MHE | MHECONSULTING
environmental consultants

Ecology Report

PROPOSED NEW DWELLING
Land adjacent to Hazel Shrub, Bentley, Suffolk

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Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of land adjacent to Hazel Shrub, Bentley, Suffolk. A planning application is to be submitted to Babergh District Council to construct a single dwelling on an area of rough grassland.

The proposed development site is located off Hazel Shrub, Bentley and comprises an area of species poor grassland within the bounds of a larger area of grassland which includes areas of rough grassland to the south. Habitats within or adjacent to the area surveyed include grassland, scattered trees, mixed scrub, boundary hedgerows/trees, a small orchard and a wildlife pond (P1).

Pond P1 is located c. 190m to the south of the application site was assessed as supporting *excellent* habitat suitability for great crested newts (*Triturus cristatus*), whilst the application site comprises of periodically mown species-poor grassland with few tussocks. The grassland is unlikely to provide daytime refuge habitat but it will provide foraging habitat overnight during wet nights, whilst the boundary hedgerows and scrub adjacent to where the new dwelling and garage are proposed provide refuge and dispersal habitat. The adjacent Dodnash Wood CWS provides optimal foraging and refuge habitat including overwinter.

As for amphibians, the application site is considered to be sub-optimal for common reptiles though as grass snake (*Natrix helvetica*) and common lizard (*Zootoca vivipara*) have been recorded from Dodnash Wood CWS there is the potential for animals to inhabit areas of rough grassland to the south of the application site.

No trees with the potential to support roosting bats will be physically impacted by the proposed development, but some mature trees exist within a roadside hedgerow which have support some potential roosting niches, whilst numerous trees exist with the adjacent Dodnash Wood that have the potential to support roosting bats. The hedgerows and scrub adjacent to where the new dwelling is proposed provide moderate value commuting and foraging habitat.

Hazel dormice (*Muscardinus avellanarius*) have been recorded from Dodnash Wood and the area of scrub by the proposed site entrance and existing roadside hedgerows provide potential habitat. Hedgehogs (*Erinaceus europaeus*) may forage over grassland and use the hedgerow for refuge. No evidence of badger (Meles meles) were recorded on site.

The roadside hedgerow, trees and scrub supports nesting and song perch habitat for a range of small passerines such as dunnock (*Prunella modularis*), song thrush (*Turdus philomelos*) and wren (*Troglodytes troglodytes*). Nightingale (Luscinia megarhynchos) have been recorded from Dodnash Wood.

Recommendation are made to avoid and mitigate significant ecological impacts including timing of work and implementation of good working practice. Compensatory habitat creation is outlined to achieve No Net Loss of biodiversity while ecological enhancements are recommended to deliver a Biodiversity Net Gain. Standard planning conditions are recommended to secure the measures proposed.

1 Introduction

1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of land at Hazel Shrub, Bentley, Suffolk (TM 10903 36361; Figure 1). A planning application is to be submitted to Babergh District Council to construct a single dwelling and garage with gardens on an existing area of rough grassland.

Significant landscaping is proposed including native hedgerow planting, native tree and woody shrub planting, and a pond for rainwater collection and to provide wildlife habitat.

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 sites at the time of the survey and should be reviewed and revised as appropriate.

1.2 SITE LOCATION AND DESCRIPTION

The proposed development site is located off Hazel Shrub, Bentley (Figure 1) and comprises an area of rough grassland with some areas mown to create pathways (1 to 5), with scattered trees (Photo 6), mixed scrub (Photo 7), boundary hedgerows/trees (Photos 8 to 10), a small orchard and a wildlife pond (Photo 11). An area of mixed broadleaved woodland (Dodnash Wood CWS) exists to the west of the site.

Photos referred to within this report are provided within 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 (NPFF)

The National Planning Policy Framework was originally published in 2012 and recently revised in February 2019. 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 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/779764/NPPF_Feb_2019_web.pdf Policies of particular relevance to development and biodiversity include 170, 175, 176 and 177.

170. 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.

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 (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 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 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 incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

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

a) potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC);
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.

177. 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)nunless 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. Planning policies and supporting documents that are used to plan, deliver and monitor development across the Babergh District Council area can be found at https://www.midsuffolk.gov.uk/planning/planning-policy/adopted-documents/babergh-district-council/.

Babergh and Mid Suffolk District Councils are currently in the process of generating a new Joint Local Plan.

2.3 LEGISLATION

2.3.1 *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. S*pecies and habitats of principal importance* in this respect are those published under Section 41 ("S. 41") of the NERC Act 2006.

2.3.2 *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 (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzanium*) 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.

2.3.3 *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 SSSI 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.

2.3.4 *The Conservation of Habitats and Species Regulations 2017*

The Conservation of Habitat and Species Regulations 2017 (as amended) transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) into UK law. They have been recently 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 (National Site Network) 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 Regulations.

2.3.5 *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, posses, 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 42020:2013[1]);
- 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 (EcIA) 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, Natural England open-source data, 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; and
- Historical biological records: species and locally designated site records within 2km of the sites were provided by the Suffolk Biological Information Service (SBIS);

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 great crested newt (GCN) (*Triturus cristatus*)[2] and reptiles such as grass snake (*Natrix helvetica*)[3];
- Mammals including bats[2], hazel dormouse (*Muscardinus avellanarius*)[2]; and badger (*Meles meles*)[4],
- Breeding birds[5] including Red and Amber status[6] species; and
- S. 41[7] list habitats such as hedgerows, and species such as hedgehog (*Erinaceus europaeus*) and stag beetle (*Lucanus cervus*)[8].

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.

[1] BSI Standards publication BS 42020:2013 Biodiversity – Code of practice for planning and development.
[2] GCNs, hazel dormouse and all species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.
[3] Widespread reptiles and amphibians receive partial protection under the WCA 1981.
[4] Badgers and their setts are afforded protection by the PBA 1992.
[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 4 (Eaton *et al*., 2015).
[7] S. 41 of the NERC Act 2006 lists 'habitats and species which are of principal importance for the conservation of biodiversity in England'.
[8] Stag beetle are protected under Sch. 5 of the WCA 1981 against sale.

3.3 FIELD SURVEY

An initial site walkover was undertaken on the 18 December 2020 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, 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

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

A c.300m^2 wildlife pond P1 situated in the far south-west corner of the field (Figure 2; Photo 11) and two other ponds (P2 and P3) within 250m of the survey area boundary were assessed for their suitability to support GCNs using the Habitat Suitability Index (HSI) methodology as developed by Oldham et al. (2000).

b) Reptiles

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

3.3.3 Bats

a) Tree Roost Assessment

Existing trees were visually checked to assess their Bat Roosting Potential (BRP) 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;
   - 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; and
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.

b) Foraging and commuting habitat

Consideration is given to the value of any potential foraging and commuting habitats (i.e. hedgerows, trees, ponds) on the application site (Collins, 2016).

3.3.5 *Hazel dormouse*

The suitability of the site for hazel dormouse was assessed based on their known habitat preferences (Bright *et al*., 2006).

3.3.6 *Nesting birds*

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

3.3.7 *Badger*

The application sites 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).

3.3.8 *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.

3.3.9 *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 walkover and pond assessments were undertaken by Christian Whiting BSc (Hons) MSc MCIEEM who has over 20 years' experience working as an ecologist and holds Natural England (NE) survey licences for bats (2015-14745-CLS-CLS - Bat Survey Level 2, and great crested newts (Class A licence 2015-17633-CLS-CLS).

He is a Registered Consultant (Registration RC089) on NE's Bat Mitigation Class Licence. He is registered on the NE water vole (*Arvicola amphibius*) Developers Class Licence CL31 (Intentional disturbance of water voles and damage/destruction of water vole burrows by means of 'Displacement') and the Environment Agency's and Water Management Alliance IDB water vole 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 (LNR) and County Wildlife Sites (CWS) within 2km, Nationally designated sites within 5km, and Internationally designated sites within 13km of the application site are listed in Table 4.1.

Table 4.1 Relevant designated sites

Site name	Site designation
Buxton Wood*	CWS
Buxton Wood Meadow	CWS
Brantham Bridge Meadow	CWS
Dodnash Wood*	CWS
Dodnash Brook Pond	CWS
Engry Wood*	CWS
Engry Wood Dormouse Hedge	CWS
Great Martin's Hill Wood*	CWS
RNR 176	RNR
Tare/Pedlar's Grove	CWS
Cattawade Marshes	SSSI
Freston and Cutler's Woods with Holbrook Park	SSSI
Stour Estuary	SSSI
Stour and Orwell Estuaries	SPA/Ramsar

* Listed on the Ancient Woodland inventory for England.

Locally designated sites

No Local Nature Reserves are located within 2km of the proposed development site though nine County Wildlife Sites (CWS) and one Roadside Nature Reserve (RNR) which exist within 2km of the site are listed below:

- Buxton Wood CWS is an ancient woodland divided into two separate areas. Stands of sweet chestnut (*Castanea sativa*), hazel (*Corylus avellana*), oak (*Quercus* sp.), cherry (*Prunus* sp.), and apple (*Malus* sp.) are present, with an abundance of deadwood habitat supporting invertebrates and various woodland birds.
- Buxton Wood Meadow CWS is an extensive area of unimproved grassland supporting a diverse floral assemblage of plants associated with unimproved wet pastures. Forbs characteristic of sandy soils have colonised drier areas of the site.
- Brantham Bridge Meadow CWS is a traditionally grazed, triangular shaped, low lying meadow with a diverse floral assemblage which includes the rare species wood club-rush (*Scirpus sylvaticus*).
- Dodnash Wood CWS is an important ancient woodland comprising sweet chestnut, elm (*Ulmus* sp.), ash (*Fraxinus excelsior*), hazel, sessile oak (*Quercus petraea*), rowan (*Sorbus aucuparia*), holly (*Ilex aquifolium*), alder (*Alnus glutinosa*), and willow

(*Salix* sp.). The wood supports a variety of uncommon woodland plants, numerous woodland bird species and hazel dormice (*Muscardinus avellanarius*).

