
Ecology Report

PROPOSED WORKS
Clopton Hall, Rattlesden, Suffolk

July 2023



ADDRESS | Mill House, Homersfield, Harleston, Suffolk IP20 0ET

TELEPHONE | 01986 788791

EMAIL | millhouseecology@gmail.com

REPORT PRODUCED BY:

MHE Consulting Ltd
Mill House
Homersfield
Harleston
IP20 0ET

01986 788791
07766 771305
millhouseecology@gmail.com

ARCHITECT

Elena Beatrice Zonta
Gregori Chiarotti
United House
North Road
London
N7 9DP

Contents Amendment Record

REPORT NUMBER: CLOPTONHALL/2023/ER/001

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
1	1	Updated for revised application	24/07/23	A. Gregory
1	2	Internal review – issued to architects	26/07/23	C. Whiting

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Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of existing outbuildings and adjacent gardens at Clopton Hall, Rattlesden, Suffolk. A planning application is to be submitted to Mid Suffolk Council for works including i) the demolition of an existing shed and subsequent erection of a new garage/store building with a gravel frontage, ii) the demolition and reprofiling of an existing bridge, creation of a new parking area and forecourt to north of the main house, iii) new gates and access points to the north and east, and iv) formal landscaping.

The application site is located within the grounds at Clopton Hall and comprises some existing outbuildings, including a former brewhouse, and areas of garden containing a bridge/crossing, lawn and grassed areas, broadleaved trees and shrubs, and a moat.

The moat and several other nearby waterbodies have the potential to support breeding populations of common amphibians, including great-crested newts (GCNs) (*Triturus cristatus*). However, A GCN eDNA sample taken from a pond located c.10m to the north of the site boundary returned a negative result whilst several ponds to the south of the site are likely to be stocked with fish. In terms of terrestrial habitats, grassed and lawn areas provide foraging opportunities whilst shrubs, boundary hedgerows and waste materials (e.g., brick and rubble piles) offer refuge and potentially overwintering opportunities. Most common reptiles are likely to be absent from the site, except for more mobile grass snakes (*Natrix helvetica*), which may hunt in the moat.

No evidence of roosting bats or nesting birds was found in the shed to be demolished. Habitats within the gardens provide high value bat foraging and commuting opportunities (e.g., mature trees and shrubs and moat), bird nesting, song perch and foraging opportunities (e.g., mature trees/shrubs) and foraging and refuge opportunities for hedgehogs (*Erinaceus europaeus*). These habitats may also support some S.41 list invertebrates.

Recommendations are made to avoid wildlife offences and ecological impacts, particularly in relation to protected species. Where impacts cannot be avoided, measures are proposed to mitigate remaining effects including timing of works, good working practices and further protected species surveys, with necessary compensation detailed. Biodiversity enhancements are proposed.

1 Introduction

1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of assessment of existing outbuildings and adjacent gardens at Clopton Hall, Rattlesden, Suffolk (TL 98390 59940; Figure 1).

A planning application is to be submitted to Mid Suffolk Council for works including i) the demolition of an existing shed and subsequent erection of a new garage/store building with a gravel frontage, ii) the demolition and reprofiling of an existing bridge, creation of a new parking area and forecourt to north of the main house, iii) new gates and access points to the north and east, and iv) formal landscaping.

The ecological survey and this report are necessary to:

- Identify the existing ecological value of the site;
- Identify the need for further (e.g., protected species) surveys;
- Assess any potential adverse impacts of the proposed development on ecological features of the site or nearby designated sites;
- Make recommendations for mitigation (if required); and
- Identify opportunities for biodiversity enhancements and, consistent with national and local planning policy, net gains.

This report will be used to develop the proposals as necessary, and to form the basis for the submission of biodiversity information with any planning application. It reflects the site at the time of the survey and should be reviewed and revised as appropriate.

1.2 SITE LOCATION AND DESCRIPTION

The application site (Figure 1) is located within the grounds at Clopton Hall and comprises an existing shed and oil tank (Photos 1 and 2), a section of wall (Photos 3 and 4), and areas of garden containing a bridge/crossing (Photo 5), lawn and grassed areas, broadleaved trees and shrubs (Photos 6 to 9), and a moat (Photos 10 and 11).

The application site is situated within a predominantly agricultural landscape, with small areas of woodland, parkland habitat, and several ponds (Figure 2) located within 250m of the site. Photos are provided in Appendix A1.

2 Planning policy and legislation

2.1 INTRODUCTION

This chapter summarises the key legislation and policies relevant to assessing the biodiversity impacts of the scheme upon habitats and species.

2.2 PLANNING POLICY

2.2.1 *National Planning Policy Framework (NPPF)*

The National Planning Policy Framework was originally published in 2012 and most recently revised in July 2021. The document sets out the Government's planning policies for England and provides guidance on how these policies are expected to be applied. It provides a framework for, and must be taken account of within, locally prepared plans for housing and other development, and is a material consideration in planning decisions.

An overarching objective of the NPPF, which aims to integrate and secure net gains, is to contribute to protecting and enhancing the natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

The full NPPF is available to view online using the gov.uk website: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf . Policies of particular relevance to development and biodiversity include 174, 180, 181 and 182.

174. 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.

180. 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 (SSSI), and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits 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 SSSI;

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 reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

181. The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

182. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects) unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

2.2.2

Local Plan

Adopted local plans provide the framework for development across England, and include policies related to conserving and enhancing the natural environment.

Existing planning policies and supporting documents used to plan, deliver, and monitor development across the Mid Suffolk Council area can be found at:

<https://www.midsuffolk.gov.uk/planning/planning-policy/adopted-documents/mid-suffolk-district-council/mid-suffolk-local-plan/>.

Babergh and Mid Suffolk Councils are currently in the process of creating a joint local plan.

2.3

LEGISLATION

2.3.1

Environment Act 2021

The Environment Act received royal assent in November 2021. The Act will set clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030. Of particular relevance to development planning will the requirement for all new development to deliver a quantified (10%) Biodiversity Net Gain.

2.3.2 *Natural Environment and Rural Communities (NERC) Act 2006*

Section 40 places a duty on every public body in exercising its functions, to have regard to the purpose of conserving biodiversity; this includes restoring or enhancing populations or habitats. A key purpose of this duty is to embed consideration of biodiversity as an integral part of policy and public-sector decision making. *Species and habitats of principal importance* in this respect are those published under Section 41 (“S. 41”) of the NERC Act 2006.

2.3.3 *Wildlife and Countryside Act 1981 (as amended)*

Rare and scarce habitats and species are afforded varying levels of protection under the Wildlife and Countryside Act 1981 (as amended) (hereafter “WCA 1981”). Some species and groups are afforded full protection (e.g. Schedule 1 bird species, bats), whilst others receive partial protection (e.g. widespread reptiles). Section 3.1 provides further detail relevant to this scheme. Species afforded legal protection are referred to by their relevant schedule (“Sch.”) within the act, i.e. “Sch. 1” (birds), “Sch. 5” (other animals), or “Sch. 8” (plants).

Invasive plant species such as Japanese knotweed (*Reynoutria japonica*) and giant hogweed (*Heracleum mantegazzianum*) are listed on Schedule 9 of the WCA 1981. It is an offence to plant or otherwise cause these species to grow in the wild and this includes the development of sites such that the plant colonises land owned by a third party.

2.3.4 *The Countryside and Rights of Way (CROW) Act 2000*

The CROW Act 2000 strengthened and updated elements of the WCA 1981, and gave a statutory basis to biodiversity conservation, requiring government departments to have regard for biodiversity in carrying out its functions and to take positive steps to further the conservation of listed habitats and species. It strengthened the protection of SSSIs and threatened species. Many of its provisions have been incorporated as amendments into the WCA 1981 and some have been superseded by the NERC Act 2006.

2.3.5 *The Conservation of Habitats and Species Regulations 2017*

The Conservation of Habitat and Species Regulations 2017 (hereafter referred to as the Habitat Regulations 2017) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), and elements of the EU Wild Birds Directive, into national law. The 2017 Regulations provide for the designation and protection of ‘European sites’ (SPAs, and SACs), the protection of ‘European Protected Species’ (“EPS”), and the adaptation of planning and other controls for the protection of European Sites.

They have been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

Under the Regulations, competent authorities i.e. any Minister, government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the relevant EC Directives.

2.3.6

Protection of Badgers Act 1992

The Protection of Badgers Act 1992 (hereafter “PBA 1992”) consolidates and improves upon the previous Badgers Act 1973, Badgers Act 1991, and Badgers (Further Protection) Act 1991. Under the PBA 1992 (except when holding a licence to do so) it is illegal for a person to wilfully; kill, injure, take, possess, sell, or otherwise cruelly treat a badger. It is also illegal to dig out, damage, destroy, or obstruct entry to setts (including by use of dog(s)). Further information on offences, exceptions, and penalties are listed on the PBA 1992 on legislation.gov.uk.

