left to grow tall. Species observed included hawthorn, blackthorn, elm *Ulmus* sp., dog rose, elder and sycamore. Ground flora was dominated by common stinging nettle, other species recorded occasionally included bramble, cleavers, ivy, red campion *Silene dioica* and lords and ladies *Arum maculatum*.
- Hedgerow 3 (H3) – A defunct hedgerow which had been unmanaged and left to grow tall. Species observed included hawthorn, sycamore, field maple *Acer campestre*, elm and elder. Ground flora species recorded included common stinging nettle, cleavers, ivy, burdock *Arctium lappa* and garlic mustard *Alliaria petiolate*.

4.2.5 As the hedgerows were comprised of 80% of one or more native species, they qualify as habitats of principal importance under Section 41 of the NERC Act (2006).

4.2.6 The initial walkover counted up to six species. Hedgerows were mature but defunct in places. They are not considered likely to be an Important Hedgerow in the Wildlife and Landscape criteria of the Hedgerow Regulations 1997.

4.2.7 The hedgerows were considered to be of site level importance to nature conservation due to their contribution to habitat connectivity.

4.3 Species

Amphibians

4.3.1 No records of great crested newts within 2km of the site were provided by TVERC.

4.3.2 The boundary hedgerows around the site have the potential to provide foraging and sheltering opportunities for amphibians and the site could support populations of common amphibians in their terrestrial phase.

4.3.3 No waterbodies were found on site; however, two ponds were identified within 250m of the site via ordinance survey data and aerial mapping. One of these ponds, located c. 170m to the south of the site, was separated by a road and houses which is considered a barrier to newt dispersal and was scoped out of further assessment.

4.3.4 An eDNA sample was taken from the pond c.240m to the north of the site (P1) which tested negative for great crested newt DNA (Appendix 3). Based on the lack of suitable newt breeding ponds within 250m of the site great crested newts are considered unlikely to be a potential receptor with respect to future development of the site.

Reptiles

4.3.5 Five records of reptiles were identified by TVERC. The nearest record was located c. 500m to the east of the site.

4.3.6 The habitats surveyed are considered to be sub-optimal for supporting populations of reptiles due to the dominance of arable habitat and lack of complex habitat structure typically required by reptiles. However, the hedgerows connect the site to the wider landscape and could provide sheltering opportunities for the species. It cannot be entirely ruled out that common reptiles are a potential receptor with respect to the proposed development.

Birds

4.3.7 Multiple records of bird species within 2km of the site were identified by TVERC, including species listed on the Birds of Conservation Concern Red List such as Yellowhammer *Emberiza citrinella,* Song Thrush *Turdus philomelos* and Skylark *Alauda arvensis*.

4.3.8 The boundary hedgerows provide suitable foraging and nesting habitat for a range of bird species. Foraging and nesting birds could be a potential receptor to the proposed development of the site. Nesting bird habitat on site is considered important at site level only due to the abundance of trees in the local area.

Hazel dormouse

4.3.9 No records of hazel dormouse were identified by TVERC within 2km of the site.

4.3.10 The majority of habitats surveyed on site were considered sub-optimal to support hazel dormice due to the dominance of arable land. However, the site falls within the known distribution of the species and the hedgerows along the site boundaries connect the site to the extensive woodland in the wider landscape and could be utilised by hazel dormice.

4.3.11 The hedgerows are occasionally gappy and lacked an abundance of species typically required by this species (hazel etc). Whilst the hedgerows are considered suboptimal for supporting populations of this species it cannot be entirely ruled out and a precautionary approach is recommended.