- Dodnash Brook Pond CWS is a large pond notable for supporting an abundance of wetland plants, amphibians and Odonata.
- Engry Wood CWS is an ancient woodland comprising ash, hazel, oak, and silver birch (*Betula pendula*). It is rich in woodland plants including hairy St John's-wort (*Hypericum hirsutum*). Hazel dormice are found within the wood and in a hedgerow along Pond Hall Lane (Engry Wood Dormouse Hedge CWS).
- Great Martin's Hill Wood CWS is ancient woodland with sweet chestnut, oak, birch, ash, and field maple (*Acer campestre*). Non-native species have also been planted on part of the site. The site holds records of slow-worm and numerous invertebrate species, while an adjacent (but separate) hedgerow supports hazel dormice.
- RNR 176 CWS is designated for lesser calamint (*Clinopodium nepeta*).
- Tare Grove CWS and Pedlars' Grove CWS are two adjacent ancient woodlands comprising ash, field maple, hazel, oak, and some large old cherry trees. Both woods support a diverse ground flora, while an abundance of deadwood provides habitat for invertebrates and woodpeckers. Dormice have been recorded in the boundary hedgerows.

Dodnash Wood and Great Martin's Hill Wood, the two nearest sites, are well served by footpaths. Given the limited size of the development, no significant ecological effects are anticipated.

Nationally designated sites

The Cattawade Marshes SSSI and the Stour Estuary SSSI are incorporated into the larger Stour and Orwell Estuaries SPA/Ramsar designated area and are, therefore, included in the following description below.

Freston and Culter's Wood with Holbrook Park SSSI comprises one of the largest areas of ancient woodland in Suffolk. They contain a variety of woodland types typical of light, sandy soil and spring-fed valleys. There is a long history of management at the site, which includes the creation of a deer park and the medieval introduction of sweet chestnut. The coppice stools in Holbrook Park are amongst the largest recorded in Britain with many stools exceeding 3m in diameter. The woods support a distinctive ground vegetation and are among the best bluebell (*Hyacinthoides non-scripta*) woods in Suffolk.

The proposed development site falls within a SSSI Impact Risk Zone but does not meet the criteria to be considered a significant risk to the nearby designated sites.

Internationally designated sites

The Stour and Orwell Estuaries SPA and Ramsar sites (including Cattawade Marshes and the Stour Estuary SSSIs) are large Internationally important networks of estuaries and coastal habitats which qualify for important populations of overwintering birds including hen harrier (*Circus cyaneus*), redshank (*Tringa totanus*), black-tailed godwit (*Limosa limosa islandica*) amongst other species. Overwintering waterfowl have been estimated to number over 65,000 birds. The Ramsar features comprise Internationally important mudflat, cliff, and saltmarsh habitats.

Habitats Regulations Assessment

Where a development or project may, alone or in combination, have a 'likely significant effect' upon the features of the Natura 2000 or Ramsar site, the Habitats Regulations 2017 require a Habitats Regulations Assessment (HRA) to be undertaken. Advice from NE states that increased housing located within 1km by foot and 13km by car of Natura 2000 sites may potentially cause disturbance to the interest features due to walkers (and dogs). Disturbance to bird species that breed and/or overwinter within the sites is considered to cause the greatest impact.

HRAs are undertaken by a "competent authority" (CA), which in the case of Local Plans and most planning applications is the Local Planning Authority (LPA). Within Suffolk, Ipswich Borough Council in partnership with the neighbouring authorities Babergh District Council and East Suffolk Council have developed a 'Recreational disturbance Avoidance and Mitigation Strategy' (RAMS) to address likely significant effects upon Natura 2000 sites resulting from development within the area. The strategy provides the practical basis and evidence to identify projects to mitigate the impact of new development on the protected sites.

Financial contributions towards the RAMS will normally be the LPA's preferred mechanism for securing mitigation, and no further assessment will be made within this document.

4.2.2 *Priority habitats*

No priority habitats exist within the survey area boundary, though some ancient/deciduous woodland (Dodnash Wood CWS) borders the site to the west.

4.2.3 Species

a) Relevant biological records

Table 4.2 identifies protected and notable species records for within 250m (**in bold**) and 2km of the proposed development. Historical records for barn owl (*Tyto alba*) and stag beetle (*Lucanus cervus*) exist within the survey area boundary.

Table 4.2 Protected/notable species within 2km of the application site.

Scientific name	Common name	Legal /conservation status
Amphibians and reptiles		
Bufo bufo	Common toad	Sch. 5; S. 41
Lissotriton vulgaris	Smooth newt	Sch. 5
Triturus cristatus	Great crested newt	EPS; Sch. 5; S. 41
Anguis fragilis	Slow-worm	Sch. 5; S. 41
Natrix helvetica	**Grass snake**	**Sch. 5**

Zootoca vivipara	**Viviparous lizard**	**Sch. 5; S. 41**
Bats		
Barbastella barbastellus	Barbastelle	EPS; Sch. 5; S. 41
Eptesicus serotinus	Serotine	EPS; Sch. 5
Nyctalus noctula	Noctule	EPS; Sch. 5; S. 41
Plecotus auritus	Brown long-eared	EPS, Sch. 5, S. 41
Pipistrellus pipistrellus	Common pipistrelle	EPS; Sch. 5
P. pygmaeus	Soprano pipistrelle	EPS; Sch. 5; S. 41
Birds		
Alauda arvensis	Skylark	Red Status; S. 41
Apus apus	Swift	Amber Status
Falco tinnunculus	**Kestrel**	**Amber Status**
Luscinia megarhynchos	Nightingale	Red Status
Passer domesticus	House sparrow	Red Status; S. 41
Passer montanus	Tree sparrow	Red Status; S. 41
Prunella modularis	**Dunnock**	**Amber Status**
Pyrrhula pyrrhula	Bullfinch	Amber Status; S. 41
Streptopelia turtur	Turtle dove	Red Status; S. 41
Sturnus vulgaris	**Starling**	**Red Status; S. 41**
Turdus philomelos	Song thrush	Red Status; S. 41
Turdus viscivorus	Mistle thrush	Red Status
Tyto alba	**Barn owl**	**WCA1i**
Other mammals		
Erinaceus europaeus	**Hedgehog**	**S. 41**
Lepus europaeus	**Brown hare**	**S. 41**
Meles meles	Badger	PBA 1992
Micromys minutus	Harvest mouse	S. 41
Muscardinus avellanarius	**Hazel dormouse**	**EPS; Sch. 5; S. 41**
Invertebrates		
Limenitis camilla	White admiral	RLENG.VU; S. 41
Lucanus cervus	**Stag beetle**	**Sch. 5; S. 41**
Satyrium w-album	White letter hairstreak	RLGB.EN; Sch. 5; S.41
Plants		
Spergula arvensis	Corn spurrey	RLENG.VU

4.2.4 *Additional species records*

Assessment of Natural England's GCN class licence return data and eDNA records show the closest positive record to be located 4.4km to the south-west of the application site (dated 2017), which is outside the dispersal range of the species.

4.3 BASELINE ECOLOGICAL CONDITIONS – FIELD SURVEY

4.3.1 *Habitats and vascular plants*

Descriptions of the habitats and the characteristic plants/species present are provided below, with photos provided in Appendix A1.

a) Rough grassland

Most of the land within the survey area boundary comprises periodically topped rough grassland (Figure 3; Photos 1 to 3). In recent years, the field has been managed primarily for wildlife (Landowner, *pers. comm*.) with areas left uncut to increase the diversity of habitats present on site (Photo 4). Some mown areas exist around the field margins and close to the edge of Dodnash Wood (preventing scrub encroachment along the woodland edge) where bluebells grow (Photo 5).

In the recent past, a large part of the field was managed for harvesting hay/silage with some poultry sheds located on part of the field where the current owners built a house in 2007 (Source: aerial photos on Google Earth Pro).

b) Hedgerows

Native species-poor hedgerows form the northern and eastern field boundaries. Hedgerow H1 extends along the northern boundary and comprises mostly of blackthorn with occasional field maple and mature oak trees (Photos 8 and 9). Hedgerow H2 extends along the eastern boundary (Photo 10) and comprises blackthorn, hawthorn and common laurel (*Prunus laurocerasus*) with occasional mature oak trees.

c) Scattered trees

A line of small-leaved lime trees (*Tilia cordata*) has recently been planted (c. 10 years) either side of a grass track in the middle of the field extending towards the edge of Dodnash Wood CWS (Photo 6, Figure 3). Some scattered trees exist to the south of the lime trees, with small orchard in the far south-east corner of the field. Both were planted at approximately the same time as the small-leaved limes (Source: Google Earth Pro).