3 Methodology

3.1 INTRODUCTION

This report has been produced with reference to relevant guidance, most notably:

- Guidelines for Ecological Report Writing (CIEEM, 2017);
- Biodiversity – Code of Practice for Planning and Development (BS 42020:2013¹);
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018); and
- Biodiversity Net Gain: good practise principles for development (CIRIA, CIEEM and IEMA, 2016).

The following sections summarise the approaches used to review existing data, and to undertake appropriate field surveys to scope and inform an Ecological Impact Assessment (EclA) for the scheme. Where further surveys are considered necessary, this is identified in section 5.

3.2 DESK SURVEY

The following data sources were consulted to assess the potential for the application site to support protected or notable habitats/species:

- Aerial photos, Ordnance Survey maps, and the MAGIC website (<http://magic.defra.gov.uk/>): These were used to identify habitat types including priority habitats, suitability for particular species/groups, and the locality of nationally and internationally designated sites;
- Natural England (NE) open source protected species and habitat survey data; and
- Historical biological records: species and locally designated site records within 2km of the site were provided by the Suffolk Biodiversity Information Service (SBIS; Appendix A2).

From this exercise, it was concluded that the following legally protected species/groups may be present on the sites and/or land immediately adjacent:

- Amphibians including common toad (*Bufo bufo*);
- Mammals including badgers², bats³ and water vole (*Arvicola amphibius*)⁴
- Breeding birds⁵ including Red and Amber status⁶ species; and
- S. 41⁷ list habitats such as hedgerows, and species such as hedgehog.

In the context of the setting and nature of the developments, the 'zone of influence' of the scheme is considered restricted to habitats on the sites and species within 250m of the site boundaries.

3.3 FIELD SURVEY

An initial site walkover was undertaken on the 17 October 2022 to 1) record habitats present; and 2) assess the value of the habitats present for protected and notable species. A list of vascular plants and a description of the vegetation was made,

¹ BSI Standards publication BS 42020:2013 Biodiversity – Code of practice for planning and development.

² Badgers and their setts are afforded protection by the PBA 1992.

³ All species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.

⁴ Water vole receive full protection under the WCA 1981.

⁵ All wild birds, their nests and eggs are protected under the WCA 1981 (as amended), level of protection varies per species.

⁶ The conservation statuses of UK bird species are listed within the Birds of Conservation Concern 5 (Stanbury *et al.*, 2021).

⁷ S. 41 of the NERC Act 2006 lists 'habitats and species which are of principal importance for the conservation of biodiversity in England'.

including the location and extent of any Schedule 9 (WCA 1981) plants. Photos of the habitats present, and any field signs are provided in Appendix A1.

3.3.1 *Habitats and vascular plants*

The site was walked with all distinct vegetation and habitat types, and any features of interest identified using the Phase 1 Habitat Survey methodology (JNCC, 2010). Care was taken to record as many species as possible.

3.3.2 *Amphibians and reptiles*

a) Amphibians

A moat situated within the bounds of the application site (Figure 2; Photos 13 to 15) and several ponds (P1 to P5) located within 250m of the site boundary were assessed for their suitability to support breeding GCNs, and other common amphibians, using the GCN Habitat Suitability Index (HSI) as developed by Oldham et al. (2000).

An environmental DNA (eDNA) sample was taken from Pond P1 (Photo 16) and sent for analysis to SureScreen Scientifics, to determine GCN presence-absence (Biggs *et al.*, 2014).

The terrestrial habitat suitability of the site was assessed with respect to refugia and foraging habitat based on the known habitat preferences of GCN and widespread amphibians such as common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*), and common toad (*Bufo bufo*).

b) Reptiles

Habitats on and around the application site were assessed with respect to the known foraging and refuge habitat preferences of widespread reptile species.

3.3.3 *Bats*

a) Building inspection

The existing buildings were assessed with regards to suitability for supporting roosting bats with reference to the NE Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Conservation Trust (BCT) "Bat Surveys: Good Practice Guidelines, 3rd edition" (Collins, 2016).

b) Tree roost potential

Existing trees which may require removal were visually checked to assess their suitability for use by roosting bats using the following criteria:

1. All potential roosting cavities (e.g. natural cavities, rot holes, woodpecker holes, splits, peeling bark) were inspected from the ground, using binoculars where necessary;
2. All potential niches would be assigned a category according to Bat Conservation Trust (BCT) protocols (Collins, 2016). These categories are listed below:
 - High Suitability: Trees 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;
 - Moderate Suitability: Trees 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 importance;
 - Low Suitability: A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very

limited roosting potential. However, the tree(s) are of a size and age that elevated surveys may result in features being found; or features which may have limited potential to support bats; and

- Negligible Suitability: Trees with negligible bat roost potential.
3. Where potential niches existed, niches below 5m high were physically inspected, using ladders where appropriate. Any cavities with the potential to support roosting bats were inspected with a SeeSnake endoscope and/or a small LED torch as necessary;
 4. All potential roosting niches were checked for the presence of bats (alive or dead), faecal staining, fur and/or scratch marks around the entrance and droppings within the cavities or attached to the trunk/bough below the entrance.

c) Foraging and commuting habitat

Consideration is given to the value of any potential foraging and commuting habitats (i.e., hedgerows, trees, streams, ponds, composting areas) on the application site.

3.3.4 *Nesting birds*

The value of the site was assessed in relation to nesting birds. This was supplemented with field records of birds seen or heard within the site, or nests observed.

3.3.5 *Badger*

The application site and adjacent habitats were surveyed for evidence of badger activity including setts, day beds, latrines, diggings/snuffle holes, paths/runs, scratching posts, hair, and footprints. Any potential sett found was then assessed for evidence of recent use by badger and classified as per current guidance (Scottish Badgers, 2018).

3.3.6 *Water vole*

Moat M1 was assessed for suitability for use by water vole, with a thorough search for field signs including droppings, latrines, feeding remains and burrows.

3.3.7 *S.41 list habitats and species*

The site was surveyed to determine the presence of any S. 41 habitats such as native species-rich hedgerows. The site's suitability for S. 41 list species such as hedgehog was assessed based on their habitat preferences.

3.3.8 *Non-native invasive plant species*

The site was inspected for Schedule 9 species such as Japanese knotweed and giant hogweed.

3.4 SURVEY CONSTRAINTS

Given the nature of the site and the survey carried out, the timing of the survey visit was considered appropriate for this report.

3.5 SURVEYORS

The initial site survey was undertaken by Christian Whiting BSc (Hons) MSc MCIEEM who has over 24 years' experience working as an ecologist. He holds Natural England (NE) survey licences for bats (2015-14745-CLS-CLS - Bat Survey Level 2), barn owl (CL29) and great crested newts (Class A licence 2015-17633-CLS-CLS). He is a Registered Consultant (Registration RC089) on NE's Bat Low Impact Class Licence and is an agent under the Environment Agency's and IDB water vole (*Arvicola amphibius*) organisational and class licences respectively. His main areas of expertise are bats, vascular plants, amphibians and reptiles, otter (*Lutra lutra*) and water vole.

3.6

ASSESSMENT

Impacts and effects upon habitats and species are assessed with reference to the CIEEM Guidelines for Ecological Impact Assessment (2018) and are reported in Section 5, based on the baseline conditions reported in Section 4.

The assessment includes potential impacts upon habitats and species during the construction and operational phases of the scheme. It considers positive and negative impacts, their extent, magnitude and duration, frequency and timing and reversibility.

4 Results

4.1 INTRODUCTION

This chapter summarises the results of the desk and field surveys.

4.2 BASELINE ECOLOGICAL CONDITIONS - DESK STUDY

4.2.1

Designated sites

Any locally designated sites (e.g., Local Nature Reserves) within 2km and nationally designated sites within 5km of the application site are listed below in Table 4.1. There are no internationally designated sites within 13km of the site.

Table 4.1 Relevant designated sites

Site name	Site designation
Birds and Great Woods*	CWS
Rattlesden Cemetery	CWS
Shelland and Woolpit Woods*	CWS
Bradfield Woods*	National Nature Reserve (NNR) and SSSI
Norton Wood*	SSSI

*Listed on the Ancient Woodland Inventory for England.

Locally designated sites

No Local Nature Reserves are located within 2km. Two County Wildlife Sites (CWS) are listed below.

Great and Bird's Wood CWS comprises two small, ancient woodlands situated amidst farmland to the south of Woolpit and to the west of Borley Green. Great Wood, which is enclosed on two sides by a deep ditch, contains ash (*Fraxinus excelsior*) and field maple (*Acer campestre*) coppice, with areas of mature silver birch (*Betula pendula*). Beneath the overstorey is a dense shrub layer of mainly old hazel (*Corylus avellana*) coppice with honeysuckle (*Lonicera periclymenum*), privet (*Ligustrum vulgare*), elder (*Sambucus nigra* agg.) and hawthorn (*Crataegus monogyna*) also present.

