GEOSPHERE ENVIRONMENTAL

PRELIMINARY ECOLOGICAL APPRAISAL REPORT

REPORT NUMBER: 7868,EC,PEA,TC,AG,AC,KL,01-11-23,V1

SITE: PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

DATE: 01/11/2023

DOCUMENT CONTROL SHEET

Report Number:	7868,EC,PEA,TC,AG,AC,KL,01-11-23,V1
Client:	Landbridge Property LLP c/o Peter Wells Architects
Project Name:	PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU
Project Number:	7868,EC
Report Type:	Preliminary Ecological Appraisal
Status:	Final
Date of Issue:	01 November 2023

Issued By:

Geosphere Environmental Ltd, Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ.
T: 01603 298 076 / 01473 353 519. W: www.geosphere-environmental.co.uk

Confidentiality, Copyright and Reproduction:

Time limit of reliance:

Please note that the reported surveys were conducted on the date(s) stated in the report and that it represents site conditions at the time of the visit. The findings and recommended mitigation are based upon these conditions. If site conditions change materially after the site survey, the original report cannot be relied upon and will need to be updated. Ecological reports can typically be relied on for 18 to 24 months from the date of survey.

Prepared By:	Reviewed By:	Authorised By:
Tom Cox Senior Arboricultural and Ecological Consultant	Alanna Cooper Principal Ecologist	Katie Linehan Technical Director of Ecology
Arabella Graves Graduate Ecologist		

Version Record:

Version	Date	Document Details	Prepared By	Admin
1	01-11-23	Original Version	TC/AG	CD

Executive Summary

Report Description		This Preliminary Ecological Appraisal report has been prepared by Geosphere Environmental Limited for Landbridge Property LLP and relates to proposed residential development of the site at PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU. The purpose of this report is to identify potential ecological constraints to development, particularly in relation to potential legally protected species onsite, confirm the need for further survey work to confirm all baseline ecological conditions, if necessary, and highlight opportunities for ecological enhancement.
Summary of Main Findings		The site comprises modified grassland, other neutral grassland, hedgerow, hedgerow with trees, vegetated garden, a ditch which was dry at the time of the survey and buildings. The findings of the survey confirm that the habitats onsite have the potential to support breeding birds, foraging, and roosting bats, foraging badger, hedgehog, a low population of reptiles and great crested newts. The site is not considered suitable for rare plants, invertebrates, otter, water vole or hazel dormouse.
Ecological Constraints		The constraints to development will be the removal of habitats considered suitable for protected species.
Avoidance Measures & Timings of Works to Reduce Impact		**Birds**: Given the onsite presence of potential bird nesting habitat, any clearance of vegetation, or buildings that support suitable nesting features, should be timed to avoid the bird breeding season (March-August inclusive). If this is not possible, these habitats can only be removed following confirmation by a suitably qualified Ecologist, that they are not in active use by nesting birds. **Roosting bats:** Given the onsite potential presence of roosting bats onsite if the buildings are to be removed or adapted then further survey work will be required. **Foraging bats:** There is onsite potential habitat for foraging habitat which if it is to be lit above the existing level an appropriate lighting strategy will be necessary and further surveys conducted. Additionally, if this habitat is to be removed then further surveys will be required.
Further Survey Work Required		The following are recommended at the appropriate time of year to establish an ecological baseline: • Surveys for foraging bats (April to October inclusive). • Detailed Preliminary Roost Assessment of the buildings onsite to fully assess external features (with endoscope where appropriate) followed by bat roost activity surveys on B2, B3, B4, B5 and B9 restricted to May to September inclusive. • Sign up to the GCN district level licence, alternatively additional survey effort will be required to facilitate a site-specific development licence if GCN are confirmed present within local ponds. • Grassland survey at a more appropriate time of year (recommended between

		May and August) to determine accurate grassland classification and species-diversity.
Biodiversity Enhancement Opportunities		The following has been recommended for consideration within the final development scheme: • Planting of native plant species beneficial to wildlife should be incorporated into the final design. This will provide additional habitat for invertebrates, which will in turn provide a food source for reptiles, birds, bats, and hedgehog. • The final development plan should incorporate bat and bird boxes into the scheme. This will provide additional roosting and nesting habitats for bats and birds post-development. • Log piles should be placed in connectivity to the boundary vegetation onsite, enhancing the habitats onsite for both reptiles and invertebrates post-development. • To help achieve biodiversity net gain on the site, areas of natural habitat would need to be included within the scheme. Metric calculations will likely be a requirement of planning, to show that net gain can be achieved. • Hedgehog friendly fencing should be used for any residential gardens to allow hedgehogs to continue to access the site.
Conclusions		Provided the recommendations within this report are followed and the mitigation hierarchy of avoidance, mitigation, compensation, and enhancement is implemented throughout the detailed design process, potential negative effects from development on important ecological features will be negligible.

CONTENTS

CONTENTS

1. INTRODUCTION

1.1 Purpose

This Preliminary Ecological Appraisal (PEA) report has been prepared by Geosphere Environmental Limited for Landbridge Property LLP and relates to the assumed residential development of the site at PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU for which outline planning permission will be sought. The purpose of this report is to:

- Identify if important ecological features are present that may be affected by development proposals.
- Determine if further survey work is necessary, and if so, provide detailed scope for any further survey and assessment that may be required to support a planning application.
- Highlight opportunities for ecological enhancement.

Any limitations and conditions pertaining to the report are stated within Appendix 1, with a full list of technical references provided within Appendix 2.

1.2 Site Description

The site occupies an area of approximately 2.5 hectares (ha) and is located around National Grid Reference TM3022073117. The indicative development boundary is shown on Figure 1 below:

Figure 1 - Indicative site boundary

1.3 Proposed Development

The report relates to the assumed residential development of the site. A development plan has not yet been produced for the site.

2. LEGISLATIVE AND POLICY CONTEXT

2.1 Current UK Legislation

The main legislation that applies to ecological issues within England and Wales is as follows:

- The Environment Act 2021 Act became law on 9 November 2021 and introduces a framework to improve and protect the natural environment, overseen by the newly created Office for Environmental Protection. The Act introduces new statutory requirements, including the duty for local authorities to create new local nature recovery strategies. The Act also introduces a new mandatory requirement for developments to achieve measurable biodiversity net gain. A two-year transition period for this requirement is included in the Act, with provision for secondary legislation to set a date for the requirement to come into force. The government has confirmed this will be required for small sites such as this from April 2024 onwards (ref.**R.1**). Once in force, all planning permissions in England (subject to exemptions) must be granted subject to a new general pre-commencement condition that requires approval of a biodiversity gain plan. The planning authority would only approve the biodiversity gain plan if the biodiversity value attributable to a development exceeds the pre-development biodiversity value of the onsite habitat by 10%.
- The Conservation of Habitats and Species Regulations 2017 (as amended) transposes European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (formally the EC Habitats Directive) into national law. Under the regulations, public bodies have a duty in exercising their functions to provide for the protection of 'Habitats Sites' and 'European Protected Species' (EPS).
- The Wildlife and Countryside Act 1981, (WCA) (as amended) provides detail on a range of protection and offences relating to wild birds, other animals, and plants. The level of protection depends upon which Schedule of the Act the species is listed on. Licences are available for specific purposes to permit actions that would otherwise constitute an offence in relation to species.
- The Natural Environment and Rural Communities, (NERC), Act 2006 imposes an obligation on all public bodies, including local authorities, to consider whether their activities can contribute to the protection of wildlife. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England and states that: "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."

Species-specific conservation legislation is detailed within Appendix 3.

The reader is referred to the original legislation for definitive interpretation.

2.2 Planning Policy

The recommendations of this report are in line with the key principles of the Ministry of Housing, Communities and Local Government (MHCLG) (2021) National Planning Policy Framework (NPPF) (ref.**R.2**) and Government Circular 05/06: Biodiversity and Geological Conservation (ref. **R.3**).

Local planning policies relating to ecology are invariably based upon the conservation of species protected under the above legislation, including species and habitats of principal importance listed under Section 41 of the NERC Act 2006 and the protection of designated sites.

All these features are considered within the scope of this Preliminary Ecological Appraisal, and therefore any recommendations made herein are likely to be in line with this policy.

3. METHODOLOGY

3.1 Technical Approach

The PEA has been undertaken following guidelines provided by CIEEM's Guidelines for Preliminary Ecological Appraisal, (ref. **R.4**), and BS 42020: 2013 Biodiversity standards, (ref. **R.5**) to provide an indication of the ecological value of the site and the potential for the site to be used by protected species.

Scientific names and common names of plant species identified are as they appear in Stace (ref. **R.6**).

The conclusions and recommendations for further works are in accordance with current legislation and guidance.

3.2 Personnel

This report was produced by Tom Cox HND TechArborA (Senior Ecological and Arboricultural Consultant) and Arabella Graves MSci (Hons) (Graduate Ecologist) who are both experienced in ecological consultancy including producing preliminary ecological appraisals. This report was reviewed by Alanna Cooper BSc (Hons) CEnv CSci C.WEM MCIEEM MCIWEM (Principal Ecologist) and approved by Katie Linehan BSc (Hons) MSc PIEMA MCIEEM (Technical Director), who is experienced in ecological consultancy including the production of Preliminary Ecological Appraisals and Impact Assessments.

3.3 Ecological Desk Study

A data search was conducted of freely available biological records. The sources of information included:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) online database (ref. **R.7**) was consulted to obtain geographic information on key statutory designated nature conservation sites and other ecological features of relevance to the site.
- Suffolk Biodiversity Information Service (SBIS) was contacted to provide details of legally protected species and non- statutory designated conservation sites within 2km of the site. Only records of protected species from within the last ten years are considered within this report.
- Ordnance survey maps were used to identify ponds/ditches within 500m of the site to assess the potential for great crested newt (*Triturus cristatus*) (GCN) within the immediate vicinity of the site.

A desk-based search for ponds within 500m of the site was undertaken using the MAGIC online database base maps (ref. **R.7**).

3.4 Preliminary Ecological Appraisal

The surveys used to inform the Preliminary Ecological Appraisal comprise a habitat survey and protected species scoping survey. The Preliminary Ecological Appraisal considers findings of the outcome of the survey work alongside any features highlighted by the desk study.

The site survey was undertaken on 2 October 2023 by Arabella Graves. The weather conditions at the time of the survey were overcast and an approximate temperature of 19°C.

A list of plant species was compiled in accordance with methodology required to establish UK Habitat Classification types (ref. **R.8**) aiming to record to level 4, ensuring habitats were recorded to at least level 3 where it was not possible to record to level 4. Level 5 was recorded wherever possible/relevant. Care was taken to accurately record all habitats of principal importance (if present).

The frequency and cover of each species identified as they are distributed in each habitat is estimated using the DAFOR scale, (ref. **R.9**), as follows:

- Dominant - >75% cover.
- Abundant – 51-75% cover.
- Frequent – 26-50% cover.
- Occasional – 11-25% cover.
- Rare – 1-10% cover.
- Locally dominant (LD), abundant (LA) and frequent (LF) is also used where the distribution is patchy.

Where relevant, habitats are compared to UK BAP definitions to determine if they meet the criteria to be considered habitats of principal importance (ref. **R.10**).

The site was assessed for its suitability to support protected species and other species of conservation importance, which could pose a planning constraint. All signs and areas of habitat considered suitable for protected species or those of conservation interest, were recorded and photographed. These include burrows, droppings, footprints/paths, hairs, refuges, and particular habitat types, such as ponds, known to be used by certain class of fauna. Sites are taken in the context of their surroundings and so include the immediate environs outside of site boundaries, where appropriate.

Any mammal paths found were noted down and followed where possible.

A Daytime Bat Walkover (DBW) of the buildings was undertaken to identify the suitability of the building to provide potential roost space for bats, in line with the Bat Conservation Trust (BCT) survey guidelines (ref. **R.11)**. Potential external access points and evidence of bats were searched for externally only. This was carried out in full day light with the aid of binoculars, to identify the following features:

- Age and structure of the building.

- Condition of the roof noting any missing, dislodged or lifted tiles that would provide entry.
- Condition of the walls, doors and windows that may also provide entry.
- Windowsills, walls and sheltered areas are searched for bat droppings.
- Grease marks, scratch marks and urine staining around possible entry points.

