BiOME CONSULTING

www.BiOMEconsulting.com

Land off Whelp Street
Kettlebaston
Suffolk

JAMES CRAWFORD

Preliminary Ecological Appraisal

Final

VERSION 2

20 March 2024

BiOME Consulting Limited, Horseshoe Barn, Halvergate, Norfolk, NR13 3AJ
info@biomeconsulting.com

Document History and Status

Revision	Date Issued	Reviewed By	Approved By	Date Approved	Revision Type
1	18/03/2024	RM			Draft for technical review
2	20/03/2024	MO	MO	20/03/2024	Final

Author	Olivia Barnes/Richard Moores MCIEEM
Report Reviewer	Martyn Owen MCIEEM
Project Manager	Richard Moores MCIEEM
Client	James Crawford
Name of Project	Land off Whelp Street, Kettlebaston, Suffolk
Name of Document	Preliminary Ecological Appraisal
Document Version	2
Document Status	Final

Contents

Executive Summary

BiOME Consulting Ltd was commissioned by James Crawford in February 2024, to undertake a Preliminary Ecological Appraisal (PEA) of a site proposed for development, located in Kettlebaston, Suffolk.

The ecology surveys detailed within this report were completed in order to determine the baseline ecological conditions of the site, with particular attention given to the possible presence of protected, controlled or otherwise notable species and/or habitats.

The ecological issues identified during the PEA were:

Designated Sites: Assuming environmental best practice, no impacts to nearby statutory and non-statutory designated sites are anticipated given their locations, the results of the PEA and the reasons for designation. It should be ensured that appropriate environmental protection measures are employed during construction, which should be detailed within a Construction Environmental Management Plan (CEMP) (or similar).

Habitats: The site comprised of patchy semi-improved rough grassland, recently cleared areas, small areas of bramble scrub and a number of mixed-aged trees within the site and around the site boundary. The buildings/structures within the site comprised a large barn and a hay shed. The site boundaries were defined by a network of ditches/streams with the River Brett forming the northeastern boundary. A section of stream was present parallel with the roadside at the entrance. This stream was set within a narrow strip of woodland with ancient woodland indicator plants present. The treeline along the roadside was also growing on a low bank suggestive of ancient origin. It is recommended that the section of stream that runs parallel with the entrance track and strip of surrounding woodland is protected going forward. Similarly, all waterways should be protected. The majority of other habitats present within the site are common across England, and locally, and were assessed to be of very limited intrinsic ecological value.

Bats: The onsite buildings were assessed as being of negligible potential value to roosting bats. No further survey work in relation to roosting bats is considered

necessary. In the unlikely event that any bats are encountered during works, works must cease and the advice of a Suitably Qualified Ecologist sought. It Is understood that no further trees are proposed for removal and none will likely suffer significant indirect impacts from the proposed works. The site was assessed as being of high potential value to foraging/commuting bats. Potential impacts to foraging/commuting bats should be minimised through the production of a sympathetic site lighting plan.

Badger, Section 41 Mammals and other Ground Dwelling Fauna: The site could provide foraging habitat for terrestrial mammals and mitigation is proposed to ensure no such species come to harm during works.

Great Crested Newt (GCN): GCN are considered likely absent from the site based on desk study and absence of ponds within 0.25m of the site. No further survey work in relation to GCN is considered necessary, but given optimal terrestrial habitat within the site and their confirmed presence in the wider area, the occasional wandering individual present in the site cannot be discounted. Therefore, it is recommended that works are completed under the auspices of a Precautionary Working Method Statement (PWMS), to ensure no GCN come to harm.

Reptiles: The habitat on site was considered largely unsuitable for any reptile species. The adjacent grassy fields to the east (the other side of the River Brett) appeared potentially suitable. Precautionary working (completed under the auspices of a PWMS) will be required if the proposed works include impacts to any areas of established vegetation. In the unlikely event that any reptiles are disturbed during works, works must cease and the advice of an SQE should be sought.