An earlier planted row of trees exists to the north of the lime trees (>20 years) (Source: Google Earth Pro). These trees were presumably planted in this location to visually screen the adjacent poultry sheds which were present prior to 2007.

d) Mixed scrub

An area of mixed scrub with broadleaved trees exists along part of the northern field boundary adjacent to the field entrance (Photo 7) where some remains of former agricultural buildings exist. Tree/shrub species recorded here included field maple, pedunculate oak, blackthorn (*Prunus spinosa*), dog rose (*Rosa canina*) and common ivy (*Hedera helix*).

e) Pond

A wildlife pond is situated in the far south-west corner of the field (Photo 11).

f) Woodland

Dodnash Wood CWS, an ancient woodland (mixed broadleaved) borders the field to the west and south (Photos 4 and 5). Tree species present within the wood include sweet chestnut, sessile oak, elm, ash, hazel, rowan and holly, with alder and willow abundant in wetter areas. The ground flora is dominated by bracken, with frequent patches of bluebell, dog's mercury (*Mercurialis perennis*) and other forbs associated with ancient woodlands.

4.3.2 Amphibians and reptiles

a) Amphibians

i) Terrestrial habitat

The periodically topped and uncut areas of rough grassland offer suitable foraging habitat for amphibians, whilst boundary hedgerows/trees, mixed scrub and the adjacent woodland provide potential dispersal, refuge and hibernation habitat. The overall terrestrial habitat suitability of the site for amphibians is considered to be High.

ii) Ponds

Pond P1 (Figure 2; Photo 11) is located c. 190m to the south of the application site which was built c. 5 to 10 years ago. It supports a range of macrophytes including fools-water-cress (*Apium nodiflorum*), horned pondweed (*Zannichellia palustris*), ivy-leaved duckweed (*Lemna trisulca*), common duckweed (*Lemna minor*) and some non-native aquatics. Marginal species present included yellow flag (*Iris pseudacorus*) and common bulrush (*Typha latifolia*). Water is fed into the pond from Hazel Shrub House via a field drain and water quality is very good. Together with significant areas optimal terrestrial foraging and refuge habitat (e.g. rough grassland and woodland) and a lack of fish results in an HSI score of 0.867 which assesses the pond as supporting e*xcellent GCN* habitat suitability.

An irrigation pond P2 is located c. 70m east of the survey area boundary within the curtilage of the former Woodview Nurseries. Aerial photos and a site survey for a separate residential planning application for the Woodview Nurseries (Ref: DC/18/02184) found the pond received water off the buildings and was topped up via a water supply pipe. Water quality was poor with no aquatic plants and it was assessed as supporting average habitat suitability.

b) Reptiles

The application site supports a lack of tussocky grassland, scrub and ant hills indicating the grassland is periodically mown as shown by the difference in sward height and colour compared with areas of rough grassland to the south which support a tussocky structure and could support lizard and grass snake which have been recorded from Dodnash Wood CWS. Aerial photos from 2017 (Google Earth Pro) show that the site is periodically mown. The likelihood of significant populations of common reptiles such as slow-worm and common lizard being present within the application site is considered to be low though animals could be present within the wider grassland present at Hazel Shrub House. The pond in the south-west corner of the field provides foraging opportunities for grass snake.

4.3.3 *Bats*

a) Tree Roost Assessment

Four mature oak trees along the northern field boundary and another approximately midway along the eastern field boundary were assessed as supporting Moderate bat roosting potential.

b) Commuting and foraging habitat

The boundary hedgerows and woodland edge are well connected to linear features in the wider landscape and are likely to be used regularly by commuting bats, and therefore were assessed as offering *High* value bat commuting habitat (Collins, 2016). Habitats within or adjacent to the area surveyed also provide *High* value bat foraging opportunities (e.g., hedgerows, woodland, mixed scrub, rough grassland, and pond).

4.3.4 *Nesting birds*

The rough grassland offers good foraging habitat for birds of prey such as barn owl and kestrel (*Falco tinnunculus*) (Photos 4 and 6). A barn owl nest box is present on a tree in the far south-east corner of the field (Photo 12). The boundary hedgerows will offer nesting, song perch and foraging habitat for a range common bird species, in addition to providing a seasonal source of food (e.g. fruit and berries) for notable migratory

species such as fieldfare (*Turdus pilaris*) (Red Status, WCA1i) and redwing (*Turdus iliacus*) (Red Status, WCA1i).

The adjacent woodland (Dodnash Wood CWS) is likely to support numerous species of woodland bird.

4.3.5 *Badger*

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

4.3.6 *S. 41 list habitats and species*

a) Habitats

Boundary hedgerows H1 and H2, though species poor, support native shrub species and as such meet the qualifying criteria for a S. 41 list hedgerow habitat.

b) Species

The existing boundary hedgerows/trees and woodland edge provide suitable refuge/cover habitat for hedgehog, with the rough grassland supporting suitable foraging habitat for both hedgehog and brown hare (*Lepus europaeus*). Hazel dormice have been recorded in Dodnash Wood and may be present along the woodland edge.

Stag beetle (*Lucanus cervus*) have been recorded in the rough grassland, along hedgerow H1 and in other areas of the site. The landowners have created a stag beetle mound (Photo 13) close to the eastern field boundary and a small log pile exists adjacent to the field entrance (Photo 14). Both have the potential to support stag beetle larvae.

4.3.7 *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 sites are provided in Table 4.3; values are based upon the criteria in Table A3.1 and expert best judgements.

Table 4.3 Feature value based on geographic context

Feature	Value
Grassland, hedgerows, trees, mixed scrub, woodland and a pond	Local
Amphibians and reptiles	Local
Bats	Local
Nesting 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 developments, 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 construct a single dwelling, driveway, garage, parking, and gardens. Impacts relate to vegetation clearance of species-poor grassland and the excavation of footings and service runs.

The assessment and recommendations provide preliminary recommendations for mitigation, compensation and enhancements for the proposed development. They are based on the most recent site layout provided by Roger Balmer Design (Drawing No. 19029-05) and information available at the time of writing and should be updated accordingly as the scheme is subsequently amended.

5.3 FURTHER SURVEYS REQUIRED

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.

If suitable grassland, ruderal vegetation and scrub habitat re-establishes reptile surveys will be required.

5.4 ASSESSMENT OF IMPACTS

The EcIA 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 EcIA 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, ground-breaking and construction operations will result in the permanent loss of an area of permanent grassland as a result of the footprint of the buildings and areas of hard standing including the new driveway, whilst native hedgerow, woody shrubs and tree planting within grassland will result in further loss in time, though an understorey vegetation will persist. Retained habitats including areas of scrub, hedgerow and trees could be accidentally damaged during the construction works. Together these impacts are considered a negative effect at the local level.

The proposed new hedgerow and shrub and tree planting will deliver a positive effect when established.

b) Mitigation

Retained hedgerows, scrub, trees and grassland should be protected from damage with Heras (or similar) fencing during the construction phase.

c) Residual effects

The proposed development will result in a residual negative effect through the loss of grassland which will require compensation.

Given the relatively poor species richness of the grassland, the proposed hedgerow, shrub and tree planting will provide habitat for a greater range of wildlife (e.g. hazel dormice, amphibians, reptiles, nesting birds, bats and other mammals) once established. The proposed wildlife pond will provide habitat for native aquatic plants. Together these would be considered a significant positive effect.

5.6 AMPHIBIANS AND REPTILES

a) Potential impacts

Accidental disturbance of areas of retained scrub and hedgerows may result in injury and/or death of animals using the site at the time. In addition amphibians dispersing to and from the pond P1 and reptiles which may be present within areas of rough grassland to the south and adjacent to Dodnash Wood CWS could fall into open trenches resulting in entrapment and mortality.

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). These impacts would potentially be a significant negative effect upon a small number of animals at the local level.

Loss of habitats on site will negatively affect availability of poor quality foraging habitat for animals, though not considered significant at the local level. He proposed native shrub/tree planting belts will deliver increased areas of refuge and dispersal habitat once established.

b) Mitigation

The following measures will be implemented:

- The existing grassland 300mm high should be cut down in layers as follows:
  - ❖ A first cut to be taken to 150mm above ground level;
  - ❖ After at least 1 hours (preferably overnight), a second cut to ground level; and
  - ❖ Maintained near to ground level until works commence.
- During the construction phase, trenches should be filled on the same day as excavation where possible. Trenches left overnight should be either covered with ply/OSB sheets and any gaps filled with damp sharp sand or amphibian/mammal ramps/ladders (wooden planks set at an angle at the edge of each trench run) placed and all trenches checked daily;
- Footings and concrete slabs should be poured during the morning to ensure they have hardened off prior to evening to reduce the risk of animals encountering wet concrete;
- Any hand mixing of mortar or concrete will 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;
- Any excess cement/concrete will be poured into a concrete skip, so it can then set to prevent animals coming into contact.
- All building materials will be stored on bare ground or hard standing, or stored off the ground on pallets;
- Any waste or spoil stored on site temporarily will be stored on bare/hard ground or in skips to prevent amphibians or reptiles from seeking refuge;
- Should any animals be encountered they should be allowed to displace into retained habitat (e.g. boundaries) or carefully relocated.
- If any GCNs (Appendix A3) are encountered works must stop immediately and a qualified ecologist be contacted for advice on how to proceed.
- If utilised, installed gully pots for surface water drainage should be raised above ground level, sealed or covered with a fine grate cover to prevent entrapment issues. Roadside gullies, if used, should be situated ≥100mm from kerbs to maintain function while reducing the probability of animals falling in, OR a wildlife friendly kerb should be installed OR amphibian (gully pot) ladders must be installed into each gully pot[9].
- Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen[10] to prevent amphibians entering drains.

c) Residual effects

With mitigation implemented direct impacts upon animals will be avoided with no significant residual effect.