Bats

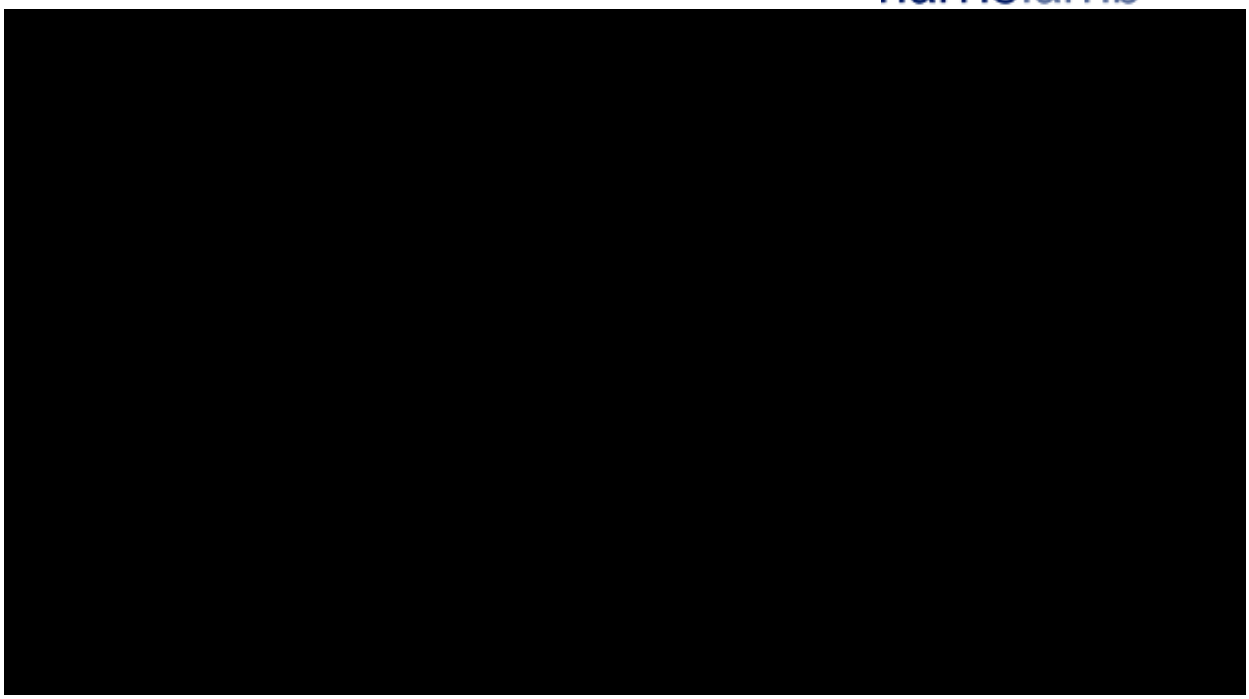
4.3.12 Bat species reported within 2km of the site by TVERC were; common pipistrelle *Pipistrellus pipistrellus,* noctule *Nyctalus noctule*, brown long-eared bat *Plecotus auratus*, Daubenton's bat *Myotis daubentoniid*, Natterer's bat *Myotis nattereri*, lesser horseshoe *Rhinolophus hipposideros* and barbastelle *Barbastella barbastellus*.

Roosting

4.3.13 The trees surveyed within the hedgerows along the site boundaries were not considered to offer more than negligible bat roost potential. However, tree observations were made from ground level only, any potential roosting features along the upper extents of the trees could not be closely observed.

Foraging

4.3.14 The hedgerows along the western, northern and southern site boundaries provide habitat for foraging bats and as navigational features for commuting bats. As such foraging and commuting bats could be a potential receptor with respect to the proposed development.



Invasive species

4.3.18 No evidence of invasive species on Schedule 9 of the Wildlife and Countryside Act (1981) as amended were recorded at the time of survey.

Other notable species

4.3.19 Hedgehogs have been recorded within 2km of the site. The hedgerows along the site boundaries are suitable for supporting this species and hedgehogs could be a potential receptor with respect to the proposed development.

5.0 ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

5.1 The proposed development

5.1.1 It is understood that the client is seeking outline planning permission for the construction of 43 dwellings and associated infrastructure.

5.1.2 The following assessment is based on the illustrative layout of the proposed development by MHP (drawing number: 20147.101).