Birds Wood is located to the south of Great Wood and has a similar structure although it is rather more open in places. Bramble (*Rubus fruticosus* agg.) dominates the ground flora where there is sufficient light. Dead wood in the form of fallen trees and branches, abundant in both woods, provides a valuable habitat for dead wood invertebrates. Great Wood and Birds Wood are managed entirely for game rearing and shooting.

Rattlesden Cemetery CWS supports a remnant of species-rich grassland of high conservation value. Despite its relatively small size the cemetery supports a high diversity of plants; a total of seventy-eight species were recorded when the cemetery was surveyed in 1992. Some of the rarer plants present include pepper-saxifrage (*Silau silaus*), burnet-saxifrage (*Pimpinella saxifrage*), and hoary ragwort (*Jacobaea erucifolia*).

Shelland and Woolpit Woods are enclosed by a woodbank and ditch. Most of the wood is composed of ash, field maple and hazel coppice with oak standards. Some areas are dominated by hornbeam coppice. A detailed survey of the wood in 1986 showed that the ground flora supports a high diversity of flowering plants including several scarce Suffolk species which are restricted to ancient woods. These include herb-paris

(*Paris quadrifolia*), wood-melick (*Melica uniflora*), wood sorrel (*Oxalis acetosella*), abundant wood anemone (*Anemone nemorosa*) and yellow pimpernel (*Lysimachia nemorum*). Oxlip (*P. elatior*), a nationally rare species restricted to some East Anglian ancient woods has also been recorded in Shelland Wood.

Given the limited nature of the proposal no significant impacts upon the locally designated sites are anticipated.

Nationally designated sites

Bradfield Woods NNR and SSSI comprises a series of ancient woodlands which have been traditionally coppiced since the mid-13th Century. The combination of coppice management and great complexity of soil types and drainage present throughout the site has produced diverse and unusual communities of plants; over 370 species of plants have been recorded, a total only surpassed in 2-3 other locations. Notable species present include oxlip (*Primula elatior*), herb-paris, ramsons (*Allium ursinum*), water avens (*Geum rivale*), wood spurge (*Euphorbia amygdaloides*) and several species of orchid.

The woods support hazel dormouse (*Muscardinus avellanarius*) and other small mammals, which favour coppiced stools, a range of woodland birds, including a large breeding population of nightingale (*Luscinia megarhynchos*), and numerous species of invertebrate. A large pond adds extra ecological value and several small streams and ephemeral pools support plants which require high humidity such as bryophytes and ferns.

Norton Wood SSSI is an ancient coppice-with-standards woodland with small, more recent additions of secondary woodland. The wood is situated on a gently sloping plateau on weakly acidic soils of sand and loess over boulder clays. Much of the wood is of the acid pedunculate oak (*Quercus robur*) – hazel – ash woodland type with abundant birch (*Betula sp.*). There are also areas of wet ash – maple (*Acer sp.*) and pedunculate oak – hornbeam (*Carpinus betulus*) woodland. The ground flora includes several uncommon plants, and a characteristic flora has developed on a series of wide rides. The wood is bisected by a railway line.

The application site lies within a SSSI Impact Risk Zone but does not meet any of the criteria for consideration (e.g., aviation proposals). No significant impacts or effects are anticipated in relation to any of the features of the designated site.

4.2.2 *Priority habitats*

The Magic Map database identifies all land on site as Wood-pasture and Parkland habitat, with further areas shown to immediately west and northeast of the site. There is some uncertainty that these habitats have been correctly classified. Areas of deciduous woodland (broadleaved) are shown c. 215m to the east and c. 220m to the south of the site respectively.

4.2.3 *Species*

No protected or notable species records exist for within the application site boundary. Table 4.2 identifies, where data resolution allows, species records within 2km of the application site boundary.

Table 4.2 Protected/notable species, relevant to the scheme, within 2km of site

Latin Name	Common Name	Designation
Bats		
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	WCA5

Birds		
<i>Accipiter nisus</i>	Sparrowhawk	Amber Status
<i>Apus apus</i>	Swift	Red Status
<i>Columba oenas</i>	Stock dove	Amber Status
<i>Delichon urbicum</i>	House martin	Red Status
<i>Emberiza citrinella</i>	Yellowhammer	Red Status; S. 41
<i>Falco tinnunculus</i>	Kestrel	Amber Status
<i>Passer domesticus</i>	House sparrow	Red Status; S. 41
<i>Perdix perdix</i>	Grey partridge	Red Status; S. 41
<i>Prunella modularis</i>	Dunnock	Amber Status
<i>Pyrrhula pyrrhula</i>	Bullfinch	Amber Status
<i>Streptopelia turtur</i>	Turtle dove	Red Status; S. 41
<i>Sturnus vulgaris</i>	Starling	Red Status
<i>Turdus philomelos</i>	Song thrush	Amber Status
<i>T. viscivorus</i>	Mistle thrush	Red Status
<i>Tyto alba</i>	Barn owl	WCA1
Invertebrates		
<i>Limenitis camilla</i>	White Admiral	RLGB.VU; S. 41
<i>Tyria jacobaeae</i>	Cinnebar	S. 41
Other mammals		
<i>Arvicola amphibius</i>	Water vole	S. 41
<i>Erinaceus europaeus</i>	Hedgehog	S. 41
<i>Lepus europaeus</i>	Brown hare	S. 41
<i>Lutra lutra</i>	Otter	S. 41
<i>Meles meles</i>	Badger	PBA 1992
Plants		
<i>Filago vulgaris</i>	Common cudweed	RLGB/ENG.Lr(NT)

4.2.4

NE open source GCN records

Assessment of Natural England's GCN class licence returns data and eDNA pond survey records show the closest positive record (license return) to be located c. 2.3km northeast of the application site (dated 2016), which is outside the normal dispersal range of the species.

4.3

BASELINE ECOLOGICAL CONDITIONS – FIELD SURVEY

4.3.1

Habitats and vascular plants

Descriptions of the habitats (Appendix A1) and the characteristic plants species present are provided below.

a) Built environment

A small shed (Photos 1 and 2) and adjacent oil tank situated in the garden to the southeast of Clopton Hall are proposed to be demolished.

The area of garden immediately north of the shed contains a brick wall with an archway and a semi-vegetated stone/concrete pathway with various stored waste/building materials (e.g., bricks and tiles etc.) (Photo 3).

Two outbuildings (Brew House and attached lean-to) which will remain unaffected by the proposed development are located to the north of the wall and arch (Photo 4).

A small redbrick bridge exists over a moat in the garden to the north of Clopton Hall. (Photo 5). This will also be demolished.

b) Lawn

Large areas of managed lawn and short grassland with ruderal fringes exist in the gardens surrounding the buildings. These grassed areas support low numbers of common grasses and forbs including common knapweed (*Centaurea nigra*), creeping buttercup (*Ranunculus repens*), common field speedwell (*Veronica persica*), doves-foot cranesbill (*Geranium molle*), groundsel, and yarrow (*Achillea millefolium*).

c) Trees and shrubs

Numerous trees and shrubs of varying maturity exist within the wider grounds, several of which require felling or cutting back. Trees/shrubs that require felling/removal include bay laurel (*Laurus nobilis*), holly (*Ilex aquifolium*), lilac (*Syringa sp.*) and cherry laurel (*Prunus laurocerasus*) bushes surrounding the shed and oil tank (Photos 6 and 7), a fig tree (*Ficus carica*) to the west of the buildings, and a mature horse chestnut (*Aesculus hippocastanum*) in the moat to the west of the bridge (Photo 8). Some broadleaved shrubs, including hawthorn, will be cut-back along the eastern garden boundary where the new site access is proposed (Photo 9).

d) Moat

A moat M1 exists in the garden to the east and north/northwest of the buildings (Photos 10 and 11).

4.3.2

Amphibians and reptiles

a) Ponds

Moat M1 is located within the bounds of the application site, to the east, north and northwest of the buildings. The western length of the moat was dry at the time of the site walkover (Figure 2; Photo 8) and is likely to hold water only occasionally. The eastern section of the moat holds water and supports some macrophytes and marginal species (Photos 10 and 11); the moat could potentially be stocked with fish, with some shading by bankside trees and vegetation. Adjacent terrestrial habitats offer potential foraging and refuge opportunities (e.g., mature gardens and woodland etc.). The pond was assessed as supporting good habitat suitability for GCNs (HSI score = **0.74**).

Pond P1 (Photo 16) is situated c. 10m north of the application site boundary. The pond holds water, although water levels were low during the site walkover, and supports some macrophyte coverage, including broadleaved (*Potamogeton natans*) and crisp-leaved (*P. crispus*) pondweeds, with marginal species such as common reed (*Phragmites australis*), bulrush (*Typha latifolia*), brooklime, jointed rush (*Juncus articulatus*) present. There was no evidence of fish or waterfowl and a moderate amount of suitable terrestrial habitat within 250m, giving the pond a good (**0.79**) HSI score.