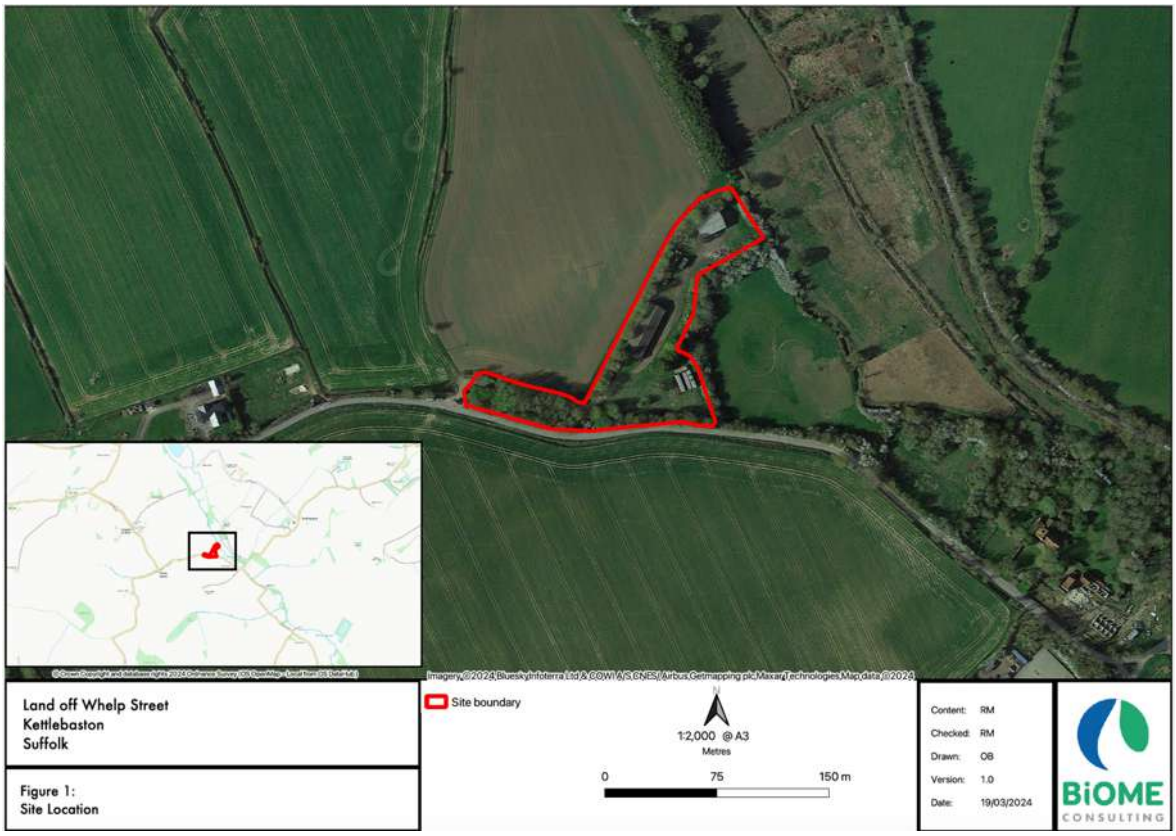
Nesting Birds: The site (including buildings) will be used for nesting by small numbers of common birds. The active nests of wild bird species (with certain exceptions) are legally protected from deliberate disturbance or destruction. If site clearance works are proposed for the bird nesting season (March-August inclusive), it would be recommended to appoint SQE to complete a check for active birds' nests. Should any active nests be found then it would be necessary to delay works until the nesting attempt has reached a natural conclusion. If works are planned for outside of the bird nesting period, then no such check is necessary.

Report Validity: The findings of this report are considered valid until March 2025. If works are delayed beyond this date then an updated assessment of potential impacts will be required.

1. Introduction

BiOME Consulting Ltd was commissioned by James Crawford in February 2024 to undertake a Preliminary Ecological Appraisal (PEA) of a site located off Whelp Street, Kettlebaston, Suffolk (*'the site'*). The site is centred on National Grid Reference TL 95558 49897 (**Figure 1**).

Figure 1. Site Location Plan



1.1. Site Description

The site (**Figure 1**) comprised of patchy semi-improved rough grassland, cleared areas, bramble scrub, and a number of mixed-aged trees within the site and around the site boundary. The buildings/structures within the site comprised a large barn and a hay shed.