All established trees that could be accessed onsite were inspected during a DBW and underwent a ground level tree assessment (GLTA) to assess their suitability. The categories are none (negligible), FAR (further assessment required) or PRF (potential roost feature) being a tree with at least one PRF present. Where possible, an approximation of the PRF categorisation has been provided as PRF-I (whereby the PRF is only considered suitable for individual bats either due to size or lack of suitable surrounding habitats) or PRF-M (PRF is suitable for multiple bats and may therefore be used by a maternity colony), in line with the Bat Conservation Trust (BCT) survey guidelines.

3.5 Ecological Evaluation

The ecological evaluation detailed below is based upon CIEEM Guidelines for Ecological Impact Assessment in the United Kingdom, (ref. **R.12**).

CIEEM Guidelines state that the value or potential value of an ecological resource or feature should be determined within a defined geographical context as follows:

- On an international scale, e.g., Ramsar, Special Area of Conservation (SAC) or Special Protection Area (SPA) site.
- On a UK scale, for example a Site of Special Scientific Interest (SSSI) or a National Nature Reserve, (NNR).
- On a national scale, e.g., a reserve of importance to England/Northern Ireland/Scotland/Wales.
- On a regional scale, e.g., a local site with important regional habitats of principal importance (HoPI) or good populations species of principal importance (SoPI).
- On a county scale, e.g., a local site with a habitat that is characteristic of the county or rare on a county scale, or with local HoPI/SoPI.
- On a district scale, e.g., a site with wildlife corridors likely to improve the biodiversity of the area.
- On a local or parish scale, e.g., areas of green space in a predominantly urban environment.

The potential for protected species to use the habitats onsite contributes significantly towards the potential value of the habitats onsite.

3.6 Site-specific Limitations

Due to the time of year the survey was undertaken, some plant species are not identifiable. However, this does not affect classification of habitats present.

For baseline surveys undertaken between September to April (depending on management at the time), grassland classifications are assumed and should be verified by a condition assessment at a more suitable time of year to facilitate future Biodiversity Net Gain assessments.

4. RESULTS

4.1 Designated Sites

All relevant desk study data relating to designated sites is attached in Appendix 4.

There are no designated sites within the site boundary.

Consultation of the MAGIC online interactive mapping tool confirms the presence of one internationally important statutory designation within 10km of the site boundary. This was Dew's Ponds SAC located 8.4km to the east of the site.

There are no sites with statutory designations present within a 2km search radius of the site boundary. However, the site is within the impact zone of two SSSI's: Chippenhall Green located 2.7km to the northwest and Dew's Ponds located 8.4km to the east.

SBIS has confirmed the presence of three non-statutory designations within the 2km search radius.

Designations that have good habitat connectivity to the site, or whose qualifying features have the potential to make use of habitats present at the site, are considered important ecological features that may be affected by development.

4.2 Habitats

The results of the habitat survey and protected species scoping survey are detailed below and annotated on Figure 2 overleaf.

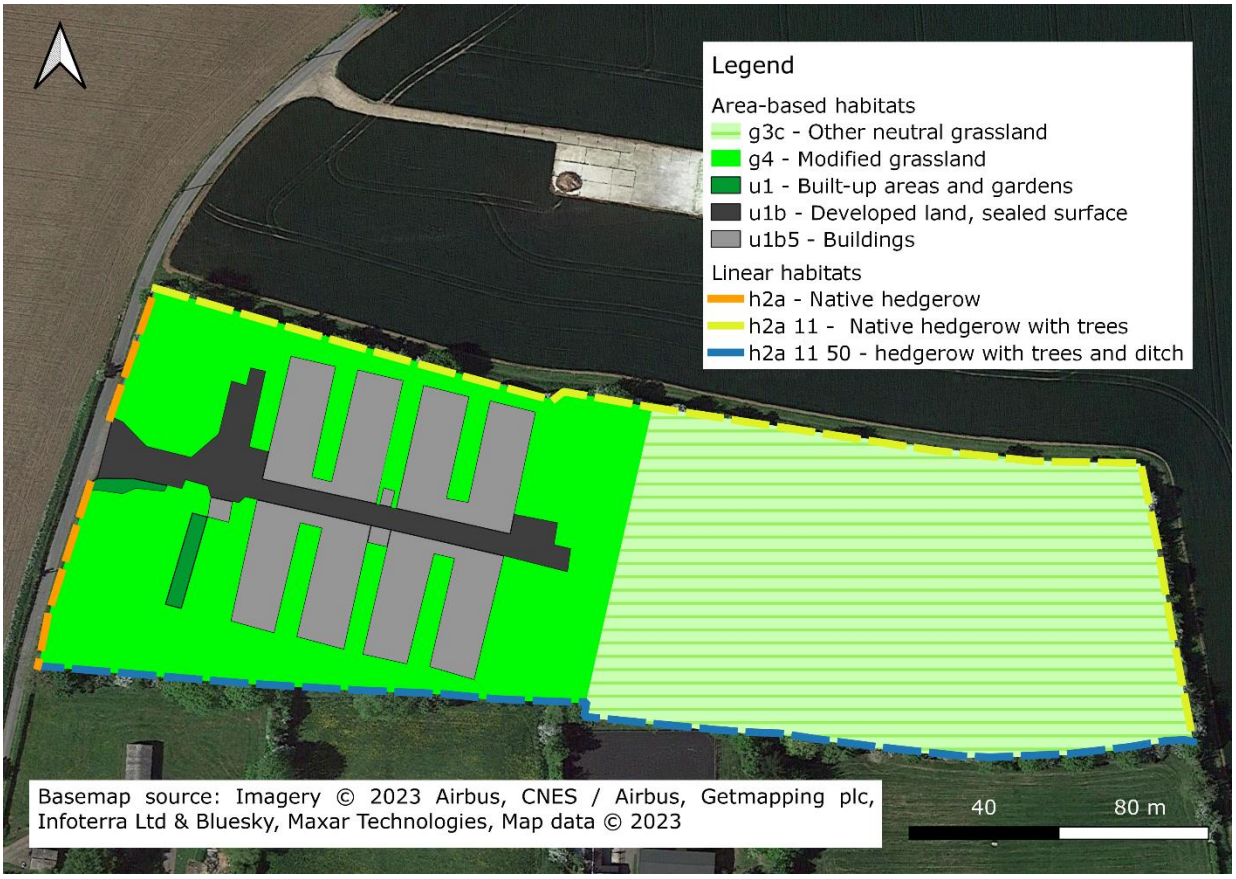


Figure 2 - Habitat Survey Plan

A full list of species recorded during the survey is shown in Appendix 5.

A search of Magic Map (ref. **R.7**) identified deciduous woodland and ancient semi-natural woodland habitats of principal importance near the site. However, these habitats do not exist on site and are unlikely to be impacted by the proposed development, since the nearest parcel is approximately 560m east from the site.

The following area-based habitat types were recorded within the survey area:

- Other neutral grassland – g3c
- Modified grassland – g4
- Built-up areas and gardens – u1
- Developed land, sealed surface – u1b
- Buildings – u1b5.

Linear habitats recorded within the survey area include:

- Native hedgerow – h2a
- Native hedgerow, with trees – h2a 11
- Native hedgerow with trees and ditch – h2a 11 50.

4.2.1 Other neutral grassland

The grassland to the western half of the site had greater species diversity and does not appear to be as regularly mown. This included species such as perennial rye grass, common ragwort, bristly oxtongue, and clover sp.

4.2.2 Modified grassland

The grassland on the eastern half of the site looks to be regularly managed and was recently cut short at the time of the survey, this included species such as perennial rye grass, geranium sp., and thistle sp.

4.2.3 Built-up areas and gardens

The bungalow onsite is bordered by a vegetated garden on the north and west side. This consisted of butterfly bush, cherry laurel, ash, and Leyland cypress.

4.2.4 Developed Land Sealed Surface

An area of hard standing is present through the centre of the site connecting the main entrance to the u-shaped buildings.

4.2.5 Buildings

There are four large u-shaped chicken sheds onsite along with two storage sheds, a small office, a garage, and a residential bungalow. At the time of the survey, the buildings were not in use.

4.2.6 Native hedgerow

A species-poor hedgerow was located along the western boundary of the site, this comprised hawthorn, blackthorn, and ivy.

4.2.7 Native hedgerow, with trees

A species-rich hedgerow with trees was located along the northern, eastern, and southern boundaries of the site, the hedgerow species comprised field maple, blackthorn, ash and elder the tree species comprised pedunculate oak, common ash, and cypress.

4.2.8 Native hedgerow with trees and ditch

This hedgerow consisted of the same species as the hedgerow with trees but with an associated ditch which ran along the southern boundary of the site. The ditch was dry at the time of the survey and dominated by common nettle.

4.2.9 Habitats Outside the Development Zone

The site is surrounded to the northeast and west by arable farmland with grassland to the south. There is connectivity to a woodland block to the east by hedgerows and a ditch.

4.3 Species

Descriptions of the target notes (TN) and relevant photographs are included in Appendix 6. The location of target notes and other features relevant to protected or otherwise notable species is included on Figure 3 below.

Figure 3 - Target Notes and Species-specific Features

4.3.1 Species Discounted from Further Consideration

Legally protected species for which there is no suitable habitat onsite include hazel dormouse (*Muscardinus avellanarius*), water vole (*Arvicola amphibius*) and otter (*Lutra lutra*).

There was a ditch to the south of the site which connects to the river Blyth located 1km to the south. However, the ditch onsite was dry at the time of the survey and was overgrown with nettles, lacking in features suitable for water vole and otter. No watercourses were present near the site, as such, the site was not suitable for these species.

These species are therefore not considered further in this report.

4.3.2 Plants

SBIS has returned two records of rare or otherwise notable plants recorded in the last 10 years within 2km of the site. This includes species such as pyramidal orchid (*Anacamptis pyramidalis*) and sulphur clover (*Trifolium ochroleucon*).

No evidence of any rare plants were noted during the site survey.

All of the plant species recorded at the site are common and widespread native or naturalised species or else ornamental, non-native species, including a minority of invasive species.

Given the nature of the identified habitats (i.e., themselves common and widespread) within and immediately adjacent to the proposed works areas, no notable plant species are expected within the affected areas.

4.3.3 Invertebrates

SBIS has returned 24 records of invertebrates recorded in the last 10 years within 2km of the site. This includes species such as stag beetle (*Lucanus cervus*), small heath (*Coenonympha pamphilus*) and white ermine (*Spilosoma lubricipeda*).

The majority of areas that will be impacted are of low species diversity, including modified grassland and hedgerows and are unlikely to support an assemblage of rare invertebrates. Therefore, invertebrates are not considered further within the constraints section of this report.

4.3.4 Great Crested Newt

SBIS has returned 5 records of great crested newt recorded in the last 10 years within 2km of the site. The closest record is 1000m from the site.

17 ponds are located within 500m of the site, referenced ponds 1 to 17 and shown on Figure 4 below.