Ponds P2 to P5 are a series of ponds and small lakes situated between c.20-50m south of the application site. Several of these ponds are stocked with fish. Pond P2 is heavily shaded, with lots of leaf litter and debris in the water. Pond P3 is a small pond with very turbid water (fish present); pond P4 supports good macrophyte coverage with fish likely absent whilst pond P5 also has turbid water and supports fish.

b) GCN eDNA analysis

An eDNA sample taken from pond P1 for a separate development in June 2022 returned a negative result (GCNs absent) (Appendix A4).

c) Terrestrial habitat

i) *Amphibians*

No local historical amphibian records exist for within 2km of the application site boundary although several ponds exist within 250m, which could potentially support animals. The application site itself supports areas of suitable terrestrial foraging (e.g., lawns) and refuge (shrubs, hedgerows ruderal fringes) habitat for common amphibians, with discrete refuge opportunities present beneath and/or within materials (e.g., bricks, tiles and rubble) stored around the buildings and in the garden.

Several small, wooded areas exist in the wider locality, which retain some connectivity to the site and support further potential refuge and overwintering opportunities.

ii) *Reptiles*

No local historical reptile records within 2km of the application site boundary with habitats present assessed as low value for most common reptiles, e.g., slow-worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*), which prefer areas of long, tussocky grassland with scattered scrub habitat. The site is also situated within a largely agricultural landscape and relatively isolated from areas of suitable reptile habitat. This is likely to prevent the dispersal of most species onto the site, apart from more mobile species, e.g., grass snakes (*Natrix helvetica*).

4.3.3

Bats

a) Building Assessment

No evidence of roosting bats was found in the small shed to be demolished. Overall the shed was assessed as supporting negligible bat roosting potential (BRP).

The Brew House (to remain unaffected by the proposed development) was assessed as supporting low BRP.

b) Tree Roost Assessment

No trees which require felling and/or cutting back have the potential to support roosting bats.

b) Foraging/commuting habitat

The gardens at Clopton Hall support High value bat foraging habitats (e.g., mature trees and shrubs, hedgerows and moat). These habitats retain some connectivity to other linear features in the wider locality (e.g., woodland and hedgerows) and were assessed as being of High value to commuting bats (Collins, 2016).

4.3.4

Nesting birds

Several robin (*Erithacus rubecula*) and wren (*Troglodytes troglodytes*) (Amber Status) nests/roosts were present in the Brew House and attached lean-to (Photos 17 and 18). No evidence of nesting birds was found in the shed, although it could potentially support the above species. Trees and shrubs within the garden provide suitable nesting opportunities for small passerines such as dunnock (*Prunella modularis*) (Amber Status), and house sparrow (*Passer domesticus*) (Red Status, S. 41), with potential for larger species like stock dove (*Columba oenas*) (Amber Status) and song thrush (*Turdus philomelos*) (Amber Status) in taller, mature specimens.

4.3.5

Badger

No evidence of badger (e.g., snuffle holes, runs, latrines, setts) was observed.

4.3.6

Water vole

No evidence of water vole (e.g., burrows, latrines and feeding remains) was found in the moat within the sections immediately adjacent to the bridge.

4.3.7

S. 41 habitats and species

a) Habitats

All land on site (and immediately west and northeast of the site) is shown on Magic Maps as Woodpasture and Parkland habitat with some uncertainty that this habitat has been correctly classified – most of this land now forms part of a residential garden containing large areas of lawn and an abundance of ornamental shrubs, e.g. laurel. Some mature trees and grassland exist in the far western part of the application site, although these areas will not be impacted by the development works.

b) Species

There is potential for hedgehogs to forage across the site, particularly in the hedgerows. Mature trees, shrubs, and hedgerows could support some S. 41 list invertebrates such as Lepidoptera.

4.3.8

Non-native invasive plants

No non-native invasive species were recorded within the application site boundary.

4.4

GEOGRAPHIC CONTEXT

The geographic context of a feature is a useful consideration within an assessment of impacts. For this report, the geographic frames of reference for the habitats and species present on site are provided in Table 4.3; values are based upon the criteria in Table A2.1 and expert best judgements.

Table 4.3 Feature value based on geographic context

Feature	Value
Lawn, trees/shrubs, hedgerows and moat	Local
Amphibians and reptiles	Local
Bats	Local
Nesting and foraging birds	Local
S. 41 habitats and species	Local

5 Assessment and recommendations

5.1 INTRODUCTION

The following section provides a summary description of the proposed development, with an assessment of associated impacts and likely significant effects upon biodiversity.

The assessment and recommendations are based on use of the mitigation hierarchy, which in the first instance aims to avoid impacts. Where impacts cannot be avoided, they should be minimised (through mitigation). Only where impacts cannot be avoided or minimised should there be compensation for biodiversity harm.

Ecological enhancements are suggested, and consideration is given to individual as well as overall net gains or losses of biodiversity.

5.2 DESCRIPTION OF PROPOSED DEVELOPMENT

Planning permission is being sought to demolish an existing shed and oil tank and then erect a new garage/store building with a paved frontage. A bridge over the moat will also be demolished and reprofiled to create a new vehicular access with a new parking area and forecourt, with new gates, access points, and formal landscaping included. Some hedgerow/shrub planting is included in landscaping proposals.

Works will require the permanent loss of areas of lawn, the felling and cutting back of several trees and shrubs, and loss of ruderal bankside vegetation along the moat where the bridge will be widened. Combined, this has the potential to impact amphibians, bats, nesting/roosting birds and hedgehogs.

The assessment and recommendations below provide preliminary recommendations for mitigation and enhancements for the proposed development. They are based on drawings provided by Gregori Chiarotti Architects Ltd, including Existing and Proposed Landscape Plans (Drawing Nos. 2124 – 100 - 2 and 2124 – 2000 - 2) and Proposed Garage Elevations (Drawing No. 2124 – 2011 – 2), and information available at the time of writing and should be updated accordingly as the scheme is subsequently amended.

5.3 NEED FOR FURTHER SURVEYS

It is generally advised that subject to no significant change in site management regimes, and dependent on the species present, baseline survey results remain valid for approximately 12 – 18 months (CIEEM, 2019). Exceptions include where mobile species are/may be present, where site management practices cease or change, or where existing guidance indicates otherwise.

5.4 ASSESSMENT OF IMPACTS

The EclA assessment process (CIEEM, 2018) involves:

- Identifying and characterising impacts and their effects;
- Incorporating measures to avoid and mitigate negative impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancement.

The emphasis in EclA is on the assessment of 'significant effects' i.e. an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. In broad terms significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species including extent, abundance, and distribution.

The ecological features to be subject to detailed assessment in this report are those judged to be important and potentially affected by the project; protected species are included where the development will result in a potential breach of legislation.

5.5 HABITATS AND VASCULAR PLANTS

a) Potential impacts

Vegetation clearance and construction activities will result in the permanent loss of areas of lawn where the new gravel forecourt, parking areas and extended pathways are proposed as well as the loss of several (mostly ornamental non-native) trees and shrubs in the footprint of the new garage and parking areas. A single mature horse chestnut tree will be felled to accommodate widening of the bridge and a fig tree felled to the west of the buildings. Loss of these habitats constitutes a significant negative ecological effect at a Local level.

Any accidental damage to adjacent terrestrial habitats (e.g., lawn areas, trees and shrubs in the wider gardens) during construction would result in a significant negative effect at the Local level.

Building works could potentially cause damage to the moat through accidental pollution and siltation whilst installation of inadequate sewerage could also impact the moat during the operational phase. Such impacts would have a significant negative effect at the Local level.

b) Mitigation

i) Terrestrial habitats

Retained hedgerows and trees should be protected with temporary fencing (e.g., Heras) to prevent above ground damage and Root Protection Areas (RPAs) should be used to inform the detailed design.

The site compound should be sited away from hedgerows and trees to prevent damage to retained boundary features.

ii) Aquatic habitats

A contractor Risk Assessment Method Statement (RAMS) should be developed ahead of works commencing to ensure Good Practice measures are used to avoid and/or minimise the risk of pollution upon moat M1. Measures may include, but are not exclusive to:

- Locating any site compounds (including any fuel storage) away from the moat;
- Limiting topsoil removal as required and covering topsoil whilst stockpiled;
- Cleaning machinery in designated areas with a sump and re-using wastewater where possible or discharging via a sewer or tanker only;
- Storing chemical and fuels securely within double-bunded bowsters or chemical stores (with a 110% capacity to contain any spillage) away from the moat;
- Using water based, non-toxic and biodegradable chemicals and fuels where possible;

- Mixing and washing chemicals and associated equipment in designated areas with wastewater safely disposed of via mains sewerage or tanker as appropriate;
- Use of biodegradable hydraulic and fuel oils;
- Having adequate site security in place; regularly checking equipment for failures and/or leaks; and
- Keeping spill kits and booms present on the site and ensuring staff are trained in their use.