5.7 BATS

a) Potential impacts

i) Roosting bats

No impacts anticipated.

ii) Foraging and commuting habitat

Loss of a relatively small area of species poor grassland of *Low value* will reduce the extent of foraging habitat present locally is not ecologically significant. Accidental

[9] https://www.thebhs.org/the-bhs-amphibian-gully-pot-ladder
[10] https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/

damage to retained trees, scrub and hedgerows could have a negative effect at the local level.

The proposed wildlife pond and the native hedgerow, shrub and tree planting once established and mature would provide a significant positive effect at the local level.

iii) Light disturbance

Lighting during the construction and operational phases will result in impacts upon foraging behaviour and increase the risk of predation, which would affect foraging success for a small number of individuals, considered a negative effect at the local level.

iv) Roofing membranes

Research has shown bats can become entangled in modern breathable roofing membranes (BRMs) such as Tyvek and other woven membranes, causing injury or death to individuals (Waring *et al.* 2013). Use of these membranes in the new house may have a negative impact upon bats if pantile or plain/peg tiles are used. If slates or concrete interlocking tiles are to be used on the roof, then breathable membranes could potentially be used if no gaps >4mm are created between the tiles.

b) Mitigation

i) Roosting bats

None required.

ii) Foraging and commuting habitat

With the current site layout, it is not possible to avoid the loss of a low value foraging habitat, but temporary fencing should be used to protected retained habitats.

iii) Light disturbance

Exterior lighting (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon retained natural habitats, and should follow current guidance as necessary[11,12]:

- *Type of lamp (light source)*: Light levels should be as low as possible as required to fulfil the lighting need. Lamps 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 hedgerows. 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'.

[11] https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting

[12] www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

iv) Roofing membranes

Breathable membranes should not be used in any roofing works where handmade pantiles or plain tiles are proposed; traditional Type 1F roofing felt or a breathable sarking board (e.g. Hunton Sarket or Pavatex Isolair) must be used. If slates or interlocking pantiles or machine-made plain tiles are used, then a modern BRM could be used if gaps less then 5mm exist between tiles.

c) Residual effects

There will be a minor negative residual effect through the loss of foraging habitat but once the gardens and proposed native hedgerows, and the shrub and tree planting belts have established there will be a significant positive effect through increased extent and quality of bat commuting and foraging habitat at the local level.

5.8 Hazel dormouse

a) Potential impacts

As hazel dormice are present within the Dodnash Wood CWS then there is a possibility of them inhabiting the boundary hedgerows and area of scrub by the proposed site entrance. Therefore, impacts could occur from the accidental damage to areas of scrub and hedgerows which could in turn result in the harm to animals. Once the site is completed, any increased risk of cat predation could also impact upon individual. Together these impacts would be considered a significant negative effect at the local level.

The proposed native shrub and tree planting belts could deliver a significant positive effect at the local level is suitable species which provide food and cover are chosen (see section 5.13).

b) Mitigation

If it is assumed that hazel dormice are present locally within the hedgerows/scrub areas the proposed native shrub and tree planting belts should have a high proportion of thorny species such as hawthorn, cherry plum, blackthorn and wild privet on the outside edge to prevent/discourage cats from entering. Key food species could be located within the centre of the belts. Bramble should be allowed to establish within the planting belts to provide seasonal food as well as areas to nest.

c) Residual effects

There will be no significant residual effects from the proposed development. The proposed landscaping once established would deliver a positive effect through increased availability of potential hazel dormice habitat.

5.9 NESTING BIRDS

a) Potential impacts

No vegetation clearance of suitable bird nesting habitat is proposed (e.g. tree, hedgerow and/or scrub clearance). However, working machinery could accidentally damage areas of scrub or hedgerows and if undertaken during the nesting season (1st March to 31st August) it could result in the injury or death of nesting birds and damage to active nests and eggs considered a negative effect at the local level.

The permanent loss of areas of grassland under the footprint of the dwelling, garage, stables, driveway and menage will result in loss of bird foraging habitat for raptors such

as barn owl and kestrel, insectivores and seed eaters considered a negative effect at the local level.

Increased cat predation could occur as a result of the proposed development which is not considered significant for the scheme proposed.

b) Mitigation
Use of temporary fencing to protect areas of dense scrub by the proposed site access and existing hedgerows and trees.

The proposed native shrub and tree planting should include a proportion of thorny species to reduce cat predation risks.

c) Residual effects
With implementation of prescribed mitigation impacts upon nesting birds will be avoided. The significant landscape planting of native shrubs and trees will deliver a positive effect once established.

5.10 OTHER S. 41 LIST SPECIES

a) Potential impacts
Vegetation clearance, ground-breaking and construction activities will result in losses of foraging habitat within the grassland areas which will be disturbed. Accidental disturbance to dense scrub and hedgerows could impact refuge (including potentially for overwintering) and nesting habitat for hedgehog, with potential entrapment, injury and mortality of individuals due to presence of trenches as well as caustic and building materials.

Erection of ecological barriers (e.g. timber panel fencing) would reduce dispersal capability negatively impacting fitness and recruitment rates. However, as no such fencing is proposed no impacts are predicted.

b) Mitigation
As per section 5.5 – use of protective fencing for retained hedgerows.

During construction, concrete should be poured early in the day or covered with ply boarding or membrane overnight to prevent hedgehog coming into contact. Trenches should be covered overnight and water levels maintained at a minimum.

The use of close board fencing (as proposed) will be avoided with a single gate proposed for an access path to the front door, with native species-rich hedgerows and shrub planting belts proposed. Any gates should be raised off the ground by a minimum of 130mm to allow hedgehogs to access under them.

c) Residual effects
Direct impacts upon hedgehog will be avoided with no significant residual impacts.

5.11 COMPENSATION

Residual effects relate to the loss of grassland and the associated loss of low value foraging habitat for amphibians, bats (e.g. noctule feeding on cockchafers) birds and hedgehogs.

Lawn areas for the proposed new dwelling could be seeded or turfed with a suitable flowering lawn seed mixture[13] or turf[14], following supplier guidance on creation and long-term management. The increased range of nectar rich species the lawns contain will in turn benefit invertebrates and therefore also foraging birds, hedgehog and bats.

Wildflower rich corridors/margins (up to 6m wide) could be created adjacent to the eastern, southern, and western boundaries of the new to create habitat/wildlife corridors for insects, amphibians, reptiles and small mammals. These could be sown with a general-purpose wildflower and grass mix[15].

To compensate for loss of the grassland which may be used by foraging raptors additional rough grassland to the south of the application site could be left to grow long and tussocky . Allowing thick, matted, tussocky areas with a dense litter layer (c. 70mm deep) to develop will provide a habitat for nesting field voles and other small rodents.

Longer areas should be 'topped' to a height of no less than c. 200mm every other year in late July or August[16]. Small patches of scrub habitat could also be allowed to establish, creating a greater mosaic of habitats within the rough grassland which would provide cover for small mammals.

5.12 CUMULATIVE EFFECTS

The Babergh District Council planning website was searched on the 18 December 2020 with a 1km buffer dating back a minimum of two years. The search returned numerous householder applications and minor residential applications. Refused and withdrawn applications were not considered in relation to cumulative ecological effects. Applications considered relevant to the current application are summarised below:

- Permission was granted (DC/19/02343) (outline planning permission - submission of details) under (B/16/01051) for the erection of a two-storey dwelling (appearance, landscaping, layout and scale). No ecology report has currently been submitted with the application.
- A decision is pending on a reserved matters application (DC/20/04739) regarding the layout, scale, access, landscaping and design of 2 new detached dwellings at Holly Oak, Hazel Shrub, Bentley. The application relates to a previously refused application (DC/19/05429) and subsequent appeal (APP/D3505/W/20/3249004). No ecology report has been submitted with the application.
- A decision is pending on an application (DC/20/04409) for the demolition and rebuild of an agricultural barn to form two holiday lets and the erection of a two-storey storage building with associated works at Little Dodnash Farm, Bergholt Road, Bentley. An ecology report submitted with the application concluded that "*Appropriate mitigation measures have been proposed to avoid and reduce potential effects on great crested newt, bats and breeding birds. Further recommendations have also been made regarding ecological enhancements to*

[13] E.g. https://www.bostonseeds.com/products/wildflowers-seed/wildflower-seed-mixtures-20/bs12m-low-growing-wildflower-meadow-seeds.html? or https://wildseed.co.uk/mixtures/view/56/flowering-lawn-mixture

[14] https://www.wildflowerlawnsandmeadows.com/wild-flower-turf/extra-floristic-low-flowering-lawn-turf-with-wild-orchid-seed/ or https://www.turfonline.co.uk/meadowmat/species-rich/.

[15] https://wildseed.co.uk/mixtures/view/4

[16] https://www.barnowltrust.org.uk/how-to-manage-land-for-barn-owls/

be incorporated into the proposed scheme which would potentially deliver net benefits for biodiversity."

Due to the nature of the results returned, no potential cumulative effects are identified.