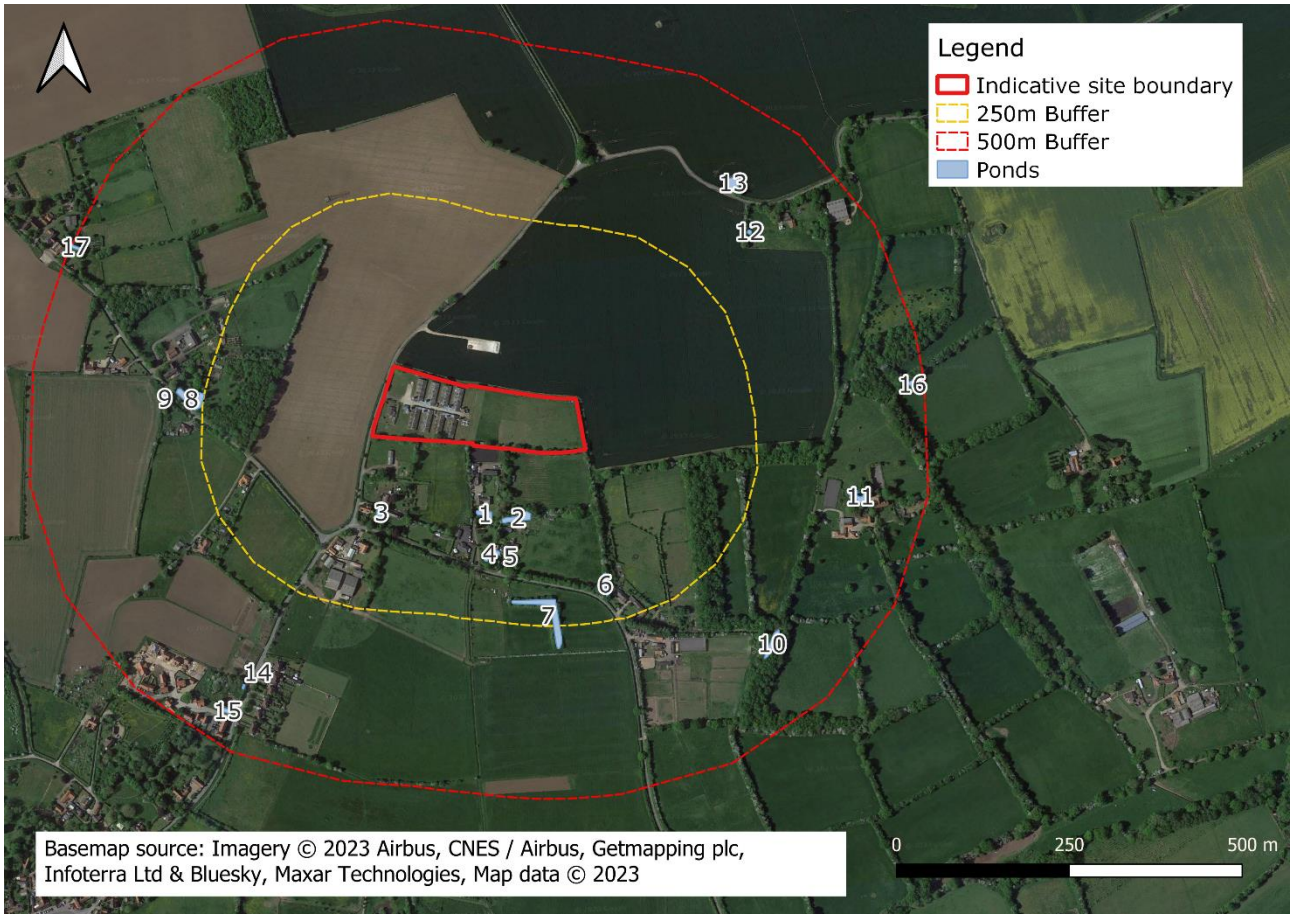


Figure 4 - Ponds within 500m of the Site Boundary

The site contains suitable terrestrial habitat for great crested newt.

The Natural England GCN Risk Zones map for Suffolk and Norfolk (ref. **R.13**) was checked on 18 October 2023 and confirmed that all 17 of the ponds within 500m of the site are within an Amber Risk Zone. Ponds 9 to 17 can be discounted due to their distance from the site. Ponds 1 to 8 are within 250m of the site and have good connectivity with the site. The ditch within the hedgerow with trees onsite is included in TN3.

Considering the above, there is adequate breeding habitat in the local area to assume that great crested newt could utilise terrestrial habitat at the site.

4.3.5 Reptiles

SBIS has returned no records of reptiles recorded in the last 10 years within 2km of the site. The grassland onsite is suitable for reptiles while the hedgerows onsite could be used for hibernating reptiles. The wider countryside has suitable habitat for reptiles. Considering this, it is possible reptiles may be present in the terrestrial habitats onsite.

4.3.6 Birds

SBIS has returned 130 records of birds recorded in the last 10 years within 2km of the site. This includes species such as barn owl (*Tyto alba*), skylark (*Alauda arvensis*) and greenfinch (*Chloris chloris*) that could make use of the hedgerows, trees, and grassland onsite.

Table 1 below, shows the species of birds that were noted during the survey:

Table 1 – Birds Identified During the Survey

Common Name	Scientific Name	Status*	Location Notes
Blue tit	*Cyanistes caeruleus*	Green	Within the hedgerow with trees.
Carrion crow	*Corvus corone*	Green	Seen on top of bungalow.
Collared dove	*Streptopelia decaocto*	Green	Perched within tree in hedgerow.
Magpie	*Pica pica*	Green	Within the hedgerow with trees.
Pied wagtail	*Motacilla alba*	Green	Perched on top of u-shaped shed building.
Robin	*Erithacus rubecula*	Green	Within the hedgerow with trees.
Woodpigeon	*Columba palumbus*	**Amber**	Walking through modified grassland onsite.

Status abbreviations:
Red / Amber / Green: Birds of Conservation Concern 5 (BoCC 5) status (ref. **R.14**)
SOPI: species of principal importance, listed on section 41 of the NERC Act 2006
Sch 1: protected species listed on schedule 1 of the WCA 1981 as amended

The buildings, trees, and hedgerow provide suitable nesting habitat for common and widespread species. These habitats and the grassland also provide suitable foraging habitat for birds.

4.3.7 Bats

SBIS has returned 7 records of bats recorded in the last 10 years within 2km of the site. Records include soprano pipistrelle (*Pipistrellus pygmaeus*), common pipistrelle (*Pipistrellus pipistrellus*), and brown long-eared bat (*Plecotus auritus*).

Some of the buildings onsite are suitable for roosting bats; the boundary hedgerows and trees are suitable for foraging and commuting bats. These features are discussed in further detail below.

4.3.7.1 Buildings

The buildings subject to a Preliminary Roost Assessment are referenced as shown on Figure 5 overleaf.

Figure 5 - Building References for the Preliminary Roost Assessment

Selected photographs of the scoping survey are included in Appendix 7 and details of the potential external roost features identified and their suitability are provided in Table 2 below. Photograph numbers referenced in the table below are in coordination with those in Appendix 7.

Table 2 – Bat Roost Suitability of Buildings

Ref. No.	Building Description	Potential Roost Feature	Bat Roost Suitability*
B1	Single storey gable ended office building with single skin wooden cladding and a corrugated metal roof.	No features noted, building was in good condition and well-sealed (photograph 1 to 4).	Negligible
B2	A u-shaped single storey chicken shed with single skin corrugated cement roof (photograph 5 and 6). There was an entrance area leading to the main shed (photograph 7). Light ingress was noted through vents present in the roof within the shed space (photograph 8 and 22). The shape of the building is also shown in TN2.	Gap between wooden cladding and doorway allowing for access and potential roosting (photograph 19).	Moderate
B3		Gap under barge board and around lead flashing (photograph 17). Gaps present behind where vent meets the external wooden cladding (photograph 18).	Moderate
B4		Gap behind barge board and access to inside space via broken vent (photograph 21 and 24). Hole present in wooden cladding (photograph 23).	Moderate
B5		Gap between wooden cladding where the roof meets (photograph 20).	Moderate

Table 2 – Bat Roost Suitability of Buildings			
Ref. No.	**Building Description**	**Potential Roost Feature**	**Bat Roost Suitability***
B6	Single storey shed with timber beams and corrugated cement roof (photograph 9).	Well-sealed machinery shed in good condition (photograph 14).	Negligible
B7	Single storey storage shed, constructed of wood with an asbestos roof (see photograph 10 and 11).	Storage space with small gap between metal ridge and cladding inside, gap between the outer cladding and structure, and wooden boards on the outside of the structure (photographs 12,13, 15 and 16). However, none of these were considered suitable for typical bat roosting.	Negligible
B8	Single storey flat roofed garage with pebble dash rendered walls and wooden barge boards (photograph 30).	The inside of the building was used for storage and internally had no potential roost features (photographs 29 and 32). A gap was present behind the barge board on the outside of the building, but this was considered unsuitable (photograph 31).	Negligible
B9	Brick bungalow with a gable end and cement tile roof (photograph 25). Sealed soffit made of plastic material (photograph 27). A detailed internal inspection is required to conclude if there are further features present.	Gaps between tiles and ridge tile (photograph 26). Tiles were not tightly sealed to the roof and lead flashing present had gaps underneath (photograph 28).	Low
*Based upon external PRA unless stated otherwise			

4.3.7.2 Trees

No trees onsite were considered to have potential roost features that could be used by bats.

4.3.7.3 Foraging and Commuting Habitat

Grassland and hedgerow habitats offer suitable commuting routes and foraging habitat for bats. There is good connectivity with hedgerows and lines of trees to areas of woodland in the local vicinity.

4.3.8 Hedgehog

SBIS has returned 17 records of hedgehog (*Erinaceus europaeus*) recorded in the last 10 years within 2km of the site. The site provides suitable foraging habitat in the grassland and suitable nesting habitat within the hedgerows for example the hedgerow with trees onsite (see TN4).

4.3.9 Badger

If it is intended to submit this report with a planning application, this section should be redacted prior to uploading this report onto the public domain.

The site provides suitable habitat for badger, and whilst no evidence of badger was found onsite the modified grassland provides good quality foraging habitat for this species. Biological records confirm the presence of this species in the surrounding area.

4.3.10 Other Fauna

Evidence of rabbit *(Oryctolagus cuniculus)* activity (including droppings, warrens, etc.) could be seen in the areas of grassland (see Target Notes TN1, TN5 and TN6 within Appendix 6). Rabbits were also noted foraging onsite during the survey.

5. EVALUATION, CONSTRAINTS AND RECOMMENDATIONS

5.1 Nature Conservation Sites

The desk study identified no nature conservation sites with statutory designation, and three non-statutory designated nature conservation sites within 2km radius of the site. One internationally protected site, Dew's Pond (Special Area of Conservation), was noted within 10km.

The development site does not contain any habitats which could support the important species associated with either the statutory or non-statutory sites, and there is not potential habitat connectivity between the site and the statutory sites.

It is considered unlikely, given the distance from the survey area and localised nature of the proposed development works, that the Nature Conservation sites listed above will be directly affected by any construction activity on the surveyed area. It is considered unlikely that residential development is of sufficient size to have any indirect impacts on the designated sites.

5.2 Habitats

The proposed development should aim to deliver a biodiversity net gain, by including more habitat area, and better-quality habitat within the proposals, than are currently present onsite. This may require consideration of offsite compensation for loss of habitats. Metric calculations in accordance with the most recent methodology (Biodiversity Metric 4.0, ref. **R.15** at time of writing) will likely be a requirement of planning to show how that net gain can be achieved.

For the purposes of Biodiversity Net Gain Assessment, habitats should be assumed to be in good condition in the absence of any further botanical survey carried out with an aim to assess habitat condition. Any further botanical survey proposed should include the methodology to assess habitat condition as set out in the statutory guidance for biodiversity net gain assessment (ref. **R.16**).

The ecological constraints regarding general habitats onsite are detailed within Table 3 overleaf, along with associated recommendations for avoidance and/or mitigation to reduce likely impact:

Table 3 – Habitat Constraints and Recommended Actions			
Habitat	**Value/Importance**	**Potential Impact/Effect**	**Recommended Actions (Avoidance Measures or Recommendations to Reduce Impact)**
Grassland	Further classification required to determine value.	Loss of grassland that may be of high value to biodiversity.	Further botanical survey of the grassland at a more appropriate time of year (recommended between May and August) to determine accurate grassland classification, species-diversity and assessment of condition, particularly if demonstration of biodiversity net gain is required in a future development proposal.
Hedgerows	Habitat of principal importance. Wildlife resource for foraging/commuting local wildlife.	Loss of foraging and resting habitat suitable for notable and protected species.	The hedgerows on site should be retained where possible. Protection measures should be implemented according to BS 5837: 2012 'trees in relation to design, demolition and construction' (ref. **R.17**). Any hedgerows that are removed during the development should be replaced within the landscaping of the final development using similar species and to maintain habitat corridors across the site.