Although prepared for other areas of the UK, useful further information is available via the Guidance for Pollution Prevention - Works and maintenance in or near water: GPP 5 January 2017 document, produced by Natural Resources Wales (NRW), the Northern Ireland Environment Agency (NIEA) and the Scottish Environment Protection Agency (SEPA)⁸.

c) Residual effects

The loss of lawn habitat, trees and shrubs will result in a significant negative residual effect at the Local level and requires compensation, which should be included as part of any final landscaping plans.

5.6 AMPHIBIANS AND REPTILES

a) Potential impacts

Vegetation clearance, ground-breaking and construction activities will result in the temporary disturbance to and permanent loss of some areas of potential foraging (e.g., lawn and ruderal bankside vegetation) and refuge habitats (e.g., dense woody shrubs) with potential entrapment resulting in the injury and mortality of individuals due to the presence of trenches, caustic materials such as wet concrete, and temporary stockpiles of soil and/or building materials.

Accidental damage/pollution of the moat could harm any animals, including GCNs present.

On completion of the development, the use of gulley pots or similar as part of a surface water drainage system can result in the entrapment of amphibians (Muir, 2012).

Combined, such impacts could result in permanent negative effects upon low-to-moderate numbers of individuals considered a negative effect at the local level.

b) Mitigation

To ensure no wildlife offence occurs, the site could be registered as part of the NE GCN District Level Licence (DLL). However, given the limited footprint of the building conversion (beyond the existing footprint) and other works, good working practises as part of a Precautionary Working Method Statement would likely ensure offences are avoided. These should include:

1. All lawn/grassed areas on site should be kept short prior to and during construction.
2. Clearance of any taller vegetation should be undertaken sensitively during the months of April to September inclusive. Hand tools (e.g. strimmers and hedge trimmers) should be used to take taller vegetation down to ground level using a 2-stage cut as follows:

⁸ <http://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf>

- A first cut to be taken to 150mm above ground level with brash raked prior to being removed from site;
 - After at least 1 hour (preferably overnight), a second cut to ground level; and
 - Maintained near to ground level until works commence.
3. Excavations should be filled on the same day they are dug or covered overnight with ply boarding and any gaps filled with damp sharp sand;
 4. If this is not feasible access ramps should be created to allow animals to escape and the excavations should be inspected daily and immediately prior to infilling.
 5. Any animals (except for GCN) present should be moved to retained habitats, e.g. hedgerows and/or shrubs providing adequate cover;
 6. Footings and concrete slabs should be poured during the morning where possible to ensure it has solidified prior to dusk to reduce the risk of animals coming into contact with wet concrete;
 7. Any hand mixing of mortar or concrete should be on ply boarding over a tarpaulin which is folded over the boarding at the end of each day to prevent animals coming into contact;
 8. Any excess concrete should be poured into a concrete skip, so it can then set to prevent animals coming into contact.
 9. All building materials and waste materials should be stored on hardstanding or stored off the ground on pallets to reduce risk of animals seeking refuge;
 10. The GCN poster in Appendix A5 should be erected in the welfare facilities provided for construction staff on site.
 11. Should any GCNs (Appendix A5) be encountered, works should stop immediately, and advice be sought from a suitably experienced ecologist. Any other animals should be allowed to move out of the works area, or safely relocated.
 12. **Gully pots should be avoided where possible and permeable paving should be used so amphibians cannot become trapped in silt traps or attenuation crates; and**
 13. **Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen⁹ to prevent amphibians entering drains.**

c) Residual effects

With mitigation measures proposed, no significant effects are anticipated during either the construction or operational phases.

5.7

BATS

a) Potential impacts

i) Roosting bats

None anticipated.

ii) Foraging and commuting habitats

Vegetation clearance will remove several trees and shrubs including single mature horse chestnut and fig trees. This is considered a minor impact in relation to local foraging opportunities.

iii) Light disturbance

Lighting (construction and operational phases) can impact bat commuting and foraging behaviour and increase the risk of predation, which could affect foraging success and population recruitment and is considered a potential significant effect at the Local level.

⁹ <https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/>

Lighting impacts relate to security lighting external to the new garage/store building, and potentially from spillage of internal lighting once the building is in use. In this instance, impacts on retained mature trees and shrubs in the garden and the moat are most relevant.

iv) Roofing membranes

Research has shown bats can become entangled in modern breathable roofing membranes if used under clay pantiles or peg/plain tiles (Waring *et al.*, 2013) or behind weatherboarding. Without mitigation, the impacts above could result in significant effects at a Local level.

b) *Mitigation*

i) Foraging and commuting habitat

As per 5.5, protective fencing will be used to protect retained hedgerows and trees.

ii) Light disturbance

Exterior lighting (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon retained natural habitats including the moat and mature trees and shrubs in the gardens, particularly to the north and east of the new garage, and should follow current guidance as necessary^{10,11}:

- *Type of lamp (light source)*: Light levels should be as low as possible as required to fulfil the lighting need. Lighting should have a maximum of 7.5 to 10 lux and LED lights should be used using the warm white (or amber) spectrum, with peak wavelengths >550nm (2700 or 3000°K) and no UV component; and
- *Lighting design*: Lighting should be directed to where it is needed, with minimal horizontal spillage towards retained habitats including mature broadleaved trees and moat. This can be achieved by restricting the height of the lighting columns/fixtures and the design of the luminaire, including the following measure:
 - ❖ Light columns/fixtures in general should be as short as possible as light at a low level reduces the ecological impact.
 - ❖ Luminaires with an upward light ratio of 0% should be mounted on the horizontal i.e., with no upward tilt.
 - ❖ If taller lights are required, and as a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill; and
 - ❖ PIR movement sensors and timers should be used to minimise the 'lit time'.

iii) Roof membrane

Bat friendly roofing felt (e.g., Type 1F or a breathable sarking board e.g., Hunton Sarket or Pavatex Isolair) should be used as handmade clay pantiles or plain tiles are proposed for roofing materials and behind weatherboarding. Until recently non-bitumen coated roofing membranes (NBCRM) would not be licensed by Natural England. However, a NBCRM which has passed a snagging propensity test as defined by Natural England and the Bat Conservation Trust may be approved as part of an EPS Mitigation licence application. Therefore, it could be used to avoid impacts on bats.

c) *Residual effects*

With mitigation measures implemented, impacts upon roosting bats will likely be negligible.

¹⁰ <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting>

¹¹ www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

5.8

NESTING BIRDS

a) Potential impacts

Demolition works and shrub and tree clearance may result in disturbance and destruction of active nests, if undertaken during the breeding season. Accidental damage to retained trees and hedgerows could also affect breeding success and/or result in the destruction of active nests. The destruction of active nests would be considered a significant negative effect (as an offence under wildlife legislation) at the Local level.

Increased noise levels (during construction and operational phase) could affect the ability of birds to hold territories during the breeding season.

b) Mitigation

As per 5.5.

Habitat avoidance and mitigation as per sections 5.5 and 5.6.

Commencement of vegetation clearance, including tree/shrub felling and cutting back, and demolition works should take place outside of the nesting bird season (March to August inclusive). If this is not feasible, a check for nesting birds should be undertaken prior to works starting. If any active nests are present, works within 5m must wait until the young have fledged.

c) Residual effects

Effects upon active nests will be avoided though the reduction in nesting opportunities will require compensation.

5.9

WATER VOLE

a) Potential impacts

Clearance of vegetation along the northern and southern northern banks of the moat to accommodate widening of the bridge is required although no evidence of water vole was recorded with habitats present considered largely unsuitable.

b) Mitigation

As per 5.5 and 5.6. Vegetation along the banks of the moat where development works is proposed should be kept short prior to and during construction.

c) Residual effects

With mitigation measures implemented no residual effects are considered likely.

5.10

OTHER S. 41 LIST HABITATS AND SPECIES

a) Potential impacts

Vegetation clearance will result in the permanent loss of potential refuge and foraging habitats for hedgehogs. During construction, hedgehogs could potentially fall into open trenches resulting in entrapment and possible injury and mortality of individuals due to falling in or becoming in contact with caustic substances such as fresh concrete.

Erection of ecological barriers (e.g., timber panel fencing) would affect foraging access for animals. In combination such impacts would be considered to result in a negative ecological effect at the local level.

b) Mitigation

Habitat avoidance and mitigation as per section 5.5 and 5.6. Animals encountered within the working area should be moved to suitable cover, e.g., base of hedgerows or in the wooded area in the western corner of the application site

During construction, concrete should be poured early in the day or covered with ply boarding or membrane overnight to prevent animals coming into contact. Trenches should be covered overnight, or mammal ladders (large rough planks placed at shallow angles and fixed in position) placed to allow animals escape. Uncovered trenches must be checked daily and any animals encountered be relocated out of the works area.

The use of close board fencing is not proposed and should be avoided, with native species-rich hedgerows preferable where boundary features are required. If close board fencing were to be installed, then at least one hedgehog highway¹² should be provided at either end of each fencing run with signage.¹³

c) Residual effects

Direct impacts upon hedgehog will be avoided with no significant residual impacts anticipated.