The site is located on the west side of the village of Kettlebaston in southern Suffolk. Ditches/streams surrounded the majority of the site with the River Brett

forming the northeastern boundary. Agricultural land was present in all directions and the dominant land use in the wider area.

1.2. Proposed Development

Proposals include converting the main barn into a dwelling with associated minor ground works.

2. Relevant Legislation

Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

The Habitats Regulations convey special protection to a number of species, which are listed in Schedule 2 of the Regulations and are referred to as European Protected Species (EPS). Those potentially relevant to the Project include:

- All UK resident bat species
- Great Crested Newt (GCN) *Triturus cristatus;*
- Otter *Lutra lutra*

Regulation 43 makes it an offence to:

- Deliberately capture, injure or kill any wild animal of a EPS;
- Deliberately disturb wild animals of such a species;
- Deliberately take or destroy the eggs of such a species;
- Damage or destroy a breeding site or resting place of such an animal.

Disturbance in the context of the offences above is disturbance which is likely to impair the ability of the animals to survive, to breed or reproduce, to nurture their young, to hibernate, to migrate; or to affect significantly the local distribution of the species.

Licences can be granted by the relevant Statutory Nature Conservation Organisation (SNCO) for developments (sometime referred to as EPS Licences or Derogation Licences) providing the purposes of the licence is for "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) provides protection to both EPSs and other species including wild birds, Water Voles *Arvicola amphibius* and reptiles.

All wild birds, their nests and eggs are protected, with some rare species afforded extra protection from disturbance during the breeding season (these species are listed in Schedule 1 of the Act). It is illegal to take any wild bird or damage or destroy the nests and eggs of breeding birds. There are certain exceptions to this in respect of wildfowl, game birds and certain species that may cause damage.

In England some species are listed on Schedule 5 of the Act, receiving full protection since 2008. The Wildlife and Countryside Act 1981 together with amending legislation, lists the following offences:

- Intentionally killing, injuring, or taking these species by any method.
- Intentionally or recklessly damaging or destroying these species' place of shelter or protection.
- Intentionally or recklessly damaging disturbing these species whilst they are occupying such a structure or place it uses for shelter or protection.
- Intentionally or recklessly obstructing access to these species' place of shelter or protection.
- Selling, offering for sale, or possessing or transporting for the purposes of sale, any live or dead Schedule 5 species, or any part or derivative, or advertising any of these for buying or selling.

All native reptile species in the UK are subject to partial protection from intentional or reckless killing or injury only.

The Act also includes provisions for the control of invasive non-native species (INNS). Under these provisions it is an offence to:

- Release or allow to escape into the wild any animal which is not ordinarily resident or a regular visitor to Great Britain or is included in Schedule 9 of the Act.
- Plant or otherwise cause to grow in the wild any plant which is included in Schedule 9 of the Act.

People undertaking works in proximity to invasive non-native plant species should take all reasonable steps and exercise all due diligence to avoid committing an offence.

The Invasive Alien Species (Enforcement and Permitting) Order 2019

The order came into effect on the 1 December 2019 to allow for enforcement of EU Regulations (Regulation (EU) No. 1143/2014 on the prevention and management of the introduction and spread of invasive alien species in England and Wales) also known as the IAS Regulations.

It lists 66 species which are of European Union concern. There are currently 19 species listed in the Order:

- Chinese Mitten Crab *Eriocheir sinensis*
- Red Swamp Crayfish *Procambarus clarkii*
- Crayfish Signal *Pacifastacus leniusculus*
- Spiny Cheek Crayfish *Orconectes limosus*
- Muntjac Deer *Muntiacus reevesi*
- Ruddy Duck *Oxyura jamaicensis*
- Egyptian Goose *Alopochen aegyptiacus*
- Grey Squirrel *Sciurus carolinensis*
- Himalayan *Balsam Impatiens glandulifera*
- Fanwort (otherwise known as Carolina Water Shield) *Cabomba caroliniana*
- Giant Hogweed *Heracleum mantegazzianum*
- Water Hyacinth *Eichhornia crassipes*
- Parrots Feather *Myriophyllum aquaticum*
- Floating Pennywort *Hydrocotyle ranunculoides*
- Floating Water Primrose *Ludwigia peploides*
- Water Primrose *Ludwigia grandiflora*
- Giant Rhubarb *Gunnera tinctoria*
- Curly Waterweed *Lagarosiphon major*
- Nuttall's Waterweed *Elodea nuttallii*

Natural Environment and Rural Communities (NERC) Act 2006

The UK Biodiversity Plan (BAP) was a programme designed to help conserve the UK's biodiversity. It led to the production of 436 action plans between 1995 and

1999 to help many of the UK's most threatened species and habitats to recover. A review of the UK BAP priority list in 2007 led to the identification of 1,150 species and 65 habitats that met the BAP criteria at UK level.