5.3 Legally Protected and Notable Species

The ecological evaluation for protected species is detailed Table 4 overleaf:

Table 4 – Protected Species - Ecological Constraints and Recommended Actions

Ecological Constraint/ Receptor	Biological Records Within 2km	Value of Supporting Feature	Potential Impact/Effect	Recommended Actions (Avoidance/mitigation/compensation Measures and Recommendations for Further Works)	Timing Restrictions
Great Crested Newt (GCN)	Yes	The grassland, and hedgerow habitats onsite are considered suitable terrestrial and hibernation habitat for GCN. There are several ponds within 250m that offer potential breeding habitat. The site is located within an Amber Risk Zone. GCN are fully protected under the Habitat and Species Regulations 2017 as amended and the Wildlife and Countryside Act 1981 as amended and are species of principal importance.	Loss of GCN terrestrial /hibernation habitat. Damage/destruction of a GCN resting place. Death or injury of GCN.	The development could be undertaken under the Natural England district licence for Suffolk. In this licensing route, developers do not need to have additional surveys completed, as the impact on newts from the site will have already been included within a wider regional assessment (although eDNA analysis can be helpful in discounting some ponds from further consideration in the district licence). Developers should contact Natural England and pay for a certificate (or report) which can be submitted with their planning application. Alternatively, eDNA survey of ponds 1 to 8 could be carried out to determine presence/ absence of GCN. If absent, no further works will be required. If confirmed present, following the eDNA survey, developers can undertake additional survey effort (between March to June) to confirm the population of GCN present to determine onsite mitigation requirements under a traditional European Protected Species mitigation licence, available through application to Natural England. Full access to the ponds (which are all located on private property) would be required to facilitate this.	Sign up to DLL at pre-planning stage. Mid-April to late June for eDNA survey. Mid-March – June inclusive for traditional surveys and population assessment.
Reptiles	No	The other neutral grassland onsite is suitable for foraging reptiles and there are habitats onsite suitable for hibernating reptiles.	Reduction in breeding /foraging /hibernation habitat for reptiles. Death or injury of reptiles.	Due to the limited area of habitat suitable for reptiles and the surrounding connected habitats available for dispersal, a method statement should be approved and followed to avoid harm to any reptiles which may be present at the time of works. A method statement is recommended to be submitted to the LPA for approval prior to clearance of any grassland or hedgerow within the red-line boundary. Due to the very limited extent of habitat to be removed, this approach is considered appropriate. The method statement should include timings and details of the clearance methods and post clearance maintenance methods (including a toolbox talk to all site staff involved) to minimise the risk of harm to reptiles, if present.	Removal of grassland should be undertaken during the reptile active season (March to October).
Breeding Birds	Yes	Habitats including buildings, trees and hedgerows offer value to breeding birds for common passerine birds. The grassland also provides suitable foraging habitat for birds.	Loss of habitat for breeding and foraging birds. Destruction of active nest sites.	To ensure that no offences occur under the WCA, it is recommended that any vegetation clearance work is undertaken outside of the bird nesting season. If it is not possible to undertake clearance works outside of the breeding bird season, a suitably qualified ecologist should be employed to determine if nesting birds are using the site prior to works commencing, to avoid negative impact on protected species. Any active nests that are found would need to be provided with a minimum of a 10m buffer (depending on species and site conditions) which would have to be left until the young have fledged.	Clearance during September to February only unless supervised by an Ecologist.
				Alternatively, **avoidance** measures such as habitat retention and protection should be designed into the scheme to avoid negative impact. This should include retention and protection of the hedgerows with trees.	N/A
Bats: Roosting habitat- B2, B3, B4, B5 and B9.	Yes	There are potential roost features on B2, B3, B4 B5 and B9 with B2-B5 being of moderate suitability for roosting bats and B9 considered to have low suitability for roosting bats.	Loss of roosting habitat. Destruction of a resting place for bats. Death or injury to bats.	Detailed Preliminary Roost Assessment (PRA) of the buildings onsite to fully assess external features (with endoscope where appropriate). This should also include an internal inspection. Bat roost activity surveys on B2, B3, B4, B5 and B9 will be required. Based on the DBW undertaken as part of this PEA, a minimum of two survey events will be required on those with moderate potential and one survey event on builds with low potential, however this could be raised or lowered, depending on the results of the detailed PRA.	Internal PRAs of buildings can be undertaken anytime. Roost surveys are restricted to May to September inclusive.
				Alternatively, **avoidance** measures should be designed into the scheme to avoid negative impact. This should include**:** • Retention and protection of the buildings with roost potential. This should include an appropriate buffer to avoid impacts from vibration and noise during construction. • A sensitive lighting scheme should be designed in coordination between a qualified lighting engineer and a suitably qualified Ecologist, according to current best practice guidelines (ref. **R.1**). This should ensure that potential roosting and connective commuting habitat (either retained or created within the development) remains as unlit as possible to allow continued and future use by bats.	N/A
Bats: Foraging and commuting habitat	Yes	Hedgerows and trees around the margins of the site are suitable habitat for foraging and commuting bats. The foraging and commuting habitat onsite is considered to be of moderate value.	Loss of foraging and commuting habitat that is of local/county importance. Severance of commuting routes	Avoidance measures should be designed into the scheme to avoid negative impact. This should include: • Retention and protection of all trees and hedgerows currently around the boundaries of the site. • A sensitive lighting scheme should be designed in coordination between a qualified lighting engineer and a suitably qualified Ecologist, according to current best practice guidelines (ref. **R.1**), and details of the lighting strategy provided with the planning application submission. The lighting strategy should be designed to ensure that any proposed external artificial lighting avoids light spill onto surrounding vegetation used by foraging and commuting bats (e.g., surrounding hedgerows, trees, etc) above the current baseline levels.	N/A

Table 4 – Protected Species - Ecological Constraints and Recommended Actions

Ecological Constraint/ Receptor	Biological Records Within 2km	Value of Supporting Feature	Potential Impact/Effect	Recommended Actions (Avoidance/mitigation/compensation Measures and Recommendations for Further Works)	Timing Restrictions
		Boundary vegetation offers suitable commuting routes for bats, and as there is currently no bat data for the site it is unknown how the proposed lighting associated with the development would affect these routes.	for the local bat population. Abandonment of roost sites. Reduction in foraging availability reducing breeding success.	If avoidance of effects on foraging/commuting habitat by artificial lighting cannot be demonstrated at the pre-planning stage (e.g., through comparison of existing lux levels and proposed lux level plans, showing no net increase in lux levels at the tree canopy/hedgerows), additional survey effort will be required to confirm baseline conditions prior to the planning application submission. Night-time bat walkover (NBW) and remote monitoring surveys (ref. **R.11**) should be carried out to determine the importance of the foraging/commuting habitat around the site boundaries assemblages of bat species in the local area. This will enable an ecological risk assessment to determine the level of effect, if any, additional artificial lighting will have on foraging and commuting bats, and design mitigation and/or compensation measures that may be necessary to address the effect.	NBW surveys are restricted to April to October inclusive and will require one NBW survey per season spring (April/May), summer (June/July/August) and Autumn (September/October). This will be supported by static monitoring which must be conducted for a minimum of five nights per month (April to October).
Hedgehog -	Yes	The grassland is suitable for foraging hedgehogs and the hedgerows are considered suitable for nesting and sheltering hedgehogs.	Loss of foraging and sheltering habitat.	**Reduction of impact**: Excavations during development or ground investigation works should be covered overnight to prevent entrapment of Hedgehogs. **Mitigation**: Hedgehog friendly fencing should be incorporated into the final design to allow Hedgehogs to continue to commute and forage in the local area. A 15cm diameter hole should be placed at the base of each fence, allowing all gardens and greenspace to be accessible to Hedgehog.	
If it is intended to submit this report with a planning application, the below section on Badger should be redacted prior to uploading this report onto the public domain.					
Badger	Yes	No setts were noted onsite. The other neutral grassland hedgerow is suitable foraging habitat for badger. No badger setts or foraging signs were identified within the site during the habitat survey; however, this species could move onto site at any time if Badger are present in the local area.	N/A – at present	Prior to any construction works the site should be checked by an ecologist to ensure that badgers have not inhabited the site since the original survey visit. All open excavations should be covered overnight to prevent entrapment of badgers or other mammals during development.	None - Pre-construction check can be undertaken anytime

6. OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

The following general enhancements have been recommended to be included within the final development Scheme:

- Planting of native plant species beneficial to wildlife should be incorporated into the final design. This will provide additional habitat for invertebrates, which will in turn provide a food source for reptiles, birds, bats, and hedgehog.
- The final development plan should incorporate bat and bird boxes into the scheme. This will provide additional roosting and nesting habitats for bats and birds post-development.
- Log piles should be placed in connectivity to the boundary vegetation onsite, enhancing the habitats onsite for both reptiles and invertebrates post-development.
- To help achieve biodiversity net gain on the site, areas of natural habitat would need to be included within the scheme. Metric calculations will likely be a requirement of planning, to show that net gain can be achieved.
- Hedgehog friendly fencing should be used for any residential gardens to allow hedgehogs to continue to access the site.

Examples of potential enhancement features are included as Appendix 8.

7. CONCLUSIONS

The proposed development is not anticipated to adversely affect statutory or non- statutory designated nature conservation sites.

None of the habitats that occur within the survey area were considered to have high ecological importance on an international, national, regional, or county scale. The hedgerows are habitats of principal importance, provide wildlife corridors for wildlife, and are considered to be important at a local level for biodiversity. No other habitats onsite are likely to be important at the local level or above. However, further botanical survey of the grassland at a more appropriate time of year (recommended between May and August) is required to determine accurate grassland classification.

The findings of the habitat survey and protected species scoping survey confirm that the habitats onsite have the potential to support great crested newt, reptiles, birds, and foraging and roosting bats. The recommendations within Section 6 of this report should be implemented to reduce the potential impact on protected species.

If avoidance measures are not possible, additional surveys for roosting bats and foraging bats will be required to confirm baseline use of the site by protected species. If present, a detailed mitigation strategy will be required to be provided to the Local Planning Authority prior to the determination of a planning application. Recommendations for mitigation should be in-line with the bat mitigation guidelines (ref. **R.19**).

To help achieve biodiversity net gain on the site, areas of natural habitat would need to be included within the scheme. Metric calculations will likely be a requirement of planning, to show that net gain can be achieved.

Opportunities exist for the provision of ecological enhancements in the form of integrated bat and bird boxes, log piles for invertebrates and reptiles, the incorporation of locally sourced native plant species, or those of known wildlife benefit and the use of hedgehog friendly fencing for any residential gardens to allow hedgehogs to continue to access the site.

Provided the recommendations within this report are followed and the mitigation hierarchy of avoidance, mitigation, compensation, and enhancement is implemented throughout the detailed design process, potential negative effects from development on important ecological features will be negligible.

APPENDICES

Appendix 1 – Report Limitations and Conditions

General Limitations and Exceptions

This report was prepared solely for our client for the stated purposes only and is not intended to be relied on by any other party or for any other use. No extended duty of care to any third party is implied or offered. Third parties should not rely on the facts, matters or opinions set out in this report without the express written permission of Geosphere Environmental Ltd.

Geosphere Environmental Ltd does not purport to provide specialist legal advice.

The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered within the context of the whole report.

Interpretations and recommendations contained within the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based upon current legislation in force at that time.

Ecology Limitations and Exceptions

Any limitations associated with the report will be stated. The consequences of any limitations, findings and/or recommendations in the report are made clear in line with 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, and BSI (2013) BS 42020:2013 Biodiversity – 'Code of practice for planning and development'.

This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context.

The wildlife and habitats present on any site are subject to change over time. Surveys of this kind can have limited validity, with the possibility of behaviour patterns and territory boundaries varying over time, due to the dynamics of adjacent populations.

New information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to us for re-assessment and, if necessary, re-appraisal.

It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment.

The scoping survey does not assess the presence or absence of a species but is used to assess the potential for habitat to support them. Additional surveys may be recommended if, based on the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present.

If bats or any other European protected species are found to be present onsite, and the proposed activities will cause disturbance or destruction of a roost site then this report will only summarise the potential requirements. For works to continue a detailed mitigation plan with appropriate compensation measures would be required and a development licence would need to be sought from Natural England.

This survey does not constitute an invasive species survey and should not be treated as such.

Owing to seasonal variances and prevailing weather, conditions may sometimes be sub-optimal for surveying, and this may delay or disrupt planned survey programmes. If applicable, full details are given in the report.