5.11

COMPENSATION

To compensate for the loss of trees and shrubs (with associated impacts on foraging bats, hedgehogs and amphibians and nesting birds) any proposed tree or shrub planting should comprise native species, including woody shrubs that provide autumn colour as well as seasonal sources of nuts, fruit and berries in autumn and winter for birds and mammals. A minimum of 6 of the following species should be planted in new hedges:

- Cherry plum (*Prunus cerasifera*);
- Common dogwood (*Cornus sanguinea*);
- Crab apple (*Malus sylvestris*);
- Field maple (*Acer campestre*);
- Guelder rose (*Viburnum opulus*);
- Hawthorn (*Crataegus monogyna*);
- Hazel (*Corylus avellana*);
- Holly (*Ilex aquifolium*);
- Hornbeam (*Carpinus betulus*);
- Spindle (*Euonymus europaeus*);
- Dog rose (*Rosa canina*); and
- Wild privet (*Ligustrum vulgare*).

The provision of 3x robin/wren nest boxes (Appendix A6), to be mounted on suitable trees within the applicant's landholding (≥ 2m from the ground) and/or the walls of the newly converted building or new garage, will compensate for the loss of small passerine nesting opportunities.

5.12

CUMULATIVE EFFECTS

The Mid Suffolk Council website was searched on July 24, 2023 for significant planning applications within 1km of the application site dating back by two years. Refused and withdrawn applications were not considered in relation to cumulative ecological effects.

¹² <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/>

¹³ <https://ptes.org/shop/just-in/hedgehog-highway/>

The search returned a low number of householder applications for extensions and/or alterations to existing dwellings, an application to build an agricultural reservoir, and an application on land immediately north of the application site, where prior approval was granted for the proposed change of use of a redundant agricultural barn (Class Q) to form 5 no. dwellings. No ecology report was submitted with any of these applications.

There is no indication from the above applications that there will be any significant cumulative impact with the current application.

5.13

ENHANCEMENT OPPORTUNITIES

Mitigation measures proposed will ensure negative ecological effects are avoided. To maximise biodiversity enhancements a minimum of 5 of the 8 options listed in Table 5.1 should be implemented.

Table 5.1 Biodiversity enhancements

Feature	Enhancement suggestion
Nectar rich climbers	<p>1. Any ornamental planting should utilise nectar rich plants to benefit pollinators and associated predators (e.g., foraging bats and hedgehogs).</p> <p>Planting should include nectar rich climbers such as traveller's joy (<i>Clematis vitalba</i>) and honeysuckle (<i>Lonicera periclymenum</i>), which could be planted at 5ft intervals along proposed hedgerows and/or trained up walls, fences, posts, and trellises.</p>
Orchard	<p>2. An orchard could be planted in the gardens using a mixture of heritage fruit trees of local provenance¹⁴.</p>
Grassland management	<p>3. An area of grassland in the western corner of the application site could be managed to become more structurally diverse, e.g., areas left to grow long, which will allow for thick, matted, tussocks to form and a dense litter layer (c. 70mm deep) to develop with pathways mown through creating a mosaic of more open and refuge habitats.</p> <p>This will provide a habitat for nesting field voles and other small rodents as well as foraging opportunities for amphibians and hunting habitat for raptors (e.g. barn owl and kestrel) and potentially grass snakes.</p>
Raptor box	<p>4. A kestrel box¹⁵ could be erected on a suitable mature tree overlooking the grassland area to the west of the buildings.</p>
Small passerine nest boxes	<p>5. Six nest boxes (Appendix A6) including sparrow terrace (x2), starling box (x2), tree creeper box (x1) and spotted flycatcher (x1) box could be mounted on existing mature trees in the gardens and/or buildings.</p>
Bats	<p>6. Three bat boxes comprising 1 each of the boxes Appendix A7), could be erected on suitable mature trees in the gardens</p>

¹⁴ <https://www.applesandorchards.org.uk/suffolk-information/>

¹⁵ <https://shopping.rspb.org.uk/bird-feeders-boxes-tables/bird-houses-nest-boxes/bird-prey-nest-boxes/kestrel-nest-box.html>

Feature	Enhancement suggestion
Wildlife friendly compost heap	7. A composting area (Appendix A8) could be created close to the moat with adjacent log/brush piles (see below) to provide refuge habitat for other reptiles and amphibian species.
Log/brush piles	8. Some log/brush piles (Appendix A9) could be created within the gardens using logs/brush from any trees (broadleaved species only – not conifers) requiring felling during construction works. Log/brush piles provide important refuge habitats for amphibians/reptiles and are likely to support a range of fungi, dead wood invertebrates and solitary bees, which in turn will attract foraging small mammals and birds etc.

Peat-based composts will not be used in any planting scheme to avoid impacts upon habitats and carbon storage.

5.14

CONCLUSIONS

Ecological impacts resulting from the proposed design have where possible been avoided or minimised through design, mitigation, and compensation measures. To maximise potential biodiversity benefits the measures proposed should be secured through detailed design and appropriate planning conditions, scheme specific and/or as per the British Standard (BS 42020:2013). Relevant planning conditions could include:

1. BS 42020:2013 D.2.1 to provide a Biodiversity Method Statement to detail mitigation;
2. A Biodiversity Enhancement Strategy to detail compensation and enhancement measures;
3. BS 42020:2013 D.3.2.1. nesting bird check (by suitably experienced ecologist) prior to tree/shrub clearance;
4. BS 42020:2013 D.3.5 to limit lighting design impacts upon bats; and
5. BS 42020:2013 D.3.7 to ensure mitigation, compensation and enhancement measures are successfully implemented.

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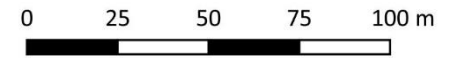
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Figures



Legend

 Application site boundary

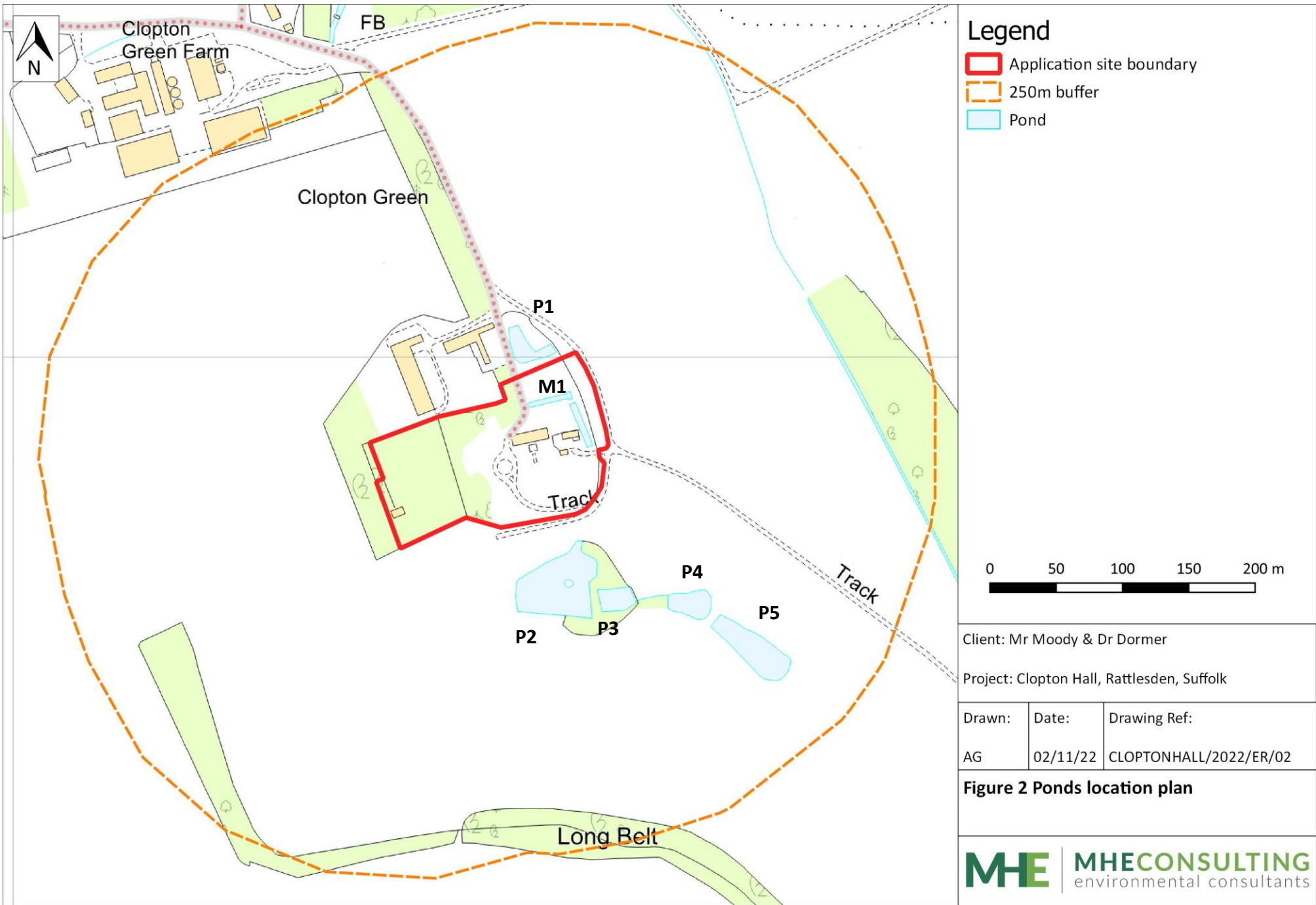


Client: Mr Moody & Dr Dormer

Project: Clopton Hall, Rattlesden, Suffolk

Drawn:	Date:	Drawing Ref:
AG	02/11/22	CLOPTONHALL/2022/ER/01

Figure 1 Site location plan



Appendices

Appendix A1 Photos



Photo 1 Internal view of shed to be demolished (i)