Currently 56 Habitats of Principal Importance and 943 Species of Principal Importance are included within Schedule 41 of the NERC Act 2006 and these include species and habitats which were identified in the UK BAP and which continue to be considered to represent the conservation priorities of England in the UK Post-2010 Biodiversity Framework.

National Planning Policy Framework (NPPF) 2021

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

Chapter 15 'Conserving and enhancing the natural environment' details what local planning policies should seek to consider with regard to planning applications:

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

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

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

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

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

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

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

3. Methodologies

3.1. Desk Study

Biological records data were obtained from Suffolk Biodiversity Information Service (SBIS) on 28 February 2024. The provided data included:

- Protected and notable species records within 2km.
- Information in relation to non-statutorily designated sites within 2km.
- Information in relation to nationally and internationally designated sites within 2km.

The below information was obtained from MAGIC[1]:

- Information in relation to internationally designated sites within 5km of the site boundary.
- Information in relation to nationally designated sites within 2km of the site boundary.
- Granted European Protected Species (EPS) mitigation licences within 2km of the site boundary.
- GCN Pond Surveys to inform for District Licencing within 2km of the site boundary.
- GCN class licence returns within 2km of the site boundary.

Habitats and Species of Principal Importance[2] and the Local Biodiversity Action Plan (LBAP) priority habitats and species were also reviewed to compare to those habitats and species either recorded within the site during the survey or recorded as having potential to be present (due to habitat suitability). The LBAP which covers this site is the Suffolk Biodiversity Action Plan[3].

1 MAGIC (2024) [online] available at: www.magic.defra.gov.uk (accessed 28 February 2024)
2 Habitats and Species of Principal Importance are listed under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006.
3 https://www.suffolkbis.org.uk/planning/BAP (accessed 28 February 2024)

3.2. Preliminary Ecological Appraisal Survey

A PEA site survey[4,5] was undertaken on 13 March 2024 by BiOME Principal Ecologist Richard Moores BSc (Hons) MCIEEM with support provided by Graduate Ecologist Olivia Barnes MSci (Hons) (Qualifying member of CIEEM). The survey was completed during suitable weather conditions (cloudy and dry). Prior to the completion aerial imagery was reviewed[6] to provide an indication of habitat types present within the site and in the surrounding area.

During the survey all areas within the site and adjacent areas were walked and habitat types assessed. Signs of protected species, invasive plants (*i*.e. those included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)) and other notable species were also searched for, as well as noting habitats considered to have the potential to support protected species.

The ultimate purpose of this PEA was to identify potentially valuable habitats and plant species assemblages, and to identify the presence and/or potential for protected/controlled species. This report presents an assessment of the ecological significance of the features present and discusses the potential for the site to support legally protected species and/or species of conservation interest which may be impacted by the project.

3.3. Badger Survey

A Badger activity survey, following the method outlined within Harris *et al*. (1989)[7], was completed of all areas within the site and a buffer of 30m (when accessible). The presence of Badgers is indicated through observations of latrines, hair, prints and setts.

4 Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition). The Bat Conservation Trust, London

5 CIEEM (2017) *Guidelines for preliminary ecological appraisal* [online] available at: https://www.cieem.net/guidance-on-preliminary-ecological-appraisal-gpea- (accessed 12 March 2024)

6 Google Maps [online] available at: https://www.google.co.uk/maps (accessed 12 March 2024)

7 Harris, S., Cresswell, P. & Jefferies, D. (1989). *Surveying Badgers*. The Mammal Society

3.4. Bats

3.4.1. Preliminary Roost Assessment – Buildings/Structures

A Preliminary Roost Assessment (PRA) survey of any buildings/structures to be impacted within the site (**Figure 1**) and in areas where disturbance impacts may occur was completed in line with appropriate survey guidance[8] concurrently with the PEA.