Geosphere Environmental Ltd may not be aware of information that could be held by other organisations or individuals, and it is always possible for features of nature conservation interest to be unrecorded during surveys.

Scientific survey data will be shared with local biological records centre in accordance with the CIEEM professional code of conduct.

Appendix 2 – References

R.1. Defra (27 September 2023). Biodiversity Net Gain moves step closer with timetable set out. https://www.gov.uk/government/news/biodiversity-net-gain-moves-step-closer-with-timetable-set-out

R.2. Ministry of Housing, Communities and Local Government (MHCLG) (2021) National Planning Policy Framework (NPPF).

R.3. ODPM (2005) Government Circular: Biodiversity and Geological Conservation – statutory obligations and their impact within the planning system.

R.4. CIEEM, (2017). Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

R.5. BSI (2013) BS 42020:2013 Biodiversity – Code of practice for planning and development. BSI Standards Limited 2013.

R.6. Stace, C. A. (2010).New Flora of the British Isles (third edition), Cambridge University Press.

R.7. Magic (accessed 12 December 2023) Site Check Report. www.magic.gov.uk.

R.8. Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1. http://www.ukhab.org/

R.9. Goldsmith, B. (1991). Monitoring for Conservation and Ecology, Chapman & Hall.

R.10. BRIG (ed. Ant Maddock). UK Biodiversity Action Plan; Priority Habitat Descriptions. https://jncc.gov.uk/our-work/uk-bap-priority-habitats/

R.11. Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologist; good practice Guidelines (4th edition). The Bat Conservation Trust, London, ISBN-978-1-7395126-0-6

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

R.13. Natural England GCN Risk Zone Map Suffolk and Norfolk (accessed 18.10.23) Website: https://naturalengland-defra.opendata.arcgis.com/datasets/a202238b3a4e48b7a3840fcb4508de57/explore?location=52.307588%2C1.377308%2C15.72

R.14. Stanbury A. et. al. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands, and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747. Available online at https://britishbirds.co.uk/content/status-our-bird-populations

R.15. Natural England and other parties (March 2023). Natural England Joint Publication JP039: The Biodiversity Metric 4.0 User Guide. https://publications.naturalengland.org.uk/file/6188841413902336

R.16. Natural England and other parties (March 2023). Natural England Joint Publication JP039: The Biodiversity Metric 4.0 – Technical Annex 1 – Condition Assessment Sheets and Methodology. https://publications.naturalengland.org.uk/file/4593449018589184

R.17. BS 5837: (2012), 'Trees in Relation to Design, Demolition and Construction'.

R.18. Institution of Lighting Professionals (2023) Bats and artificial lighting at night – Guidance Note 08/23

R.19. Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.

Appendix 3 – Species Specific Legislation

Introduction

This is a summary only. The reader is referred to the original legislation for definitive interpretation.

Badger

The Protection of Badgers Act 1992 exists for welfare reasons, to protect badgers from cruelty. Under the act it is a criminal offence to wilfully kill, injure, take, possess, or cruelly ill-treat a badger, or to attempt to do so, or to intentionally or recklessly interfere with a sett.

Bats

All bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. It is illegal to kill or injure bats, cause disturbance at their resting places or to block access to, damage or destroy their roost sites.

Great Crested Newts

Great crested newts are protected under the Wildlife and Countryside Act 1981 (as amended) Section 5 and the Conservation of Habitats and Species Regulations 2017. It is illegal to intentionally or deliberately kill, injure or capture great crested newts or intentionally, deliberately, or recklessly damage or destroy their breeding and resting places or obstruct access to their place of shelter or protection.

Water voles are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5. It is illegal to deliberately kill, injure, capture, or disturb them or to destroy, damage or obstruct access to any places used for shelter or protection.

Birds

Wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). It is illegal to take or harm them, their nests (whilst in use or being built) or their eggs.

Additionally, for some species listed under Schedule 1 of the Act, it is an offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly disturb their dependent young.

Reptiles

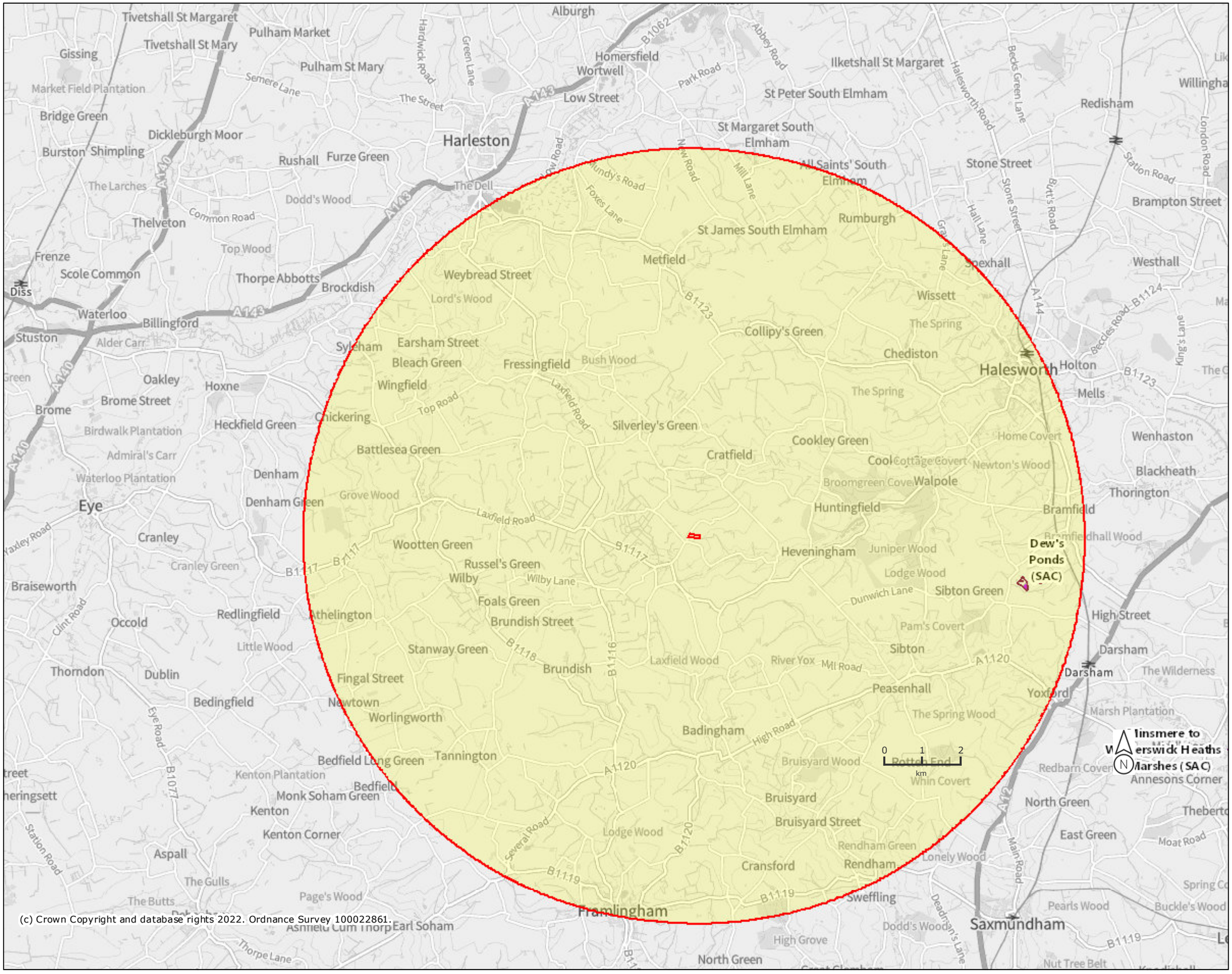
Common reptiles include slow-worm, adder, grass snake and common lizard. These are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Sections 9 (1) & 9 (5) only. It is illegal to kill or injure them.

It is not illegal to capture, disturb or to damage their habitats. However, the reptiles themselves are protected so any works to damage their habitat could risk causing harm to reptiles and hence could be illegal.

Rare reptiles which include sand lizard and smooth snake are restricted to a few locations in Britain and are fully protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9 and the Conservation of Habitats and Species Regulations 2017. It is illegal to kill, injure or intentionally disturb them whilst occupying a 'place used for shelter or protection' and destruction of these places.

Appendix 4 – Desk Study Data

10km Buffer for Peotected Sites



(c) Crown Copyright and database rights 2022. Ordnance Survey 100022861.

Legend

- Ramsar Sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Projection = OSGB36
xmin = 602800
ymin = 261800
xmax = 653600
ymax = 287000

0 2 4 km

Map produced by MAGIC on 2 October, 2023.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

Site Check Report Report generated on Wed Oct 11 2023
You selected the location: Centroid Grid Ref: TM30227312
The following features have been found in your search area:

Special Areas of Conservation (England) - points

Name	DEW'S PONDS
Reference	UK0030133
Hectares	6.72
Hyperlink	http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0030133

Special Areas of Conservation (England)

Name	DEW'S PONDS
Reference	UK0030133
Hectares	6.72
Hyperlink	http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0030133

Ramsar Sites (England) - points
No Features found

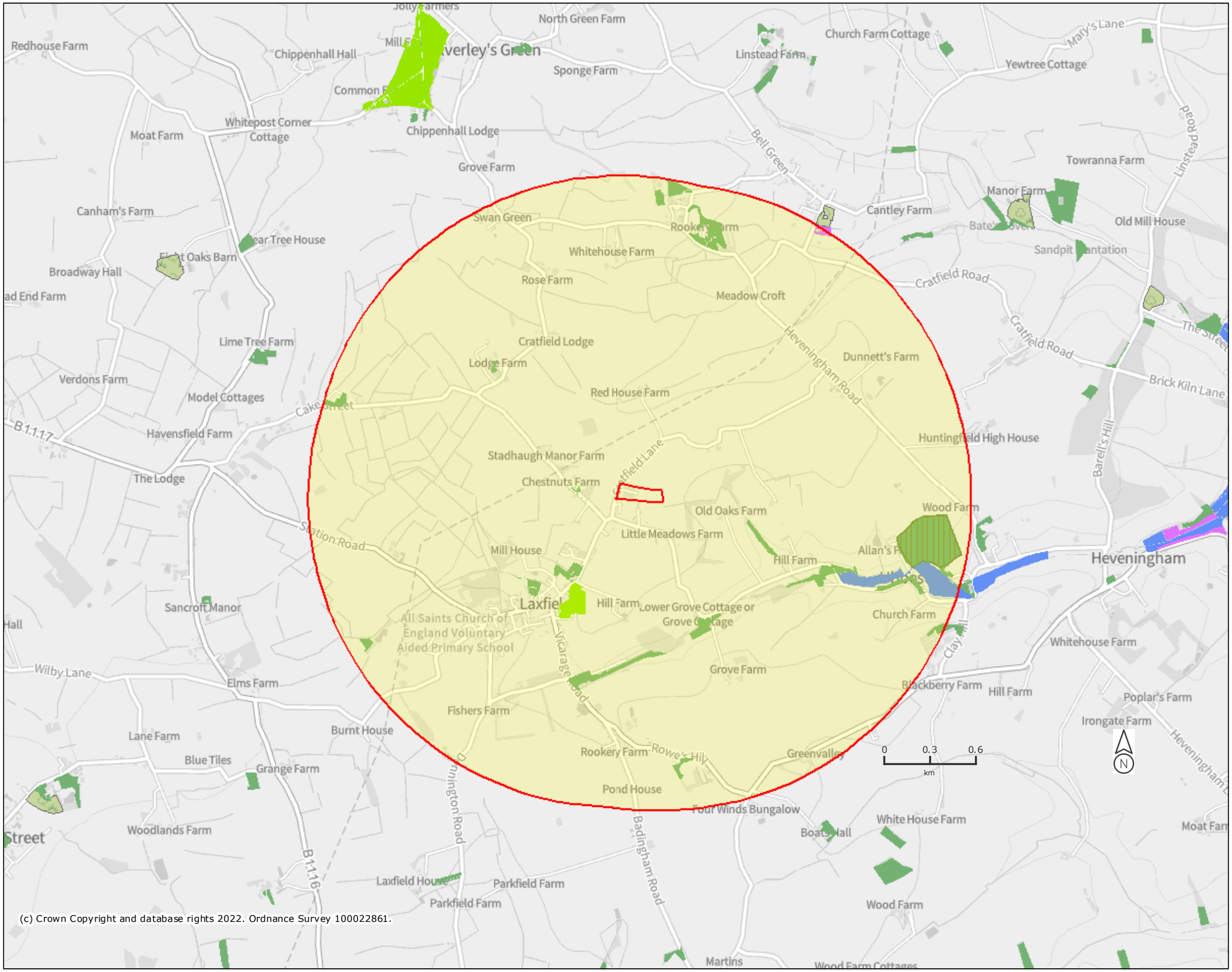
Ramsar Sites (England)
No Features found