5.13 ENHANCEMENT OPPORTUNITIES

Recommended mitigation and compensation measures will address biodiversity losses from the scheme. To be consistent with local and national planning policy, development schemes should deliver biodiversity enhancements. Proposed landscaping will also deliver biodiversity benefits as follows:

1. *Wildlife pond.* A rain collection pond will deliver wildlife benefits if it is designed with a marginal shelf (c. 150mm deep) with a gently slope (1:5) to allow mammals to safely access to drink. A deeper area of 1 to 1.5m deep should be included to allow some wet areas even in dry years. The pond should be planted with native aquatic plants. water mint and water forget-me-not (*Myosotis scorpioides*) should be planted along the margins with emergents such as sweet rush (Acorus calamus), flowering rush (*Butomus umbellatus*) and yellowflag (*Iris pseudacorus*) in slightly deeper water. Floating leaved plants such as white water lily (*Nymphaea alba*) and broad-leaved pondweed (*Potamogeton natans*) should be planted to help provide shade over some of the pond surface.

2. *Native woody shrub and tree planting belts*. The proposed planting belts must use a minimum of 8 native broad-leaved species including some evergreens (e.g. holly). To maximise its value for hazel dormouse shrub and tree species which provide food should be included such as hazel, sweet chestnut, hawthorn, guelder rose, dog rose, blackthorn, common dogwood and wild cherry should be included along with wild honeysuckle (*Lonicera periclymenum*) as dormice use the plant for lining their nests.

   Once established, the hedgerows could be managed with regard to hazel dormice[17]. Management would include cutting on longer rotations (e.g. every three years) and cutting no more than one third of a hedge each year, allowing a dense basal growth to establish, encouraging outgrowths of bramble and leaving wide uncut margins with tussocky grass to provide nesting material[18].

3. *Native hedgerow planting*: Native species-rich hedgerows could be planted along the south side of the driveway and/or yard area. Thorny species such as common hawthorn and/or bird cherry (*Prunus cerasifera*), which provide food for birds and mammals and help reduce cat predation, should comprise c. 50% of new planting. Bird cherry is much less invasive compared to blackthorn which will readily sucker.

   To enhance the species diversity of the hedgerow, a minimum of five of the following should also be planted: hazel, field maple, common dogwood, holly, wild privet (*Ligustrum vulgare*), spindle (*Euonymus europaeus*), hornbeam; (*Carpinus betulus*), guelder rose, dog rose.

   Additionally, Dutch elm disease resistant elm cultivars[19] could be planted within new hedgerows to provide habitat for invertebrates such as the white-letter

[17] http://www.hedgelink.org.uk/_dormice_hedges_leaflet.pdf
[18] https://ptes.org/hedgerow/managing-hedgerows-top-tips
[19] https://resistantelms.co.uk/elms/ordering/

hairstreak (*Satyrium w-album*) butterfly, the caterpillars of which feed on the leaves.

In addition to the proposed site landscaping further biodiversity enhancements could be delivered. To deliver a significant BNG a minimum of 4 of the following 7 enhancement suggestions should be implemented on or off-site.

4. *Traditional orchard:* A small orchard (minimum of 6 trees) could be planted within the proposed garden or along the southern or western edge of the proposed planting belts. Suffolk and Essex heritage cultivars[20] could be planted. This would enhance the biodiversity value of the site (e.g. pollinators and windfall fruit for birds, mammals, and invertebrates) and provide the landowners with a seasonal harvest.

5. *Scrub habitat*: Allowing scrub to develop along the edge of the woodland, either through new planting or natural regeneration (or both), would create a valuable 'transitional' habitat between woodland and open grassland, in the process providing food, shelter and nest sites for birds, mammals and invertebrates, as well as offering suitable habitat for flowering plants.

   Appropriate management of scrub to maximise the biodiversity value and prevent succession to woodland occurring could include rotational cutting of small areas each year (e.g. 1/15th total area/year), low-intensity grazing (e.g. 0.25 animals/ha) and/or occasional flailing (small areas). [21] The greater heterogeneity of age, structure and species composition of the scrub habitat, the greater the benefit to wildlife.

6. *Grass snake egg laying heaps*: Composting areas/grass snake egg laying heaps (Appendix A4) could be created close to the wildlife pond with adjacent log/brash piles to provide refuge habitat for other reptiles and amphibian species.

7. *Integrated swift nest boxes*: Three to six integrated swift bricks could be incorporated into the walls of the new dwelling just under the eaves, preferably on the north or east side of the dwelling[22]. Homeowners should be supplied with material and guidance on how to attract an initial colony[23].

8. *Bat* boxes: Three bat boxes (1x Vincent Pro crevice box, 1x Kent Bat box and 1x WoodStone multi chamber bat box) (Appendix A6) could be erected on suitable mature oak trees (south facing) within the northern or eastern field boundaries to provide roosting opportunities.

   Wall mounted boxes such as the Schwegler 1FE and the Ibstock integrated box could be installed on or integrated into the walls of the new dwelling (Appendix A6).

9. *Hazel dormouse nest box:* Hazel dormouse nest boxes[24] could be erected on suitable trees or shrubs within the existing hedgerows. Nest boxes should be erected approximately 1.5m above ground, with the entry hole facing inwards (preventing bird occupancy) and in an area with low human disturbance (exact location to be agreed with suitably experienced ecologists).

[20] https://www.applesandorchards.org.uk/buy-fruit-trees/suffolk/

[21] https://www.rspb.org.uk/farming-advice/scrub-management-advisory-sheet.pdf

[22] https://swift-conservation.org/Leaflet-SwiftNestBrick-sinstallation-suppliers-small.pdf

[23] https://swift-conservation.org/swiftcallsinstructions.pdf

[24] https://www.arkwildlife.co.uk/product/dormouse-house

10. *Stag beetle loggery*: Stag beetle log loggeries/pyramids (Appendix A7) could be constructed (using suitable broadleaved logs – **not conifers**) and be positioned within shaded corners and edges of the field (under tree canopy).

    Loggeries can also support a range of fungi, dead wood invertebrates and solitary bees, which, in turn, will attract foraging small mammals, birds, amphibians and reptiles.

Peat based composts will not be used for any planting or landscaping in order to preserve existing carbon stores and avoid damage to sensitive habitats.

5.13 CONCLUSIONS

With avoidance, mitigation and compensations measures suggested, the scheme will result in NNL of biodiversity, whilst enhancements could be implemented to achieve a BNG in accordance with the National Planning Policy Framework and legislation.

Measures proposed should be secured through appropriate planning conditions as per the British Standard (BS 42020:2013[1]). These could include conditions specific to breeding birds (e.g. BS 42020:201 D.3.2.1) or a Biodiversity Method Statement (e.g. BS 42020:2013 D.2.1) or equivalent document used to detail mitigation, compensation and enhancement implementation and associated monitoring.

6 References

CIEEM (2017) Guidelines for Ecological Report Writing. Second edition. Chartered Institute of Ecology and Environmental Management, Winchester.

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

CIEEM (2019) Advice Note: on the lifespan of ecological reports and surveys.

CIRIA, CIEEM and IEMA (2016) Biodiversity Net Gain: good practice principles for development.

Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition), Bat Conservation Trust, London.

Eaton, M.A., Brown, A.F., Noble, D.G., Musgrove, A.J., Hearn, R., Aebischer, N.J., Gibbons, D.W., Evans, A. and Gregory, R.D. (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man. British Birds 102, pp296-341.

Bright, P., Morris, P. and Mitchell-Jones, A. (2006) The dormouse conservation handbook, 2nd Edition, English Nature publication

JNCC (2010) Handbook for Phase 1 habitat survey – A technique for environmental audit, JNCC, Peterborough.

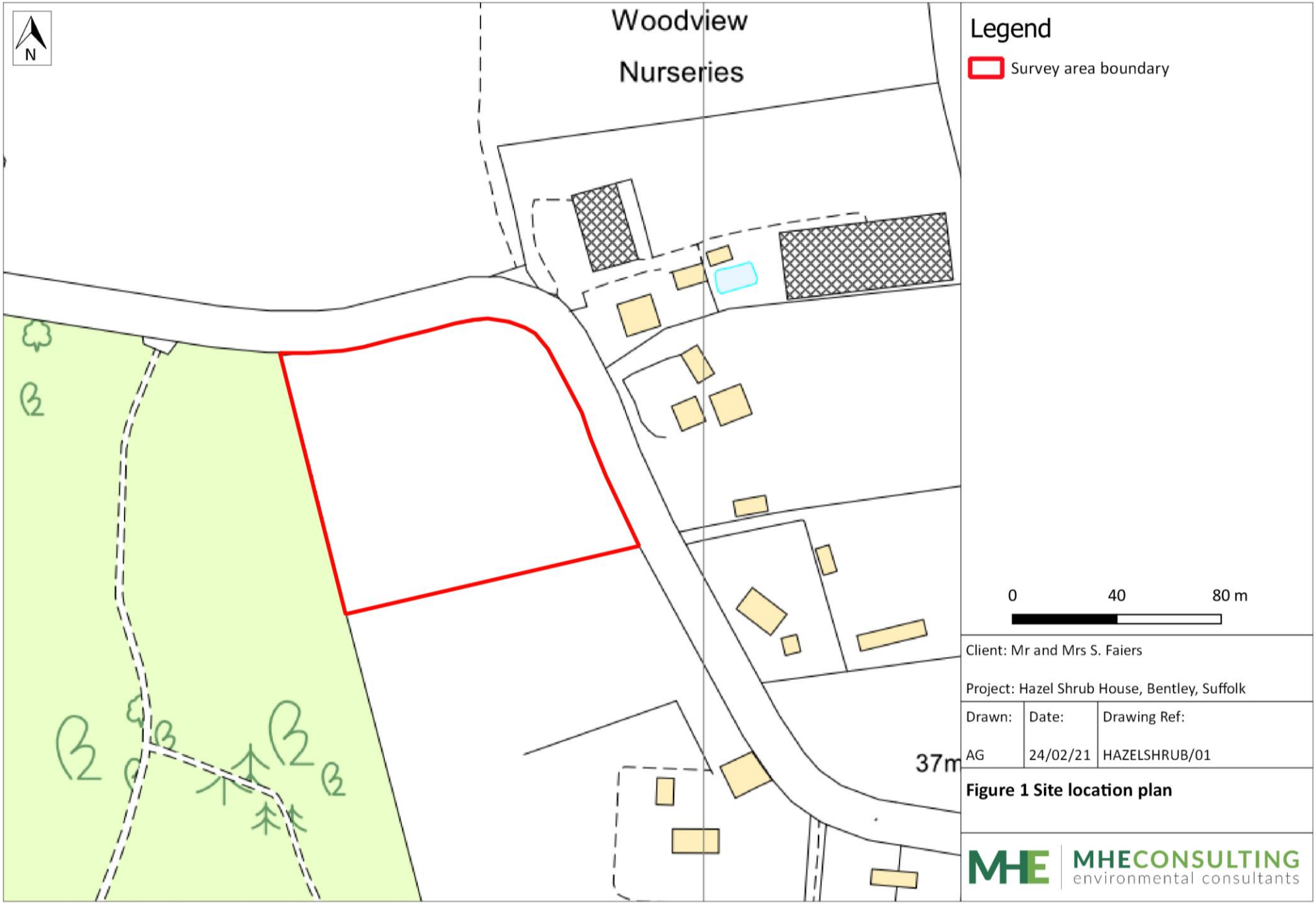
Muir, D. (2012), Amphibians in drains project report summary. Biodiversity News, 59, 16-18.