The survey involved a systematic search of the buildings/structures within the site to identify potential or actual bat access points and roosting sites, and to locate any evidence of bats such as live or dead specimens, bat droppings, urine splashes, fur-oil staining and/or squeaking noises. It should be noted that sometimes bats leave no visible sign of their presence on the outside of a building (and even when they do wet weather can wash away evidence).

The inspection of buildings and built structures for evidence of bats, which can be conducted at all times of year, was facilitated by the use of ladders, a high-powered torch, endoscope and small dental mirrors to inspect accessible crevices considered likely to support bats.

The potential suitability of the structures for roosting bats was assessed in line with relevant guidelines and allocated to one of the categories detailed within **Table 1**.

Table 1. Guidelines for assessing the potential suitability of proposed development sites for bats

Suitability	Description of Roosting Habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels)
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.

8 Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition). The Bat Conservation Trust, London

Suitability	Description of Roosting Habitats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (*i.e.* unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the categorisation in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
Confirmed Roost	Definitive evidence of roosting bats, i.e. live animals or accumulation of droppings associated with a Potential Roost Feature (PRF).

3.4.2. Foraging and Commuting Habitat

An assessment was made of the suitability of the site and the immediately surrounding landscape to support foraging and/or commuting bats. The assessment was based on the presence of key habitat features such as woodland, scrub, hedgerows, grassland and open water, which are highly attractive to bats. Of potential importance is the presence of unlit (semi)-natural vegetation and habitat linkage between the site and the surrounding landscape.

The quality of bat foraging and commuting habitat has been assessed using the criteria detailed in **Table 2**.

Table 2. Potential flight-paths and foraging habitats

Suitability	Description
None	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

3.5. Limitations

The findings presented in this report represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys can be limited by factors affecting the presence of plants and animals, such as the time of year, migration patterns and behaviour.

Whilst not a full protected species or botanical survey, a PEA allows an experienced ecologist to obtain a sufficient understanding of the ecology of a site in order to either evaluate the conservation importance of the site, and assess the potential for impacts on habitats and species likely to represent a material

consideration in planning terms, or to ascertain that further surveys will be required before such an evaluation can be made.

The survey was undertaken in March, at a time when some floral species would still be in flower/growing. However, it is acknowledged that the survey does not intend to provide an exhaustive species list. It is considered that the habitats present within the site could be appropriately identified and a likely conservation value assigned at the time of the survey.

The absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future.

4. Results

The results of the desk study (**Section 4.1**) and the site survey (**Section 4.2**) are presented below.

4.1. Desk Study

4.1.1. Designated Sites

There was one statutorily designated site and one non-statutorily designated site within the search area; details in relation to which are provided within **Table 3**.

Table 3. Designated sites within the relevant search areas

Site	Approx. distance from site boundary	Qualifying Features
Statutory Sites		
Brent Eleigh Wood Site of Scientific Interest (SSSI)	1.42km/SW	The Brent Eleigh group of woods contains Spragg's, Langley and Camps Woods. Each of these is an important ancient woodland of the wet ash-maple and or pedunculate oak-hornbeam, ash-maple variant type; the main 'heavy soil coppice type' of the calcareous clay soils of Eastern England. In addition, there are some smaller areas of the wet ash-lime-maple and the lowland wet ash-elm woodland types in Camps Wood.
Non-Statutory Sites		
Kettlebaston Wood County Wildlife Site (CWS)	1.41km/E	This small fragment of ancient wood is situated to the south-east of Kettlebaston village. The wood is partly enclosed by a wet ditch and associated woodbank which is thought to be medieval in origin. Recent management work in Kettlebaston Wood has included the extensive clearing of the southern half of the wood together with small scale clearing in the northern section.

4.1.2. Flora and Fauna

Biological records data provided by SBIS and obtained from Magic.gov.uk are summarised within **Section 4.2** when relevant.