5.2 Statutory and non-statutory designated sites for nature conservation

5.2.1 Given the habitats present on site and the separation and distance of the site from Hook Norton Cutting and Banks SSSI and the non-statutorily designated sites within 2km, no mechanism has been identified associated with the proposed development which is likely to affect identified non-statutorily designated sites, directly or indirectly.

5.2.2 No further mitigation, enhancement or monitoring measures are considered to be required.

5.3 Habitats

Potential impacts

5.3.1 The proposed development will require land-take of arable land and a short section of hedgerow will be removed for road access. It is anticipated that the boundary hedgerows will be retained and enhanced, and a new hedgerow created along the eastern site boundary. The development is also anticipated to have open, naturally landscaped areas with additional planting.

Mitigation measures

5.3.2 Retained trees and hedgerows should be protected through the construction phase following advice set out within the British Standard Tree Survey.

5.3.3 The detailed landscape design at the reserved matters should include planting native species of local provenance where practicable.

Enhancement

5.3.4 No further enhancement measures are considered to be required.

Monitoring

5.3.5 The success of the detailed landscape scheme could be monitored through standard landscape management practices.

Significance

5.3.6 Assuming this can be secured through a planning condition, it is anticipated that the proposed development would result in a net nature conservation enhancement at site level.

5.4 Species

5.4.1 Common reptiles and amphibians are protected only by Section 9(5) of the Wildlife and Countryside Act 1981 (as amended). All reptile species and great crested newt and common toad *Bufo bufo* Priority species under the NERC Act 2006[14].

Reptiles and Amphibians

Potential impacts

5.4.2 The site is sub-optimal to support a population of common reptiles and amphibians; however, the boundary hedgerows provide foraging and sheltering opportunities for the species. Although it is assumed that the hedgerows will be retained and safeguarded during construction, there is potential for common reptiles and amphibians to be present during construction.

Mitigation measures

5.4.3 Taking a precautionary approach, construction should be undertaken following a Reptile and Amphibian Method Statement (RAMS) (See Appendix 4).

Enhancement

5.4.4 Detailed proposed landscape plans should consider a mix of grass and scrub for the benefit of reptiles and amphibians.

Monitoring

5.4.5 No additional monitoring is considered to be required at this stage.

[14] See www.legislation.gov.uk for full details throughout this report

Significance

5.4.6 Assuming the above measures are undertaken, it is anticipated that the proposed development would not result in impact to common reptiles and amphibians, should they be present at the time of the works.

Birds

5.4.7 All species of native British birds are protected only the Wildlife and Countryside Act 1981 (as amended) making it an offence to intentionally kill, injure or take any species of wild bird, and to take, damage or destroy their nests or eggs. Several species receive higher levels of protection from disturbance under the Schedule 1 of the Act. Several declining bird species are also Priority Species under the NERC Act 2006.

Potential impacts

5.4.8 It is anticipated that the boundary hedgerows will be retained. However, if trees need to be felled or sections of hedgerow removed during breeding bird season, then there is a risk that the development could impact nesting birds without mitigation.

Mitigation measures

5.4.9 As a precautionary approach any vegetation should be removed (if required) outside the nesting bird season (nesting season runs March-August, inclusive) where practicable. Should these works be scheduled during the nesting bird season they should be checked by a suitably experienced ecologist immediately beforehand. In order to prevent disturbance or harm to individuals, work should not be carried out within a minimum of 5m of any in-use nest, although this distance could be more depending on the sensitivity of the species.

Enhancement

5.4.10 Installation of 5no. nesting boxes for a variety of bird species upon retained tree or new structures would be of benefit to the local bird populations.

Monitoring

5.4.11 No additional monitoring is considered to be required outside the standard landscape planting maintenance requirements.

Significance

5.4.12 Assuming the above measures are secured through a planning condition it is anticipated that the proposed development would adversely affect breeding birds.

Hazel Dormouse

5.4.13 Hazel dormice are legally protected, by both the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and are a Priority Species under the NERC Act 2006.