Oldham, R., Keeble, J., Swan, M., and Jeffcote, M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4), 143-155.

Scottish Badgers (2018) Surveying for Badgers: Good Practice Guidelines. Version 1.

Waring, S., Essah, E., Gunnell, K. and Bonser, R. (2013) Double jeopardy: the potential for problems when bats interact with breathable roofing membranes in the United Kingdom. Architecture & Environment, 1 (1). pp. 1-13.

Figures


N
Woodview
Nurseries
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Legend
Survey area boundary
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Client: Mr and Mrs S. Faiers
Project: Hazel Shrub House, Bentley, Suffolk
Drawn: AG
Date: 24/02/21
Drawing Ref: HAZELSHRUB/01
Figure 1 Site location plan
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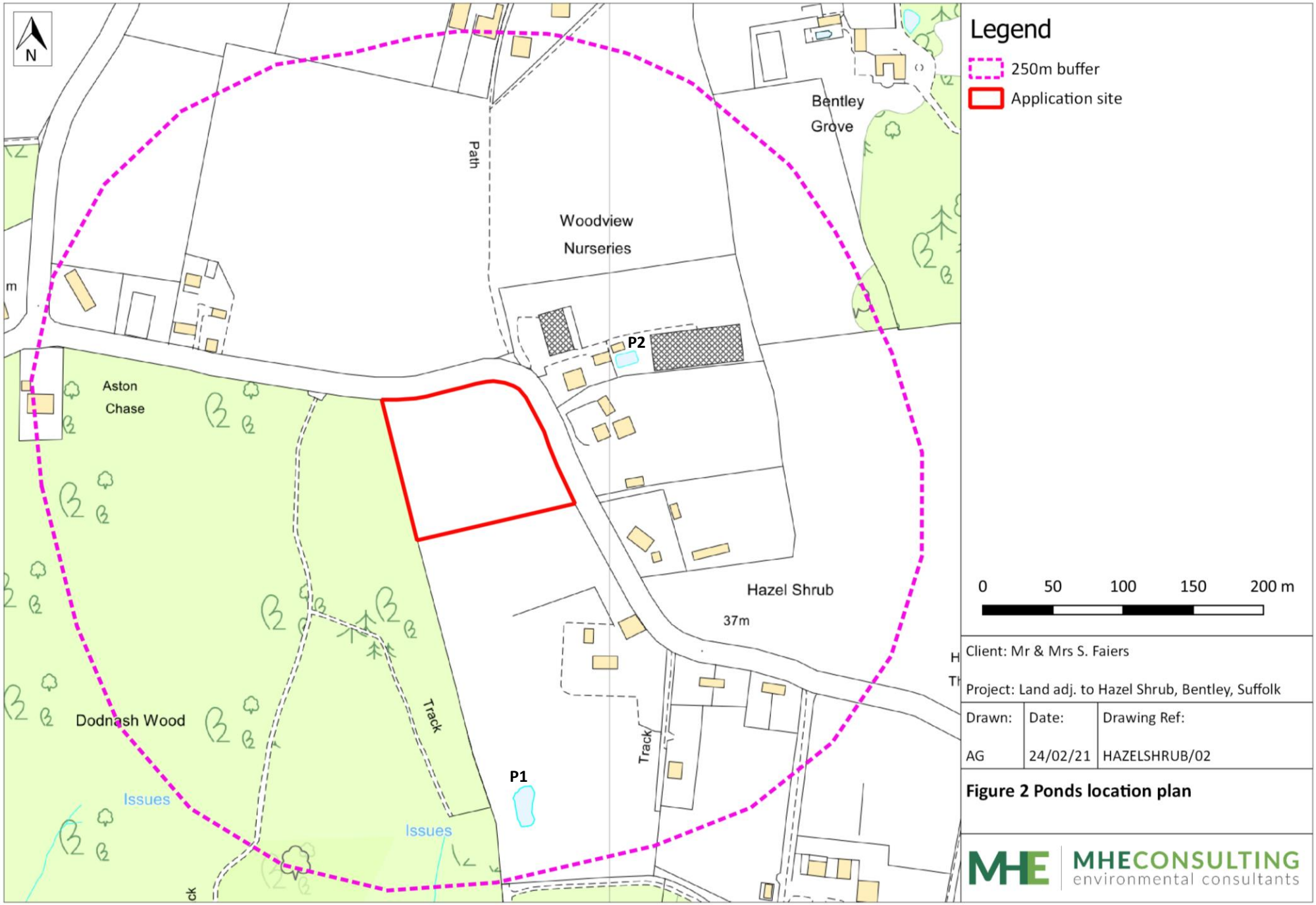

Client: Mr & Mrs S. Faiers

Project: Land adj. to Hazel Shrub, Bentley, Suffolk

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Figure 2 Ponds location plan

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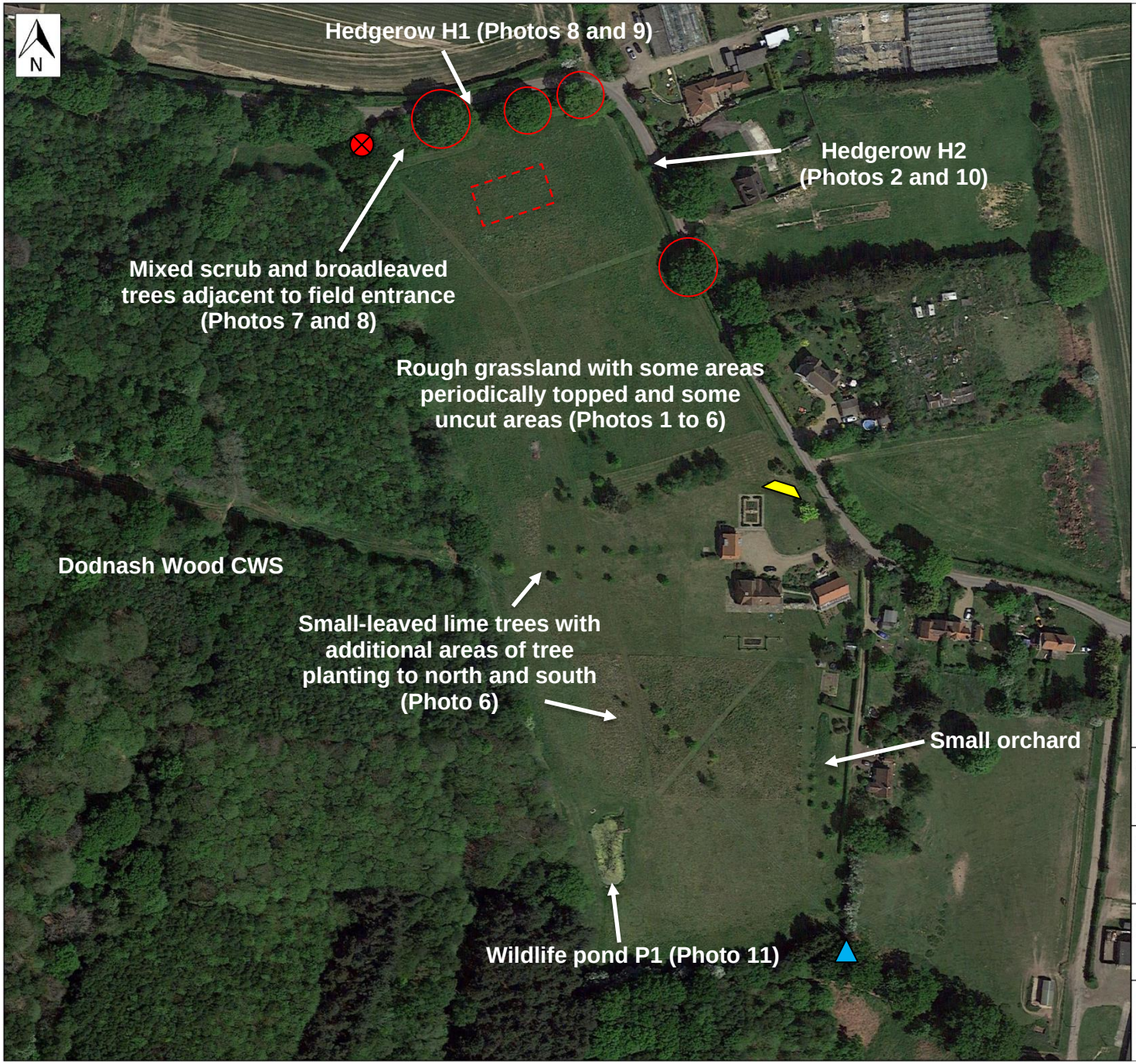