Photo 2 Internal view of shed to be demolished (ii)



Photo 3 Garden wall and arch with semi-vegetated hard standing



Photo 4 The 'Brewhouse' and attached lean-to, which will remain unaffected by the proposed development



Photo 5 View of bridge to the north of Clopton Hall which will be demolished



Photo 6 Trees/shrubs and flowerbed adjacent to oil tank and shed



Photo 7 Trees and shrubs to the southwest of oil tank



Photo 8 Horse chestnut (to be removed) in dry section of moat M1 to the west of the bridge



Photo 9 Garden path and trees along eastern garden boundary adjacent to where new entrance is proposed



Photo 10 View of moat M1 to the east of the bridge

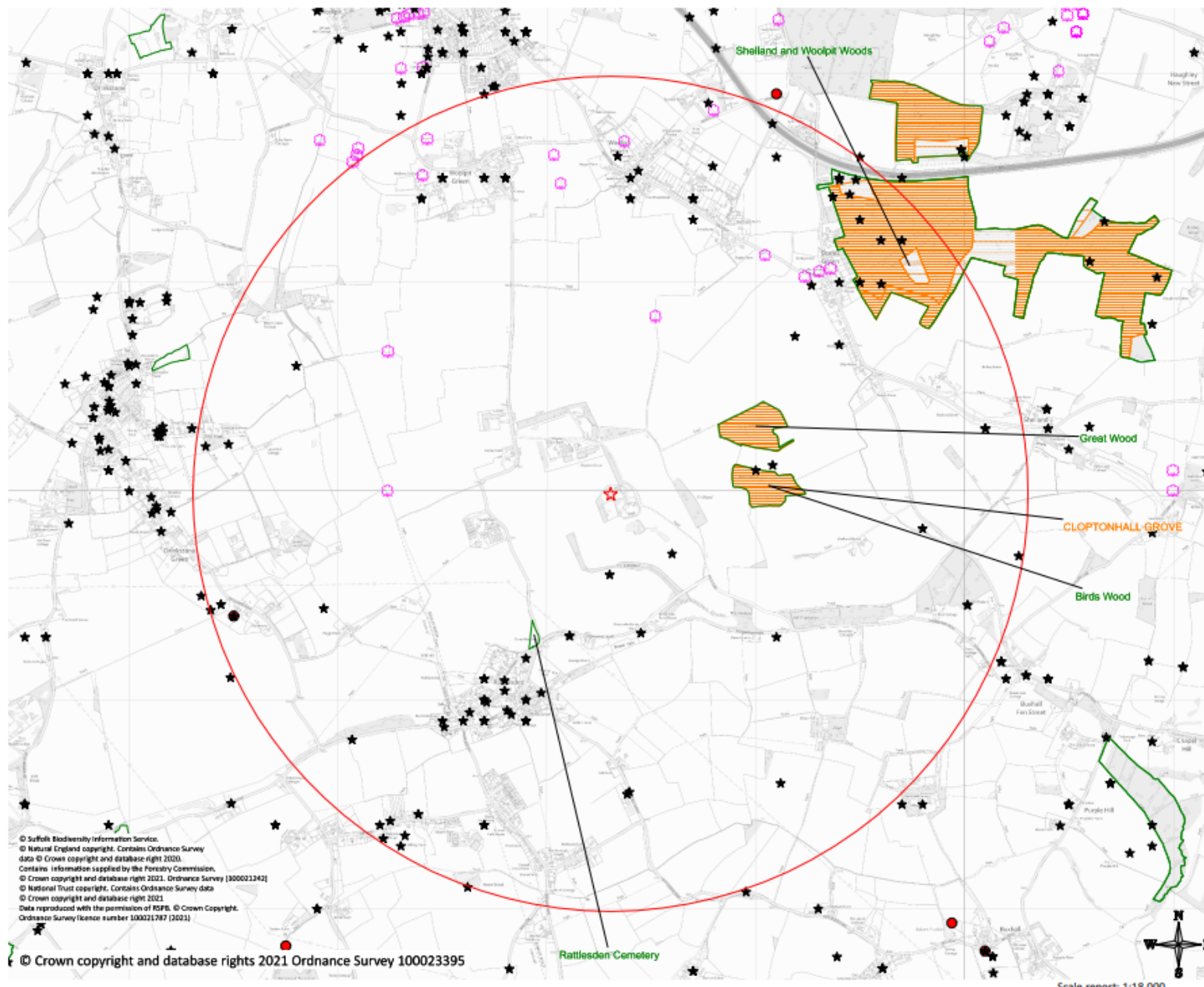


Photo 11 View of the moat M1 to the northeast of the Brewhouse



Photo 12 Pond P1

Appendix A2 SBIS data search map



Data Enquiry

- ☆ Search Point
- Search Area

Protected, Locally Scarce and Rare Species

- ★ Record Locations (for grids of 6 fig. or greater)

Schedule 9 Species

- Record Locations (for grids of 6 fig. or greater)

Ancient/Veteran/Notable Trees

- 🏠

Roadside Nature Reserve

-

County Wildlife Sites

-

County GeoSites

-

SSSI

- ▨

LNR

- ▨

SPA

- ▨

SAC

- ▨

RAMSAR

- ▨

NNR

- ▨

SWT Reserve

- ▨

Ancient Woodland Inventory

- ▨

ACONB

- ▨

Suffolk Coast and Heaths or Dedham Vale

- ▨

National Park

- ▨

The Broads

- ▨

Other Public or Conservation Ownership/Management

- ▨

Forestry Commission, National Trust (public access), RSPB (public access)

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Scale report: 1:18,000



Suffolk Biodiversity Information Service

Date: 15/09/2021 | Drawn by: Andy Mercer

MHE Consulting (Rattlesden TL9830559985) 2km Data Enquiry

Appendix A3 EclA criteria

A3.1 General criteria for geographic context/value

Designation	Example
International	<ul style="list-style-type: none"> • SPA, SAC and Ramsar sites and the features that they have been designated for. • A sustainable area of habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole. • A sustainable population of an internationally important species e.g. UK Red Data Book (RDB) species or European Protected Species (EPS) of unfavourable conservation status in Europe (e.g. Annex II species: bats, GCNs etc.), of uncertain conservation status or of global conservation concern in the UK BAP.
National	<ul style="list-style-type: none"> • SSSI or a discrete area that meets the selection criteria for designation. • A sustainable area of priority habitat identified included on the S. 41 NERC Act list or smaller areas of such habitat that are essential to maintain the viability of a larger whole. • A sustainable population of priority species (listed under S. 41 of the NERC Act 2006). • A sustainable population of a nationally important species i.e. RDB species not included in above category but which is listed on Schedules 5 or 8 of the WCA 1981 (as amended). Also, sites supporting a breeding population of such species or supplying a critical element of their habitat requirements. • A sustainable population of uncommon or threatened Annex IV EPS species at a UK level. • A nationally scarce species (occurs in 30-100 10km squares in the UK) that has its main UK population within the district.
County	<ul style="list-style-type: none"> • A viable area of habitat identified in the county BAP. • A County Wildlife Site. • A sustainable population of common or non-threatened Annex IV EPS species at a UK level. • A Nationally Scarce species that does not have its main population within the county. • Any BAP species not included in the 'national' category above for which a county Action Plan exists.
Local	<ul style="list-style-type: none"> • Individual members of local populations of priority or other nationally/internationally important species which are not in themselves key for maintaining a sustainable population (e.g. individual dog otter passing through area with no holts or resting sites). • Other habitats and species not in the above categories but are considered to have some value at the district/borough level.