Special Protection Areas (England) - points
No Features found

Special Protection Areas (England)
No Features found

MAGIC

Priority Habitats 2km



Legend

- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Meadows (England)
- Priority Habitat Inventory - Limestone Pavements (England)

Ancient Woodland (England)

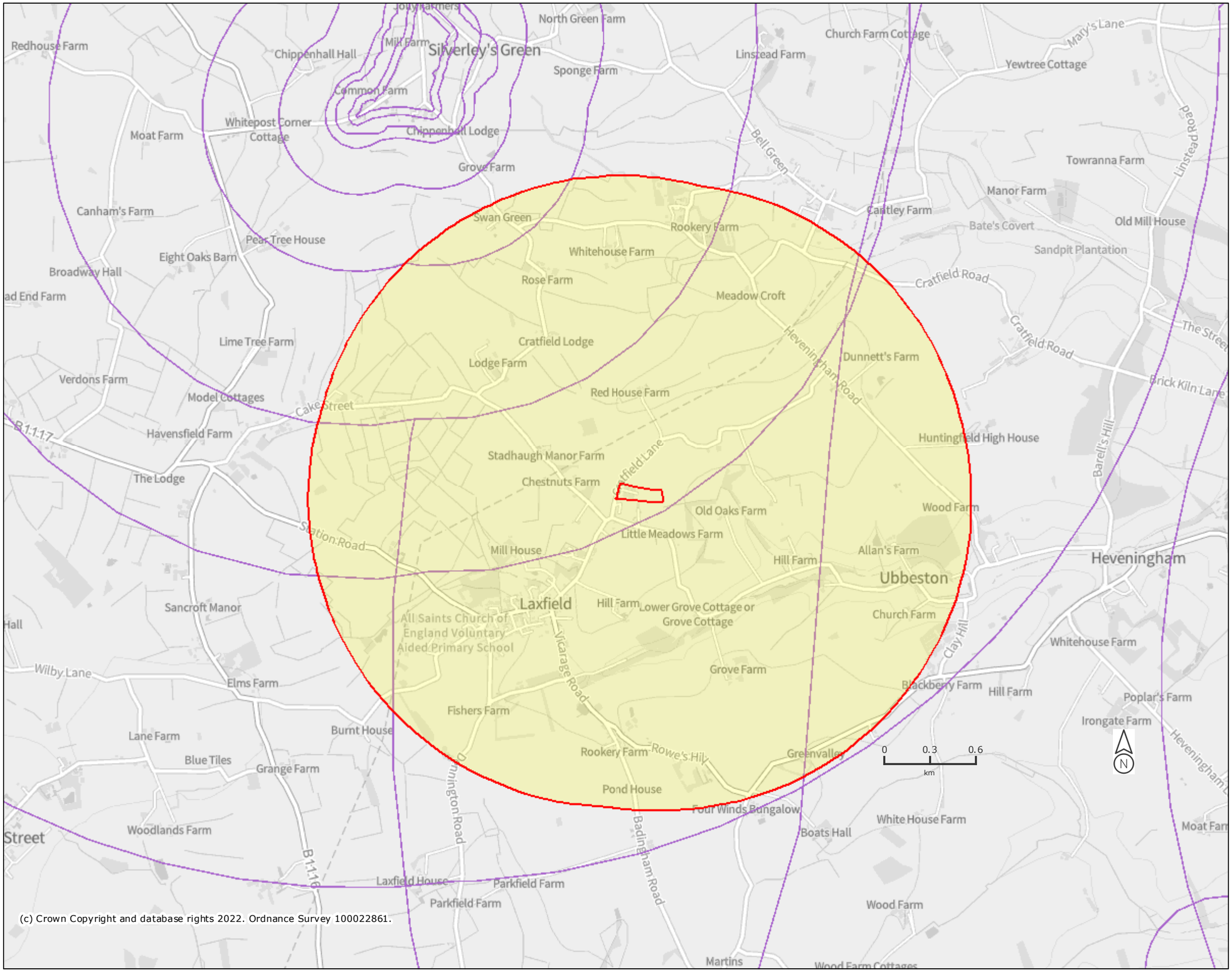
- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Forestry Commission Legal Boundary (England)
- Woodpasture and Parkland BAP Priority Habitat (England)

Projection = OSGB36
xmin = 623700
ymin = 270000
xmax = 636400
ymax = 276300

0 0.5 1
km

Map produced by MAGIC on 2 October, 2023.

Stautory Designated Sites 2km



(c) Crown Copyright and database rights 2022. Ordnance Survey 100022861.

Legend

- Local Nature Reserves (England)
- Ramsar Sites (England)
- SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Potential Special Protection Areas (England)
- Biosphere Reserves (England)

Projection = OSGB36
xmin = 623700
ymin = 270000
xmax = 636400
ymax = 276300

0 0.5 1
km

Map produced by MAGIC on 2 October, 2023.

Appendix 5 – Onsite Plant Species

PLANT SPECIES ENCOUNTERED DURING PHASE 1 HABITAT SURVEY

GEOSPHERE ENVIRONMENTAL

Project Number: 7868,EC

Project Name: PW1330-PL01 **Date:** 01/11/2023

Surveyor	Arabella Graves	**Date of Survey**	2nd October 2023

		Habitat					
Common Name	**Scientific Name**	**Modified Grassland**	**Other Neutral Grassland**	**Native hedgerow**	**Native hedgerow with trees**	**Ditch**	**Built-up areas and gardens**
Field Maple	*Acer campestre*				D		
Yarrow	*Achillea millefolium*		R				
Scarlet Pimpernel	*Anagallis arvensis*		R				
Daisy	*Bellis perennis*		R				
Butterfly-bush	*Buddleja davidii*						R
Spear Thistle	*Cirsium vulgare*		R				
Hazel	*Corylus avellana*				R		
Hawthorn	*Crataegus monogyna*			F	O		
Leyland Cypress	*Cupressus x cuprocyparis leylandii*						R
Ash	*Fraxinus excelsior*				F		R
Bristly Ox-tongue	*Helminthotheca echioides*		O				
White Dead-nettle	*Lamium album*		R				
Red Dead-nettle	*Lamium purpureum*		R				
Perennial Rye-grass	*Lolium perenne*	D	F				
Creeping Cinquefoil	*Potentilla reptans*		R				
Cherry Laurel	*Prunus laurocerasus*						R
Blackthorn	*Prunus spinosa*			F	O		
Pedunculate Oak	*Quercus robur*				R		
Dog Rose	*Rosa canina*				R		
Elder	*Sambucus nigra*				R		
Common Ragwort	*Senecio jacobaea*		R				
White Campion	*Silene latifolia*		R				
Chickweed sp.	*Stellaria* sp.	R	R				
Dandelion	*Taraxacum officinale* agg.		O				
White Clover	*Trifolium repens*		R				
Common Nettle	*Urtica dioica*					D	
Field Pansy	*Viola arvensis*		R				

Common Scientific names identified are as they appear in Stace, C. (2010) New Flora of the British Isles (3rd edition), Cambridge University Press.
*Note: Species marked with asterisks do not appear in Stace

Appendix 6 – Target Notes

Target Note 1

GEOSPHERE ENVIRONMENTAL

NOTES

Target Note 1
Rabbit hole noted onsite

Target Note 2
Buildings on site (chicken sheds not in use at time of survey)

Target Note 2

PROJECT

PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER

7868,EC

TITLE

Ecological Target Notes Relating to Extended Phase 1 Habitat Survey

DATE

01/11/2023

Target Note 3

GEOSPHERE ENVIRONMENTAL

NOTES

Target Note 3
Rabbit hole noted onsite

Target Note 4
Native hedgerow with trees

Target Note 4

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Ecological Target Notes Relating to Extended Phase 1 Habitat Survey

DATE
01/11/2023

Target Note 5

GEOSPHERE ENVIRONMENTAL

NOTES

Target Note 5
Rabbit hole noted onsite

Target Note 6
Rabbit droppings noted onsite.

Target Note 6

PROJECT

PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER

7868,EC

TITLE

Ecological Target Notes Relating to Extended Phase 1 Habitat Survey

DATE

01/11/2023

Appendix 7 – Selected Photographs of External Bat Scoping

Photograph 1

Photograph 2

Photograph 3

Photograph 4

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 1

External view of B1.

Photograph 2

View of where B1 meets a metal storage container.

Photograph 3

The inside of B1 with no loft space present.

Photograph 4

The inside of B1 where the corrugated metal roof meets wooden beams on the inside.

PROJECT

PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER

7868,EC

TITLE

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE

19/10/2023

Photograph 5

Photograph 6

Photograph 7

Photograph 8

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 5
External view of B2 where it borders the grassland onsite.

Photograph 6
External view of B2 where it borders the hard standing onsite.

Photograph 7
Internal view of B2 entrance area leading to internal chicken shed.

Photograph 8
Internal view of B2 chicken shed with light ingress from vents.

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE
19/10/2023

Photograph 9

Photograph 10

Photograph 11

Photograph 12

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 9
B6 external view.

Photograph 10
B7 external view.

Photograph 11
B7 external view.

Photograph 12
B7 small external gap around wooden barge board but not suitable to typicallly support roosting bats.

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE
19/10/2023

Photograph 13

Photograph 14

Photograph 15

Photograph 16

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 13
B7 internal view

Photograph 14
B6 internal view.

Photograph 15
Internal view of the roof of B7.

Photograph 16
Gap between the outside cladding and structure of b7 not considered suitable to support typical roosting beahviour.

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE
19/10/2023

Photograph 17

Photograph 18

Photograph 19

Photograph 20

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 17
B3 gap under barge board and gaps around lead flashing.

Photograph 18
B3 gap between vent and wooden cladding.

Photograph 19
B2 gap in between wooden cladding and doorway.

Photograph 20
B5 gap between wooden cladding where the roof meets.

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE
19/10/2023

Photograph 21

Photograph 22

Photograph 23

Photograph 24

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 21
B4 access to inside space through broken vent cover.

Photograph 22
B3 roof with vents present.

Photograph 23
B5 hole present in the wooden cladding allwoing for access to internal space for roosting bats.

Photograph 24
B4 gap under barge board.

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE
19/10/2023

Photograph 25

Photograph 26

Photograph 27

Photograph 28

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 25
External view of B9.

Photograph 26
Gaps present between the ridge tiles and other roof tiles.

Photograph 27
External view of B9.

Photograph 28
Tiles not tightly sealed and gaps around where the lead flashing meets the tiles.

PROJECT

PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER

7868,EC

TITLE

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE

19/10/2023

Photograph 29

Photograph 30

Photograph 31

Photograph 32

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 29
Internal view of B8.

Photograph 30
External view of B8.

Photograph 31
Wooden bardge board on the outsde of the buildng had a small gap behind it but this was considered to large to typically supoport roosting bats.

Photograph 32
Internal view of B8.

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE
19/10/2023

Photograph 33

Photograph 34

Photograph 35

Photograph 36

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 33
Native hedgerow onsite.

Photograph 34
Hedgerow with trees.

Photograph 35
Modified grassland onsite.

Photograph 36
The developed land, sealed surface present onsite.