Legend

- Location of new dwelling (estimate)
- Mature oak tree with Moderate bat roosting potential
- Barn owl nest box
- Stag beetle mound
- Log pile

0 45 90 135 m

Client: Mr & Mrs Faiers

Project: Land adj. to Hazel Shrub, Bentley, Suffolk

Drawn:	Date:	Drawing Ref:
AG	13/01/21	HAZELSHRUB/03

Figure 3 Habitats plan

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Appendices

Appendix A1 Photos

Photo 1 View of rough grassland field from the north-west corner of the field- looking south-eastwards.

Photo 2 Propbable location of the new dwelling in a central location towards the northern field boundary.

Photo 3 View of rough gassland from a central location along eastern field boundary - looking northwards.

Photo 4 Unmanaged area of grassland close to the western field boundary- edge of Dodnash Wood visible.

Photo 5 Periodically mown grass strip adjacent to Dodnash Wood preventing scrub encroachment.

Photo 6 View of trees extending across the centre of the field

Photo 7 Area of mixed scrub along northern boundary adjacent to the field entrance

Photo 8 View of mixed scrub, mature oak trees and roadside section of hedgerow H1

Photo 9 Hedgerow H1 along northern boundary of field

Photo 10 Hegderow H2 and mature oak trees along eastern boundary of field

Photo 11 Wildlife pond P1 in the south-west corner of the field

Photo 12 Barn owl box on a mature English oak tree in the far south-east corner of the field

Photo 13 Log pile adjacent to field entrance

Photo 14 Stag beetle mound- deadwood (tree roots and logs) covered with soil and grass

Appendix A2 EcIA criteria

A2.1 General criteria for geographic context/value

Designation	Example
International	• 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	• 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	• 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. • A sustainable population of a BAP species not included in the 'national' category above for which a county Action Plan exists.
Local	• 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 A3 GCN identification postage

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ADDRESS | Mill House, Homersfield, Harleston, Suffolk IP20 0ET
TELEPHONE | 01986 788791
EMAIL | millhouseecology@gmail.com

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

Appendix A4 Grass snake egg laying heap

Creating grass snake egg-laying heaps

RAVON ARG UK

Introduction

Identification

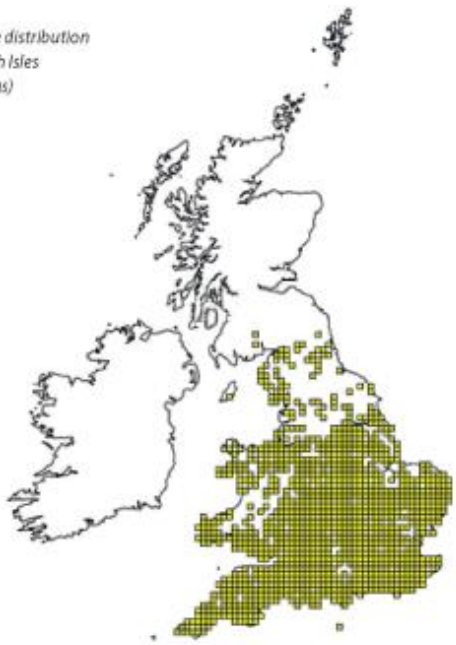
The grass snake *Natrix helvetica* is the largest British native snake, and can grow to over 1 metre in length. Grass snakes range from grey to green or brown in colour. They have a distinctive yellow or cream collar, bordered to the rear by contrasting dark markings. There is a series of dark bars running along the flanks and some individuals have dark spots on the back as well. Often found near water, grass snakes can sometimes be spotted swimming, or hunting for favoured prey species, which are mainly amphibians. Grass snakes are non-venomous, but they can exude an unpleasant smelling musk if caught. They can live for up to 15 years in the wild.

Life cycle

In common with other native reptiles, grass snakes hibernate over winter from October to March, emerging as the weather warms in early spring to replenish their energy reserves by feeding and basking. During April and May they find a mate, and in June or July females lay 10 to 40 leathery white eggs, often in warm compost, piles of leaves or manure heaps, which helps the eggs to incubate and hatch. Several females may use the same egg laying spot, so it may be possible to find large numbers of eggs in a suitable heap. After 6 to 10 weeks the pencil sized (14-22 cm long) young grass snakes emerge. Hatchlings cut their way out of the egg with an egg tooth, which they lose once they have emerged. It then takes three to four years for the young grass snakes to reach adulthood and sexual maturity.

Hatched grass snake eggs

Grass snake distribution in the British Isles (© NBN Atlas)



Distribution and habitat

Grass snakes are widely distributed across much of England and Wales, though they are less commonly recorded in the North East of England, and Scotland. Generally, grass snakes prefer to live near water, where they can readily find their amphibian prey; but two other essential habitat features are egg-laying sites and places to hibernate. Natural grass snake egg-laying sites include heaps of organic material, or rotted tree stumps. Many grass snakes, however, take advantage of human activities and lay their eggs in manure or compost heaps. As a result, grass snakes are sometimes seen near riding stables and allotments during the spring and summer months. Over-wintering or hibernation occurs in dry, frost free and relatively undisturbed locations. Hibernation sites may be located in burrows or holes, heaps of rubble or wood, or dilapidated stone walls or buildings. In some areas, a vegetated earth bank or hedge bank, sea wall or even a road or rail embankment may be used.

For more information about grass snakes

Amphibian and Reptile Groups of the UK (ARG UK) - www.arguk.org
Amphibian and Reptile Conservation - www.arc-trust.org
Froglife - www.froglife.org

If you find a dead or diseased grass snake please report the incident to the Garden Wildlife Health Project (GWH) - **www.gardenwildlifehealth.org.**
GWH investigates disease threats to British wildlife.

If you spot a grass snake at any stage of its life cycle (eggs, juvenile, adult), or even a shed skin, please share the information either through Record Pool - **www.recordpool.org.uk,** or your preferred biological recording scheme.

ARG UK

The Amphibian and Reptile Groups of the UK (ARG UK) is a network of volunteers committed to the conservation of native amphibians and reptiles. ARG UK is a registered charity (no. 1165504).

Acknowledgements

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Photo credits: John Baker, Nicola Devine, Jelger Herder, Tariq Stark, Theodoor Heijerman & Warren Photographic

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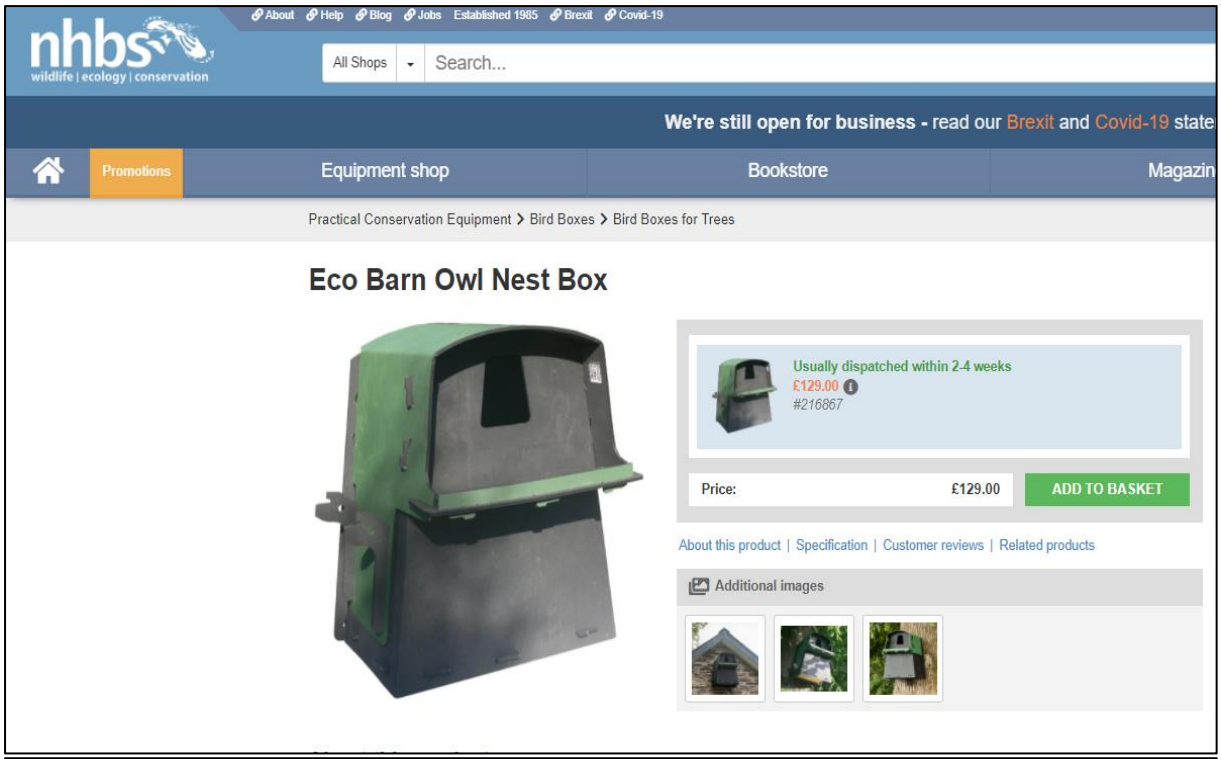
GWH Garden Wildlife Health