4.2. PEA Site Survey

4.2.1. Habitats

A hardcore/earth track was present from the entrance of the site at the southern to the northern boundary, surrounded by patchy semi-improved rough grassland. There were many cleared areas where trees had recently been felled (predominantly conifers) and piles of fresh and older spoil. Vegetation had established on some of the spoil piles, including Common Nettle *Urtica dioica*, Broad-leaved Dock *Rumex obtusifolius* and umbellifers. An area of recently cut bramble *Rubus fruticosus* agg. was present between the large barn and hay shed (**Photograph 1** & **2**).

Photograph 1. Site from north end, looking south

Photograph 2. Site from south end – looking north

A number of mixed-aged trees were present within and surrounding the site, including semi-mature English Oaks *Quercus robur*, Sycamores *Acer pseudoplatanus*, Hawthorns *Crataegus monogyna*, Blackthorns *Prunus spinosa*, Holly *Ilex aquifolium*, willows *Salix* sp. and Field Maples *Acer campestre*. A line of Silver Birch *Betula pendula* was present along the western boundary. Hawthorns, Field Maples, Blackthorns, Holly, Hazel *Corylus avellana*, and higher plants including Dog's Mercury *Mercurialis perennus* and Cuckoo-pint *Arum maculatum* were identified along the southern roadside boundary (**Photograph 3**).

Photograph 3. Site – looking east from near to entrance

Ash *Fraxinus excelsior*, Elm *Ulmus procera* and White Willow *Salix alba* were present between the roadside boundary and along the entrance track to the west of the site. Lesser Celandine *Ficaria verna* and common grasses were also identified along the track (**Photograph 4**).

Photograph 4. Entrance track – looking west towards site entrance

The site boundaries were defined by a network of ditches/streams and the River Brett formed the northeastern boundary. A section of stream was present along the roadside at the entrance **(Photograph 5.)**.

Photograph 5. Stream running parallel with entrance track

This stream was set within a narrow strip of woodland with ancient woodland indicator plants present. The treeline along the roadside was also growing on a low bank suggestive of ancient origin.

The buildings/structures within the site comprised a large barn and hay shed.

4.2.2. Habitat Evaluation

It is recommended that the section of stream that runs parallel with the entrance track and strip of surrounding woodland is protected going forward. Similarly, all waterways should be protected going forward.

The majority of other habitats present within the site are common across England, and locally, and were assessed to be of very limited intrinsic ecological value.

4.3. Protected and Notable Species

4.3.1. Badger

The desk study returned four records of Badger, most recently in 2007. The closest record was 1.10km/NW of the site in 2004.

A comprehensive Badger survey revealed a possible outlying hole (long disused) (**Photograph 5**) found to the east of the main barn close to the site boundary. There was no evidence of recent use, nor was any other Badger evidence recorded in the area. It is likely that Badger use the site and the surrounding habitats for foraging/commuting on occasion.

Photograph 5. Possible Badger hole (long disused)

4.3.2. Bats

4.3.2.1. Desk Study Data

The desk study did not identify any granted EPS development licences in relation to bats within the search area.

Biological records from SBIS returned the following information:

- Western Barbastelle *Barbastella barbastellus* – one record in 2017.
- Unidentified Chiroptera – 20 records in 2009.
- Serotine *Eptesicus serotinus* – one record in 2019.
- Natterer's Bat *Myotis nattereri* – 62 records, most recently in 2016. A maternity roost was recorded in 2004 at St Mary's Church in Brent Eleigh (2km/SW of site).
- Common Pipistrelle *Pipistrellus pipistrellus* – seven records, most recently in 2019.
- Soprano Pipistrelle *Pipistrellus pygmaeus* – two records in 2017 and 2019.
- Unidentified Pipistrelle – one record in 2014.
- Brown Long-eared Bat *Plecotus auritus* – four records, most recently in 2019.

4.3.2.2. Preliminary Roost Assessment

The buildings/structures within the site included a large barn and a hay shed.

The large (main) barn was constructed of corrugated overlapping metal/asbestos sheet walls and an asbestos sheet roof (**Photograph 6**). The building was used to store farm machinery (**Photograph 7**). Brown Rat *Rattus norvegicus* droppings were found internally, but no bat evidence or Potential Roost Features (PRFs) were present.