PROJECT
PW1330-PL01, Poultry Houses, Cratfield Lane, Laxfield, IP13 8EU

PROJECT NUMBER
7868,EC

TITLE
Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE
19/10/2023

Appendix 8 – Example Enhancement Features

EXAMPLE EXTERNAL BAT BOXES

GEOSPHERE ENVIRONMENTAL

External Bat Box: Schwegler 1FQ bat box

The structure of the 1FQ has been designed with bat behaviour in mind. For example, the outside of the front panel has been roughened to enable the animals to land and hang onto it securely. Access is via a step-like recess which enables even young and inexperienced bats, to safely access the box. The inside of the box has rough pieces of wood incorporated which provide good insulation and are also used by the bats as perches. The internal layout provides three different areas from which bats can hang and which offer different levels of light and temperature. There are also non-slip areas, gaps ranging from 1.5 to 3.5cm in width and various places for individuals to hide.

Installation of the 1FQ is achieved using the four screws and plugs provided. The back panel is initially screwed onto the wall (using four screws) and then the front panel is attached to this. It can easily be attached to most types of external brick, timber or concrete and can also be placed inside a roof space. (If fixing to timber then the gaps between the wall and the box should be sealed with silicone to prevent moisture being trapped here). The box should be positioned a minimum of three metres above the ground and where there is a clear flight path for bats entering and leaving. If desired, the front panel can be painted to match your building using an air-permeable paint.

SOURCE
http://www.nhbs.com/title/160551

External Bat Box: 1FF Schwegler Bat Box with Built-in Wooden Rear Panel

The Schwegler 1FF bat box is spacious enough for bats to use as a summer roost or nursery site and is open at the bottom, allowing droppings to fall out so it does not need cleaning. The 1FF is, therefore, especially suitable for hanging in inaccessible places such as high in trees, or on steep slopes and house walls.

The 1FF is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects.

The inner dimensions of the 1FF have a reducing width making it ideal for bat species which inhabit crevices such as pipistrelle and noctule bats. For conservation projects and studies, the entire front of the box can be easily swung open for inspection purposes.

The 1FF bat box can be sited in trees or on buildings and is best positioned at a height of between 4 to 6 metres.

SOURCE
https://www.nhbs.com/1ff-schwegler-bat-box-with-built-in-wooden-rear-panel

TITLE
Example External Bat Boxes

DATE
01/11/2023

External Bat Box: Vincent Pro Bat Box

This attractive bat box has been designed by leading bat researcher, Collin Morris, based on a tried and tested design from the Vincent Wildlife Trust.

The box features three vertical chambers of different sizes, providing ideal roosting space for a variety of species. Beneath the crevice entrances is a ladder which provides a rough surface for bats to land.

Proven with seven UK species: Barbastelle, Leisler's, common pipistrelle, soprano pipistrelle, brown long-eared, Natterer's and whiskered bat.

SOURCE
https://www.nhbs.com/vincent-pro-bat-box

External Bat Box: Isabella Bat Box

The Isabella Bat Box is designed to provide a large internal cavity, suitable for small groups of bats to roost in. It can be mounted on buildings, trees, and poles, via its large galvanised steel hanging loop, and is coloured an attractive green for a more natural finish. The material it is constructed from is wood concrete, a blend of concrete and wood fibres that balances excellent strength and thermal properties with a lighter weight than a pure concrete box and is recommended in the preferred choice of many ecological consultants. The base's sloping design, leading to an entry space at the rear, ensures that droppings fall out of the box to remove the need for ongoing maintenance. The base can also be removed in order to monitor the box's inhabitants. A variety of bat species will inhabit the box's single internal cavity, including brown long eared bat, noctule bat, and Daubenton's bat.

The box's galvanised steel hanger makes it suitable for mounting on trees or buildings (fixings not included). It should be positioned at least 3m from the ground, in a sheltered area out of direct sun and away from artificial light sources.

- Function: Maternity roost, Summer roost
- Exterior dimensions (lxwxh): 18x15x47cm
- Inner dimensions (lxwxh): 14x12x38cm
- Material: Wood concrete
- Colour: Green
- Fixings: Galvanised Metal Hanger (no other fixings included)

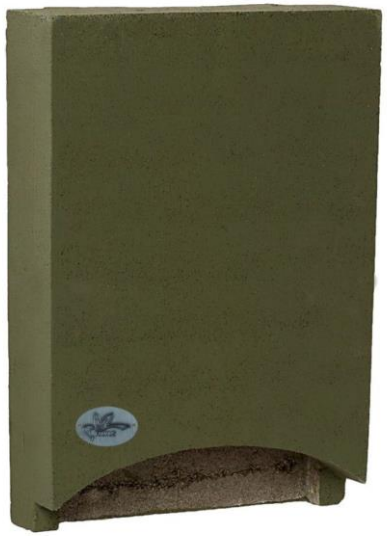
SOURCE
https://www.nhbs.com/isabella-bat-box

GEOSPHERE ENVIRONMENTAL

TITLE
Example External Bat Boxes

DATE
01/11/2023

External Bat Box: Elisa Bat Box



The Elisa Wood Concrete Batbox is designed to provide an ideal summer roost and nesting space for a variety of bat species, including pipistrelles and Daubenton's. Sitting close to a wall in order to minimise the dangers of strong winds knocking it free, the Elisa features a single internal cavity with an entrance hole at the bottom, meaning that it does not need to be cleaned. It can also be fitted to trees, and has a specially curved back to enable it to sit more securely against a rounded surface. It is constructed from wood concrete, a blend of wood fibres and concrete, which makes it extremely long lasting but comparatively light. It also has excellent thermal properties compared to timber boxes, retaining heat exceptionally well.

The Elisa is supplied without fittings, as the necessary supports will vary depending on whether the box is going to be mounted on a tree or wall. It does include a strong wire loop to make hanging easier. The ideal position for the Elisa, as with any bat box, is a height of at least 3m from the ground, in a sheltered area out of direct sun and away from artificial light sources.

- Function: Maternity roost, Summer roost
- Exterior dimensions (l x w x h): 26x10x37cm
- Inner dimensions (l x w x h): 21 x 3-1.5 (tapered) x 30 cm
- Colour: Grey
- Material: Wood concrete
- Supplied With: Galvanised Steel Hangar
-

GEOSPHERE ENVIRONMENTAL

SOURCE
https://www.nhbs.com/elisa-bat-box

External Bat Box: Eco Kent Bat Box

The Eco Kent Bat Box is based on the popular and proven Kent Bat Box design. However, this box has an added weatherproof outer shell, making it more secure and long-lasting. The additional plastic layer also reduces draughts inside the box, providing a more attractive roosting environment for bats.

The Eco Kent Bat Box is suitable for crevice-dwelling species. The two crevices inside the box are approximately 18mm wide, ideal for common and soprano pipistrelles. The FSC-certified spruce wood is rough on the inside providing good grip for bats once inside the box. This box is self-cleaning and does not require any maintenance, as the droppings fall straight down out of the bottom entrance.

These bat boxes can be mounted on either a tree or building using the 3 concealed keyhole fixings located at the top of the box. If possible, site the box at a height of between 4m and 6m in a sheltered sunny place, away from artificial light sources. The box should not be positioned in direct sunlight. Ideally, several boxes should be placed facing different directions, as this provides a choice for roosting bats. A clear path to the entrance of the box is essential.

Please note that once bats have inhabited a roost (integrated or external box) they may only be disturbed by licensed bat workers.

SOURCE
https://www.nhbs.com/eco-kent-bat-box

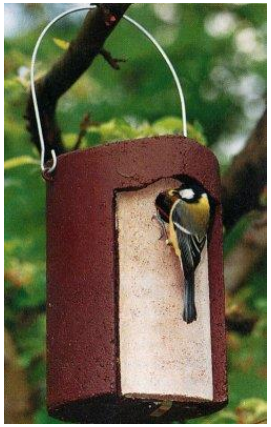
TITLE
Example Bat Bricks & Boxes

DATE
01/11/2023

EXAMPLE BIRD BOXES FOR TREES

GEOSPHERE ENVIRONMENTAL

External Bird House: 1B Schwegler Bird Nest Box (General)



These Woodcrete nest boxes last for at least 20-25 years. Woodcrete is a breathable blend of wood, concrete and clay which will not rot, leak, crack or warp, whilst preventing condensation and maintaining more constant temperatures inside than wooden boxes.

Schwegler bird boxes are backed by conservation organisations, government agencies and forestry experts and experiments have shown that the highest density if bird populations (i.e. breeding pairs per hectare) is achieved with Schwegler nest boxes.

They are carefully designed to provide a stable environment and to mimic natural nest and roost sites with internal brood chamber dimensions that are similar to natural woodpecker cavities. Schwegler have a patented method of installation on trees that prevents the tree trunk from growing over the hanger from which the box is suspended.

SOURCE
https://www.nhbs.com/1b-schwegler-nest-box

External Bird House: Vivara Pro Barcelona WoodStone Open Nest Box

These attractive nestboxes are manufactured from WoodStone which is a mix of concrete and FSC certified wood fibres. Unlike a traditional wooden nest box, these boxes will not rot away or deteriorate and are guaranteed for 10 years. This robust material safeguards against attacks from predators such as woodpeckers, cats and squirrels, whilst also providing a well-insulated interior with a more consistent internal temperature than an ordinary wooden box. This is especially important during the breeding season and ensures that young birds have a greater chance of survival. Nesting sites have become rare for cavity nesting birds due to changes in woodland management practices, so you can provide much-needed space for rearing chicks and birds that are roosting overwinter with these durable, long-lasting nest boxes.

These open nest boxes are suitable for wrens, robins, spotted flycatchers, pied and grey wagtails, song thrushes and blackbirds, and they are available in brown, green or grey to complement both natural woodland and garden settings.

The best height for your nest box is between 1.5m and 3m high, and open nest boxes should be sited in undergrowth such as ivy to provide cover for the nest.

These nest boxes have a removable front panel for easy cleaning.

SOURCE
http://www.birdbrickhouses.co.uk/brick-nesting-boxes/nesting-boxes/

TITLE
Example Bird Boxes for Trees

DATE
01/11/2023

External Bird House: NHBS Wooden Bird Nest Box

Our own range of wooden bird nest boxes have been custom designed and manufactured from substantial 2cm thick FSC-certified wood. These simple, breathable wooden bird boxes have a sloping roof and four drainage holes and are ideal for providing crucial nesting spaces for the smaller garden birds. Nest boxes also provide vital roosting spaces for birds during the cold winter months and the thick walls of these nest boxes will ensure that roosting birds stay warm.

The boxes can be expected to last 5-10 years and are constructed using stainless steel staples which will not rust. These boxes can be installed on a tree or wall and should be placed 2-4m above ground. There should be a clear flight path to the entrance hole and the boxes should be placed so that the entrance is not exposed to strong sunlight or winds.

The 32mm entrance hole is suitable for general garden birds, and the 25mm entrance hole is suitable for the smaller tit species such as blue and coal tits.

- Dimensions: 245mm x 135mm x 185mm (H x W x D)
- Entrance hole: 25mm or 32mm
- Height of backplate: 325mm
- Material: FSC-certified wood

GEOSPHERE ENVIRONMENTAL

SOURCE
https://www.nhbs.com/nhbs-wooden-bird-nest-box

External Bird House: NHBS Wooden Bird Nest Box

This nest box consists of a weatherproof outer shell made from UV stabilised 100% recycled plastic. Inside the outer shell is a wooden nest box to provide the ideal environment for birds to nest in. The wooden box has drainage holes in the base and can be removed from the plastic case. The outer shell has been precision cut and uses an ingenious system of tabs to hold it together. This further extends the lifespan by ensuring that there are no metal fixings that could rust or degrade over time.

The internal compartment is constructed from FSC-Certified Oriented Strand Board, which is made from flakes of wood waste or from saplings thinned from forests to make space for larger trees. If you need to check or clean the box, simply twist the fastening at the bottom and the wooden nesting chamber will slide out. The outer shell is made from recycled board which is itself made from discarded bale wrap, fertiliser bags and other plastic waste, gathered mostly from farms across the UK.

These nest boxes are available with a choice of three hole sizes: 25mm, 28mm and 32mm. The 25mm hole is primarily suitable for the smallest tit species such as blue tits, coal tits and marsh tits. The 28mm hole will attract all of these species as well as great tits, crested tits and tree sparrows. The larger 32mm hole will attract a large range of species including blue tits, coal tits, marsh tits, house sparrows, great tits, nuthatches and pied flycatchers.