Appendix A5 Raptor Boxes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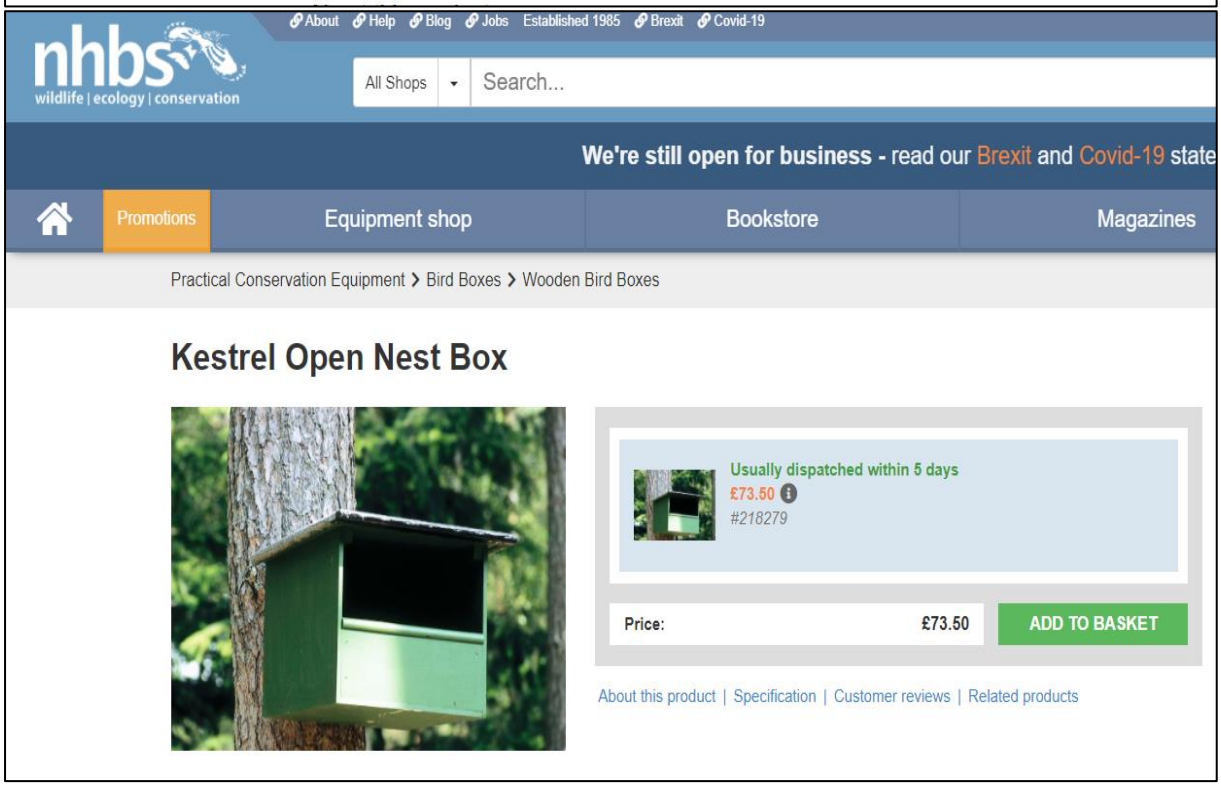
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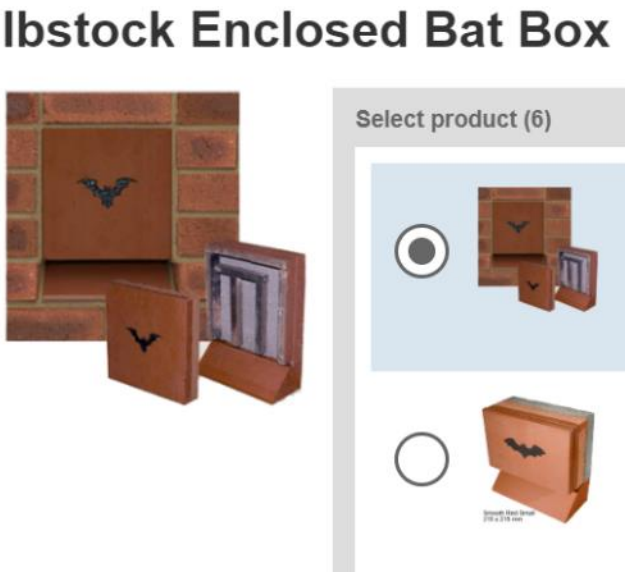
Appendix A6 Bat boxes

WoodStone Large Multi Chamber bat box



Vincent Pro box

Schwegler 1FE

Appendix A7 Stag beetle loggery

people's trust for endangered species

Build a log pile for stag beetles

Stag beetles are one of the largest insects in the UK. They are in decline across Europe but there are many simple things you can do to help.

How you can help stag beetles

Stag beetles don't move far from where they emerge. Although males can fly up to 500m, most female stag beetles don't travel more than 20m and return to where they emerged to lay eggs. This means populations are vulnerable to becoming isolated and if there isn't enough dead wood nearby, dying out all together.

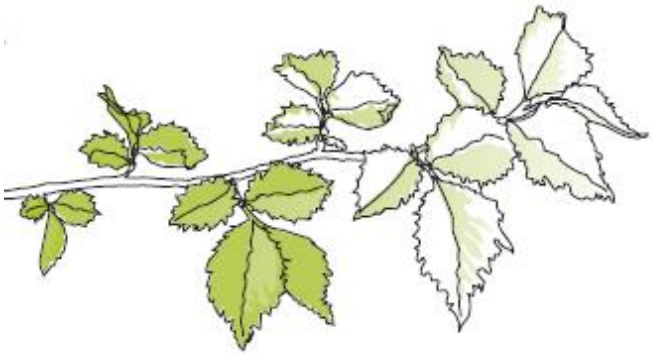
Private gardens are very important habitats for stag beetles. They rely on decaying wood that is in contact with the soil, both to feed on as larvae and in which to lay their eggs.

You can help by building a log pile in your garden to ensure that there is a good supply of suitable dead wood nearby for females to lay their eggs in.

Images: Peter Cox, Ben Andrew, PTES

Stag beetle facts

- They are Britain's largest native terrestrial beetle
- The larvae develop underground in rotting wood for several years
- The adult only lives for a few weeks in the summer with the sole purpose of finding a mate
- Adult beetles don't eat but rely on the fat stores built up during their larval stage
- The male's antler-like jaws are used to fight off rival males



Please create a log pile for stag beetles and map it at **www.ptes.org/stagbeetle**. For more tips please see over.

How to make a log pile

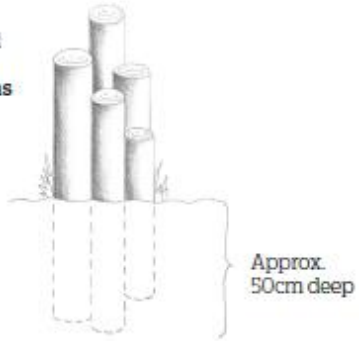
people's trust for endangered species

- Log pyramids can be built at any time of year
- Use wood from any broadleaved tree
- The logs should be at least the thickness of an adults arm
- Site the logs in partial shade if possible to prevent them drying out
- Partially bury the logs in the soil so that they don't dry out
- Allow plants to grow over the log pyramid to retain moisture and provide shade

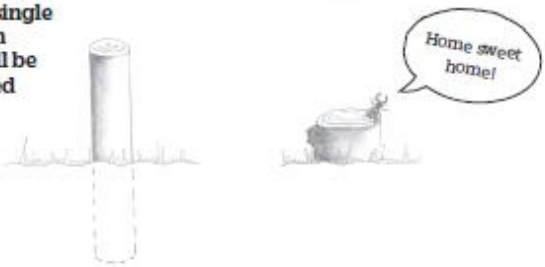
Your log pile will also benefit a range of other species including fungi, dead wood invertebrates and the animals that feed on them. It will be a great place for foraging small mammals, basking reptiles and potentially solitary bees.

Large log pyramid suitable for parks and large gardens

Log pyramid suitable for small gardens



Or, if space is limited, a single log on or in the soil will be appreciated



More tips for stag beetle friendly gardening

- Leave tree stumps in place if possible; they can become garden features with plants growing over them
- Try not to use pesticides
- Keep a lid on your water butt as stag beetles are known to fall in and drown
- Avoid using polythene sheeting to control weeds. Newly emerging stag beetles can get trapped beneath it in spring and die
- If you find larvae in the bottom of rotten fence posts and need to move them, dig a hole elsewhere in your garden and put them in together with some of the rotting wood from the original site. Cover loosely with soil

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