Potential impacts

5.4.14 The proposed scheme is anticipated to retain and safeguard the boundary hedgerows. A small section of the southern hedgerow will be removed to facilitate road access to the development. The hedgerow anticipated to be created along the eastern site boundary would enhance habitat connectivity. If dormouse are present within the southern hedgerow at the time of works then hazel dormouse could be impacted without appropriate mitigation.

Mitigation measures

5.4.15 If <10m of the southern hedgerow is to be removed, then this work should be undertaken following a hazel dormouse method statement produced by a licenced dormouse ecologist Clearance should be supervised by a licence dormouse ecologist and planned as a two-stage operation, with removal of surface vegetation in winter followed by stump extraction and earth removal in the following summer.

5.4.16 If larger sections of hedgerows are required to be removed, or a dormouse found, then a licence dormouse ecologist should be consulted and if necessary a European Protected Species Licence from Natural England obtained prior to works affecting hedgerows commencing.

Enhancement

5.4.17 Detailed landscaping plans could include species within gap planting of hedgerows for the benefit of dormice.

Monitoring

5.4.18 No additional monitoring is considered to be required.

Significance

5.4.19 Assuming that the above measures are secured through a planning condition, it is anticipated that the proposed development would not adversely affect hazel dormouse, should they be present at the time of works.

Bats

5.4.20 In Britain all bat species and their roosts are legally protected, by both the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Several species are also Priority Species under the NERC Act 2006.

Potential impacts

5.4.21 Any introduced artificial lighting could disrupt potential commuting and foraging activities associated with the boundary hedgerows.

Mitigation measures

5.4.22 To minimise disturbances to bats utilising the boundary hedgerows, artificial lighting introduced during the construction works should be fitted with a directional cowl. Lighting should then be positioned in such a way that avoids light spill over hedgerow habitats along the site boundaries. Lighting outputs should be maintained at, or below, 1lux which is equivalent to twilight conditions.

5.4.23 Any introduced/permanent lighting should be kept to a minimum and be sensitive to local bat foraging and commuting activity and avoid light spill over the boundary hedgerows.

5.4.24 It should be appreciated that bats require only small cavities for roosting. It has been assumed trees within the hedgerows will be retained. Should this change at the reserved matters stage an assessment of trees prior to felling for roosting bats should be undertaken by a suitability experienced ecologist. Should a bat be discovered during works, works in that area should cease and a licensed bat ecologist contacted for further advice.

Enhancement

5.4.25 Installation of 5no. bat boxes upon retained trees or new structures would be of benefit to the local bat populations.

Monitoring

5.4.26 No additional monitoring is considered to be required at this stage.

Significance

5.4.27 Assuming that the above measures are secured through a planning condition, it is anticipated that the proposed development would not adversely affect bats.

Badgers

5.4.28 Badgers and their setts are protected under the Protection of Badgers Act 1992. It is an offence under the act to kill, injure or take a badger. It is also an offence to destroy, damage or obstruct a currently active badger sett, or to disturb animals within the sett.

Potential impacts

5.4.29 A mammal hole was identified along the northern site boundary. Badgers are highly mobile and can establish or re-open a disused sett at any time. If badger become established within 30m of the site prior to construction there is a risk of disturbance from construction activities.

Mitigation measures

5.4.30 At the reserved matters stage and prior to construction commencing a badger survey should be undertaken by a suitable experienced ecologist. Should an active badger sett be found, works within 30m of the sett should not occur until appropriate mitigation, and if necessary, a Natural England licence is in place.

5.4.31 As a precautionary approach, any excavations should be covered overnight to avoid the accidental trapping of commuting or foraging badger. Alternatively, excavations can feature a ramp, placed at a 45^{o} angle, to allow badger to escape. All materials used on site should be securely stacked to avoid collapse should they be investigated by badger.

Enhancement

5.4.32 None anticipated to be required at this stage.

Monitoring

5.4.33 No additional monitoring is considered to be required at this stage.

Significance

5.4.34 Assuming the above measures are secured through a planning condition it is anticipated that the proposed development would not result in an adverse impact to badgers, should they be present at the time of works.

Other notable species

Potential impacts

5.4.35 The habitats on site could be used by hedgehogs. Hedgehogs are listed as a Priority Species under the NERC Act 2006.