Fixing to the wall or tree is easy using the three concealed mounting holes in the back of the box (located opposite the entrance hole for easy access). Often this is the only fixing needed, but a further hole is provided at the base if required for stability. The easiest way to mount the box is to remove the inner compartment, fix the outer shell onto the tree or wall then slide the inner roost chamber back into the box and secure it in place

- Materials: Recycled LDPE plastic and FSC Certified OSB
- Finish: Non-toxic water-based stain and preservative
- Dimensions: 26cm x 17cm x 17xcm (H x W x D)
- Weight: 1.1kg
- Fixing: Three concealed keyholes and further fixing hole at base

SOURCE
https://www.nhbs.com/eco-small-bird-box

TITLE
Example Bird Boxes for Trees

DATE
01/11/2023

EXAMPLE ENHANCEMENTS FOR HEDGEHOG

GEOSPHERE ENVIRONMENTAL

1. Hedgehog habitat requirements (ref. 1)

- There are three main hedgehog habitat requirements to consider in a planning context: High quality feeding habitat - moist grassland, rotting wood and wildflowers to encourage invertebrates.
- A range of nesting opportunities – medium sized fallen leaves from deciduous trees such as oak and beech, as well as supporting structures for winter and breeding nesting eg. log piles or bramble patches. Tussocky grassland and shrubbery in gardens is required for day nesting during the active season.
- The importance of well-connected habitat - hedgehogs roam on average ~2km a night and an urban population is thought to need at least ~1km^2 of well-connected habitat to remain viable.

2. Providing Connectivity with The Wider Area (ref. 2)

Eco Hedgehog Hole Fence Plate:

Hedgehog numbers have dramatically declined in recent years. Research suggests that this is partly because it is becoming harder for hedgehogs to move freely due to an increase in the number of solid walls and fences being erected around gardens.

This reduces the available foraging area and so restricts the amount of food that they can eat as well as reducing the possibility of meeting a mate. Creating a hole in a garden wall or fence will allow your local hedgehogs to pass through from garden to garden safely.

A hole measuring 13cm by 13cm is the right size for a hedgehog to pass through but too small for most pets. Once you have made your hole in the fence or wall, you can fix the Eco Hedgehog Hole Plate to the fence, ensuring that the hole does not get blocked or stretched.

REFERENCE

1. https://www.suffolkwildlifetrust.org/planninghedgehogs
2. https://www.nhbs.com/eco-hedgehog-hole-fence-plate
3. https://www.nhbs.com/hedgehog-house-2
4. https://www.nhbs.com/hh7-hogilo-hedgehog-mammal-house
5. https://www.nhbs.com/hedgehog-house

TITLE
Example Enhancements for Hedgehog

DATE
01/11/2023

3. Artificial Hedgehog Homes (refs. **3**, **4** and **5**)

Hedgehog Dome:

This sturdy WoodStone house features two entrances which act as predator defence tunnels leading into a central circular chamber, the lid of which can be removed for easy access. The house should be placed in a quiet location and covered with leaves for camouflage to encourage hedgehog use.

Protected under the VIVARA 10-year Guarantee.

HH7 Hogilo Hedgehog / Mammal House:

Locate within cover, out of prevailing wind. Pile leaves and short grass around the House plus two handfuls of short dry grass and leaves inside the box to start nest.

These products are for wild creatures and as such, you should not expect immediate habitation. We suggest you carefully read the supplied instructions for siting and provide this product in a suitable habitat for the target species. The product can then be re-visited 6-12 months later, or in the appropriate season, to see if it is being used. If after 24 months the product has not been used, it may be worth choosing an alternative location to site it and/or look to see what improvements you can make to provide a suitable environment for your target species (flowers, woodpiles, rough areas of garden etc).

GEOSPHERE ENVIRONMENTAL

TITLE
Example Enhancements for Hedgehog

DATE
01/11/2023

Hedgehog House:

Underneath the textured brushwood finish there is a sturdy steel frame covered with a waterproof felt lining. The wooden entrance door is manufactured from FSC wood and forms a short predator defence tunnel, small enough to deter access by dogs or badgers. The edges of the house can be pegged down using tent pegs to provide extra security. To encourage hedgehogs to use the house site it in a quiet corner of the garden and cover with leaves for extra camouflage.

GEOSPHERE ENVIRONMENTAL

TITLE
Example Enhancements for Hedgehog

DATE
01/11/2023

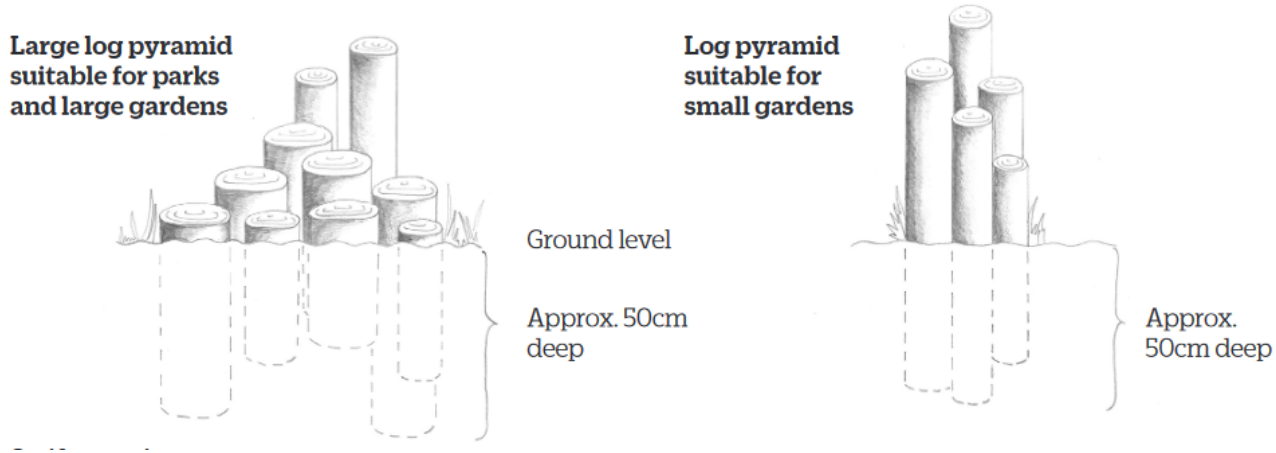
LOG PYRAMID AND LOG PILE GUIDANCE

1. LOG PYRAMID

Establishing the Log Pyramid

Where space is limited and log piles are deemed unsuitable, log pyramids can be created as shown below.

- Drill holes into some of the logs. Drill holes to various depths.
- Dig holes onto the ground ranging from 48cm deep to 60cm deep to give the pyramid shape. The final construction should be as shown below:



SOURCE
Log pyramid drawing copyright of https://ptes.org/wp-content/uploads/2016/11/Build-a-log-pile-for-stag-beetles.pdf

2. STUMPERY

Taken and adapted from Dengarden: How to Make a DIY Stumpery in Your Garden - Dengarden - Home and Garden)

Stumpery creation involves replicating a forest floor using a mix of different sized wood stumps, logs and even driftwood. They are similar to a rockery, but made with parts of dead trees such as stumps and logs.

Dig a hole in the ground. 'Plant' your logs in it, orientated vertically, so that half the log is in the hole. Pack soil in the gaps of the hole to bury the bases of the logs. This will support species like Stag beetle that like damp submerged dead wood. Interplant with ferns and other shade loving plants and bulbs. Stumperies are strongly recommended if you live in Stag beetle hotspots such as the New Forest, Home Counties and East Suffolk

TITLE
Log Pyramid and Log Pile Guidance

DATE
01/11/2023

3. LOG PILES

Resourcing Logs

Any logs created during tree works on the site should be collected and added to the piles, or used to create additional piles. If there are not enough logs created during vegetation clearance, additional logs will need to be imported to the site. Logs should be locally sourced, "green" logs (untreated or dried).

Which Wood to Use

Logs at least 100mm diameter, and 1m long, with the bark still attached provide the best wood. Hard wood trees such as ash, oak and beech are particularly good. Birch logs can look particularly attractive.

Be careful of freshly cut willow and poplar logs, as these can easily re-sprout if left lying on the ground.

Establishing the Log Pile

Leaving woody cuttings from trees, shrubs and herbaceous plants in piles within a shrub bed is an ideal way of attracting invertebrate to site. The damp conditions behind peeling bark are very inviting for woodlice, spiders and beetles, while butterflies and ladybirds take up residence in the drier parts over winter. Log piles should be created by piling large logs into approximately 2m x 1m x 1m piles. Logs should be placed in a shallow pit, approximately 150mm deep. The soil/turf removed to create the pit, should be placed on top of the logs to provide a light cover of soil/turf.

It is best to not cut the wood into small pieces. Leave it in direct contact with the ground, in compact piles to maintain humidity. Larger diameter pieces are of most value, but even small twigs and branches should not be discounted.

GEOSPHERE ENVIRONMENTAL

REFERENCE
Log pyramid drawing copyright of https://ptes.org/wp-content/uploads/2016/11/Build-a-log-pile-for-stag-beetles.pdf

TITLE
Log Pyramid and Log Pile Guidance

DATE
01/11/2023

PLANTS CONSIDERED BENEFICIAL TO BATS

The lists of plants below are considered suitable species for foraging bats. When buying native plants, ensure they are from a reputable source, as many wildflowers are illegally taken from the wild.

Trees

Common Name	Latin Name	Common Name	Latin Name
Apple	*Malus domestica*	Plum	*Prunus domestica*
Bird Cherry	*Prunus padus*	Rowan	*Sorbus aucuparia*
Crab Apple	*Malus baccata*	Sugar Maple	*Acer saccharum*
Medlar	*Mespilus germanica*	Sycamore	*Acer pseudoplatanus*
Norway Maple	*Acer platanoides*	Whitebeam	*Sorbus aria*
Pear	*Pyrus communis*	Wild Cherry	*Prunus avium*

shrubs

Common Name	Latin Name	Common Name	Latin Name
Field Maple	*Acer campestre*	Butterfly Bush	*Buddleja davidii*
Hazel	*Corylus avellana*	Golden Ball Buddleia	*Buddleja globose*
Hawthorn	*Crataegus monogyna*	Hebe	*Hebe spp.*
Heather	*Erica vagans*	Privet	*Ligustrum ovalifolium*
Cherry Laurel	*Prunus laurocerasus*	Wayfaring	*Viburnum lantana*

Climbers

Common Name	Latin Name	Common Name	Latin Name
Dog Rose	*Rosa canina*	Ivy	*Hedera helix*
Guelder Rose	*Viburnum opulus*	Jasmine (night scented)	*Cestrum nocturnum*
Honeysuckle	*Lonicera periclymenum*		

Herbaceous Plants

Common Name	Latin Name	Common Name	Latin Name
Angelica	*Angelica sylvestris*	Lemon Balm	*Melissa officinalis*
Aubretia	*Aubretia deltoidea*	Marjoram	*Origanum majorana*
Candytuft	*Iberis sempervirens*	Knapweed	*Centaurea nigra*
Corn Cockle	*Agrostemma githago*	Mallow	*Malva sylvestris*
Cornflower	*Centaurea cyanus*	Ox-eye Daisy	*Leucanthemum vulgare*
Corn Marigold	*Glebionis segetum*	Primrose	*Primula vulgaris*
Borage	*Borago officinalis*	Yarrow	*Achillea millefolium*
English Marigolds	*Calendula officinalis*	Rosemary	*Rosmarinus officinalis*
Lavender	*Lavandula spp.*	Sweet Cicely	*Myrrhis odorata*
Musk Mallow	*Malva moschata*		

GEOSPHERE ENVIRONMENTAL

REFERENCES

TITLE
Plants Considered Beneficial to Bats

DATE
01/11/2023

GEOSPHERE ENVIRONMENTAL

Ec Ecology.

Fr Flood Risk.

Ge Geotechnical.

En Environmental.

Kw Knotweed.

GEOSPHERE ENVIRONMENTAL LTD

Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ

T: 01603 298076 | 01473 353519 | **E**: info@geosphere-environmental.co.uk | **W**: geosphere-environmental.co.uk