Photograph 6. Main barn - exterior

Photograph 7. Main barn - interior

The hay shed was an open-sided steel structure storing hay (**Photograph 8**). No bat evidence or PRFs were identified.

Photograph 8. Hay shed

Overall, the main barn and hay shed were classed as being of negligible potential value to roosting bats due to the absence of bat evidence/PRFs (**Table 1**).

4.3.2.3. Foraging and Commuting Habitat

Following the PEA, the site was assessed to be of high value (**Table 2**) to foraging/commuting bats.

4.3.3. Other Section 41 Mammals

It is considered likely that the site supports Hedgehog *Erinaceous europaeus*. This species is most abundant where grassland is in close proximity to woodland, scrub or hedgerows[9]. The desk study yielded 12 records of this species.

SBIS also returned:

- Six records of Brown Hare *Lepus europaeus;*
- Six records of Harvest Mouse *Micromys minutus;*
- Four records of Water Vole *Arvicola amphibius;*
- Two records of Otter.

In 2014, footprints/runs of Water Vole (0.02km/NE) and Otter (0.08km/N) were recorded along the River Brett adjacent to the site; the site supports habitat suitable for Water Vole and Otter. The network of streams surrounding the site and the close proximity of the River Brett, mean that Otter could hunt in these areas. An extensive search of the site, including both barns, was undertaken and no potential holt sites were identified. Two probable Water Vole burrows were found along the streambank parallel to the entrance track (**Photograph 9**).

Photograph 9. Probable Water Vole burrow

9 Harris, S. & Yalden, D.W. (eds.) (2008). *Mammals of the British Isles*: Handbook, 4th Edition. The Mammal Society

All streams/ditches in the area are likely to be used by Water Vole.

It is considered that the proposed works will not impact upon either Otter or Water Vole assuming environmental best practice is maintained during works, most importantly protecting a minimum 3m buffer alongside watercourses to ensure habitat is not adversely impacted.

No further survey work in relation to Section 41 mammal species is considered necessary.

4.3.4. Amphibians

The desk study identified two granted EPS development licences in relation to GCN within the search area, detail is provided within **Table 4.**

Table 4. Granted EPS development licences (2km)

Species	Distance/Direction	Details
Amphibian: GCN	0.99km/NE	**2018:** Damage of a resting place and Destruction of a resting place
Amphibian: GCN	1.34km/NW	**2018:** Damage of a resting place and Destruction of a resting place

No details in relation to GCN class licence returns and pond surveys (to inform GCN district licencing) were returned from the desk study within the search area.

SBIS returned:

- Ten records of GCN. These records were located in the main village of Kettlebaston, with the closest located 0.8km from the site.
- Two records of Common Toad *Bufo bufo*.
- One record of Common Frog *Rana temporaria*.
- Two records of Smooth Newt *Lissotriton vulgaris*.

No ponds were present within the site or a buffer of 0.25km of the site (GCN typically have a maximum routine migratory range of 0.25km from breeding

waterbodies during terrestrial phases[10] and further studies suggest that 95% of newt summer refuges are within 63m of breeding ponds[11]).

Given this, it is considered unlikely that GCN are present, but given the terrestrial habitats within the site are optimal for GCN, the occasional presence of wandering individuals cannot be discounted. No further survey work is considered necessary however, it is recommended that works are completed under the auspices of a GCN Precautionary Working Method Statement (PWMS).

4.3.5. Reptiles

Habitats favoured by reptiles tend to be sunny, well-drained and often south-facing. Typical habitats include grass and heather heathland, chalk downland, coppiced woodland, sand dunes, disused allotments, suburban wasteland, road/railway embankments, golf course roughs, rough grassland, open woodland and woodland edge, immature plantation forestry, sea cliffs, moorland, disused quarries, non-intensive farmland and wild gardens. In addition, Grass Snakes *Natrix helvetica* favour damp habitats[12].

The desk study returned one record of Common Lizard *Zootoca vivipara* (located 1.50km/SW from the site), one record of Grass Snake (1.70km/SW), and one record of a Slow-worm *Anguis fragilis* (2.00km/S).

The habitats on site was considered largely unsuitable for any reptile species. The adjacent grassy fields to the east (the other side of the River Brett) appeared potentially suitable. Precautionary working under the auspices of a PWMS will be required if the proposed works include impacts to areas of established vegetation.