Appendix A4 GCN eDNA results

Folio No: E14540
Report No: 1
Purchase Order: Dower House Rattlesden
Client: MHE CONSULTING LTD.
Contact: Christian Whiting

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: 28/06/2022
Date Reported: 08/07/2022
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
2672	Pond 1, Dower House	TL98397 60011	Pass	Pass	Pass	Negative	0

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

Reported by: Chris Troth

Approved by: Jennifer Higginbottom



METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

- SIC: Sample Integrity Check [Pass/Fail]**
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.
- DC: Degradation Check [Pass/Fail]**
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.
- IC: Inhibition Check [Pass/Fail]**
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.
- Result: Presence of GCN eDNA [Positive/Negative/Inconclusive]**
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.



Appendix A5 GCN poster

Great Crested Newt

If seen by any employee, works must cease immediately and an ecologist be contacted for advice

It is an offence to intentionally or recklessly disturb, injure or kill great crested newts

Further information can be found at www.arguk.org



https://secure.telegraph.co.uk/multimedia/archive/03435/great_crested_newt_3435922k.jpg

Appendix A6 Bird boxes



RSPB Robin and wren diamond nestbox

Product ID: R401640

£ 15.00

★★★★☆ [Read all reviews](#)

Best-selling, diamond shaped, open-fronted nest box attractive to robins, wrens, pied wagtails and spotted flycatcher.

[Read full information](#)

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 4 January 2023 and is subject to availability
- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer

Qty

Visit the RSPB website

Shop login



Search for a product



 0 items

[Bird food](#) [Bird care](#) [Wildlife & garden](#) [Binoculars & scopes](#) [Gift, clothing & home](#) [Books & stationery](#) [Christmas](#) [Sale](#) [Donate](#)

[Home](#) > [Bird care](#) > [Bird houses & nest boxes](#) > [Garden bird nest boxes](#) > [RSPB Sparrow terrace nest box](#)

 Print



RSPB Sparrow terrace nest box

Product ID: R407816

£ 35.00

★★★★☆ [Read all reviews](#)

Provides three separate nest boxes in one FSC® certified timber terrace, each with its own 32mm entrance hole. Beautifully made in the UK.

RSPB nest boxes provide a safe and snug place for birds to roost and nest. Unlike cheaper alternatives, our [bird houses](#) are made from sustainable FSC® certified timber and have excellent insulation properties. This makes them warm in winter and cool in summer. RSPB nest boxes are carefully designed with correct dimensions and ventilation, without perches for intruders to grip onto and threaten the occupants.

[Read full information](#)

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 4 January 2023 and is subject to availability



Search for a product



0 items

Bird food Bird care Wildlife & garden Binoculars & scopes Gift, clothing & home Books & stationery Christmas Sale Donate

FREE delivery when you spend £20! Hurry, ends soon! [Details >](#)

Home > Bird care > Bird houses & nest boxes > Garden bird nest boxes > Apex starling nestbox

Print



Apex starling nestbox

Product ID: R405836

£ 26.99

★★★★☆ [Read all reviews](#)

Beautifully made FSC @ certified timber nest box designed with starlings in mind. The 45mm entry hole allows the larger birds to nest in the box.

Features include drainage holes and one side that pivots open for easy end-of-season cleaning.

Nest box measures 31.5 x 18.5 x 18cm.

[Read full information](#)

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 4 January 2023 and is subject to availability
- Loyalty points can be collected/redeemed as usual



Home About Us Other Services Gallery Contact



Open Fronted Nest Box

£25.00

For birds such as robin and pied wagtail. Open fronted but with a generous canopy to screen from aerial predators. Place in good cover not in the open.

43 in stock

- 1 + [Add to basket](#)

Category: bird and bat boxes

Description Additional information Reviews (0)

Description

Height tbc

Width

Depth



Willow Tit/Tree Creeper

£35.00

A new improved box designed for fitting to smaller willow/birch trees, low to the ground, to encourage willow tit. Filled internally with damp sawdust/shavings/rotting wood as this species likes to excavate their own holes. The narrowing top crevice is designed to be suitable for roosting bats. Also suitable for tree creeper without the sawdust infill.

12 in stock

- 1 + [Add to basket](#)

Category: [bird and bat boxes](#)

Description

Additional information

Reviews (0)

Description

Height 430mm
Width 60mm
Depth 70mm
Typical Weight 4.3kg

Appendix A7 Bat boxes



Woodstone multi-chamber box



Eco Kent bat box



Vincent Pro bat box

Appendix A8 Wildlife friendly compost area

How to build a wildlife friendly compost heap...

- Clear an area.
- Stand a pallet up so its long edge sits on the ground.
- At either end of the pallet, hammer a stake between the two layers of the pallet.
- Place two pallets at right-angles to the first and once again secure with stakes.
- Secure the remaining pallet to the front using wire or string - this will allow you to remove it when you need to turn or empty your compost.



Shaggy ink cap - fungi help breakdown the contents of your compost heap.



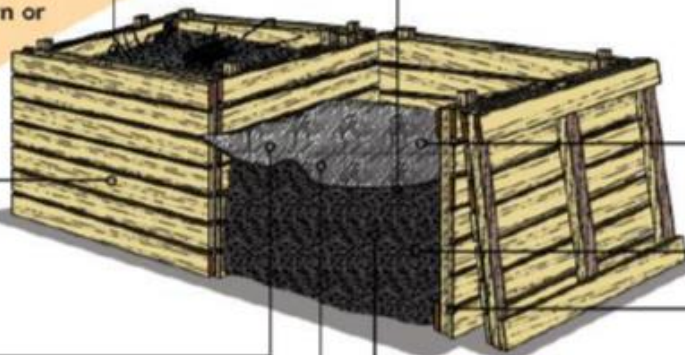
Snail - will feed on the compost and provide food for many different birds.



Grass snake - if you are lucky a female may lay eggs in your heap during June or July.



Woodlouse - minibeasts are vital to a compost heap.



Millipede - they munch their way through the ingredients, turning it into a rich compost.



Slow worm - may breed and have their young in the heap.



Common toad - will find shelter in the damper parts of the heap.



Worm - a healthy compost heap needs worms.



Hedgehog - may visit at night to feed on snails and other invertebrates.

The compost heap's ingredients

Balance is the key to a good compost heap. To make a good mix you need more or less equal amounts of 'greens' and 'browns' plus small amounts from the 'others' list.

The Greens

Nitrogen-rich ingredients

- Comfrey leaves, nettles, young green weeds - avoid weeds with seeds, coffee grounds, grass cuttings, urine - diluted using 20 parts water to 1 part urine, raw vegetable peelings, tea bags and leaves, soft green prunings.

The Browns

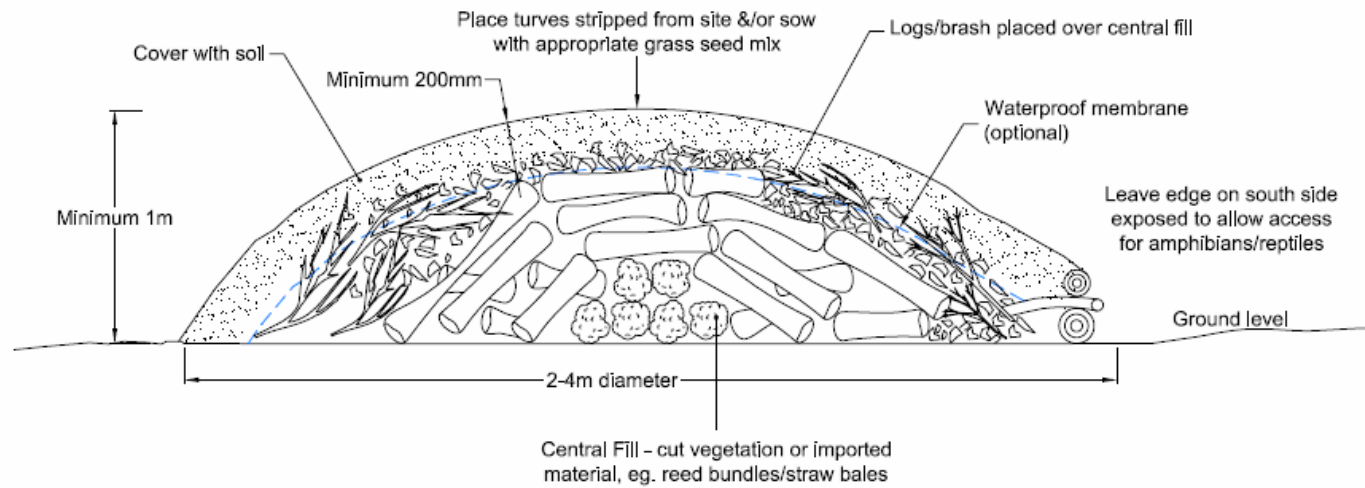
Carbon-rich ingredients

- Cardboard - cereal packets and egg boxes, waste paper - even shredded, old bedding plants, newspaper - although it is better to recycle them, hay and straw, wood shavings, fallen leaves.

Other Compostable Items

- Wood ash - in moderation, hair, crushed egg shells, natural fibres - such as wool or cotton.

Appendix A9 Log/brash piles



Brush/log pile recently created



Brush/log pile (c. 2 years old) with vegetation growing through and over