5.4.36 The introduction of boundary treatments (e.g. fences) has the potential to reduce the accessibility of the site for foraging and commuting hedgehog.

Mitigation measures

5.4.37 Where relevant the boundary fences should include a small gap (13cm by 13cm) to allow hedgehog to pass through.

Enhancement

5.4.38 No enhancement measures considered to be required.

Monitoring

5.4.39 No monitoring is considered to be required.

Significance

5.4.40 Assuming the above measures are secured through a planning condition it is anticipated that the proposed development would not result in an adverse impact to hedgehog, should they be present.

6.0 CONCLUSIONS

6.1.1 Based on the data collected and information provided about the proposed development, it is anticipated that impacts to species and habitats identified within this report could be mitigated, enhanced and secured through appropriate planning conditions.

6.1.2 On this basis the proposed development accords with planning policy.

7.0 APPENDICES

Appendix 1 - Target notes for Phase 1 Habitat Survey

Target Notes (TN)	Description
TN1	Large mammal hole

Appendix 2 – Site images

Plate 1: Example of arable land on site

Plate 2: H2

Plate 3: H3

Plate 4: Mammal hole on northern boundary

Plate 5: Pond 1

Appendix 3 – EDNA results

SureScreen Scientifics

Folio No: E7104
Report No: 1
Purchase Order: PE0001/RH/20200429
Client: HARRIS LAMB
Contact: Rob Harrison

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 30/04/2020
Date Reported: 10/05/2020
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
1581	1581 - Hook Norton		Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth **Approved by:** Sarah Evans

Forensic Scientists and Consultant Engineers
SureScreen Scientifics Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE
UK Tel: +44 (0)1332 292033 Email: scientifics@surescreen.com
Company Registration No. 08550940

Appendix 4 – Common Reptile and Amphibian Method Statement

The site is considered sub-optimal for supporting common reptiles and amphibians due to the limited extent of suitable habitat on site.

Common reptiles are great crested newts are protected under Schedule 5 Section 9 of the Wildlife and Countryside Act (1981) as amended which prohibits the intentional killing and injuring, and trade (i.e. sale, barter, exchange, transporting for sale and advertising to sell or to buy) of this species.

England and Wales the Natural Environment and Rural Communities (NERC) Act 2006 lists UK Species of Principal Importance. All reptile species and great crested newt and common toad (*Bufo bufo*) are listed as UK Species of Principal Importance.

The following measures should be put in place to ensure that, in the unlikely event a reptile or amphibian is found during works, the risk of killing, injury and capturing is minimised:

- A tool box talk will be given to all Contractors working on the site by an appointed Ecological Clerk of Works (ECoW), to inform personnel of the potential presence of common reptiles and amphibians. The tool box talk will include; identification of all reptile and amphibian species likely to be in the area and what to do should a reptile or amphibian be found during works. The tool box talk would be undertaken by a suitably experienced ecologist.

- Any debris or feature within the working area which could act as a potential refuge/hibernation site, including brash piles and log piles, shall be removed carefully by hand without the use of a digger or heavy machinery on a warm and sunny day during the reptile active season (taken to be March to September). If removal is required outside the reptile active season, then this should be done by hand by the ECoW only.

- Any vegetation waste created should ideally be removed from the site immediately to avoid attracting wildlife. If this is not possible, waste should be removed for disposal by hand. Any piles of earth created during works should not be allowed to become vegetated unless the intention is for them to become permanent.

- Materials brought to the site for the construction works should be kept off the ground on pallets to minimise the risk of occupation by retiles or amphibians.

- If any reptiles or amphibians (other than great crested newt) are found within the working area they should be carefully relocated to a designated area identified by the ECoW.

- If it is suspected that a great crested newt has been found, all work must be suspended, and the advice of a suitably licensed great crested newt ecologist sought. A Natural England development licence may be required before works can continue.

- Should large numbers of reptiles be found at any time during construction then the appointed ecologist should be contacted immediately for further advice.