10 Cresswell, W. & Warren, ER. (2004). An assessment of the efficiency of capture techniques and the value of different habitats for the Great Crested Newt *Triturus cristatus*. English Nature report

11 Jehle, R. (2000). The terrestrial summer habitat of radio-tracked Great Crested Newt *Triturus cristatus* and Marbled Newts *T. marmoratus*. Herpetological Journal 10: 137-142.

12 Froglife (1999). *Froglife Advice Sheet 10; Reptile Survey. An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*

4.3.6. Birds

The desk study returned a wide variety of bird species including the following Schedule 1 species: Barn Owl *Tyto alba*, Red Kite *Milvus milvus*, Marsh Harrier *Circus aeruginosus*, and Greylag Goose *Anser anser*.

A number of common bird species were recorded within and overflying the site during the survey, including:

- Wren *Troglodytes troglodytes*
- Blue Tit *Cyanistes caeruleus*
- Yellowhammer *Emberiza citrinella*
- Great Tit *Parus major*
- Robin *Erithacus rubecula*
- Chaffinch *Fringilla coelebs*
- Red-legged Partridge *Alectoris rufa*
- Chiffchaff *Phylloscopus collybita*
- Goldfinch *Carduelis carduelis*
- Dunnock *Prunella modularis*
- Blackbird *Turdus merula*
- Skylark *Alauda arvensis*
- Green Woodpecker *Picus viridis*
- Lapwing *Vanellus vanellus*
- Rook *Corvus frugilegus*
- Song Thrush *Turdus philomelos*
- Jackdaw *Corvus monedula*
- Pheasant *Phasianus colchicus*
- Bullfinch *Pyrrhula pyrrhula*
- Linnet *Linaria cannabina*
- Carrion Crow *Corvus corone*
- Stock Dove *Columba oenas*
- Meadow Pipit *Anthus pratensis*

Stock Dove and Robin were present inside the main barn. It is considered possible that a variety of common species could use the site (including the barns) for nesting. The site and adjacent areas where disturbance could occur is considered

unsuitable for any nesting Schedule 1 species. No evidence or potential for Barn Owl was identified.

No further survey work in relation to breeding/nesting birds is required. However, mitigation is required (**Section 5**) to ensure that a breach of relevant legislation does not occur.

4.3.7. Invertebrates

The desk study returned a wide variety of invertebrate species.

Given the nature of habitats within the site, it is considered unlikely that the site supports any important species/populations. Invertebrates are not considered further.

4.3.8. Invasive Plants

One invasive non-native species of plant (INNS) (listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended)) was returned from the desk study: Himalayan Balsam *Impatiens glandulifera*.

No INNS were recorded during the survey but it should be noted that certain species would not have been evident given the time of year which the survey wads completed.

4.3.9. Other Species

Many animal trails were observed within the site. These trails were predominantly deer, and deer droppings were found.

5. Conclusions and Recommendations

A PEA site survey/complimentary desk study have been completed to inform the proposed development of land off Whelp Street, Kettlebaston, Suffolk. These surveys identified the below detailed ecological considerations/requirements, along with recommendations to ensure that the works are carried out lawfully and in such a manner to minimise ecological impacts.

5.1. General Mitigation

Standard pollution control measures should be implemented during construction to protect habitats on/adjacent to the site. It is recommended that works are completed under the auspices of a Construction Environmental Management Plan (CEMP) or similar.

5.2. Designated Sites

There was one statutorily (a SSSI) and one non-statutorily (a CWS) designated site within the 2km search area.

Taking into account the nature of the proposals, the site and the location/qualifying features of the identified designated site, no impacts in relation to designated sites are anticipated and no further works are required.

5.3. Habitats

The site comprised of patchy semi-improved rough grassland, cleared areas, bramble scrub, and a number of mixed-aged trees within and around the site boundary. The buildings/structures within the site included a large barn and hay shed.

The site boundaries were defined by a network of ditches/streams and the River Brett formed the northeastern boundary. A section of stream was present along the roadside at the entrance. This stream was set within a narrow strip of woodland with ancient woodland indicator plants present. The treeline along the roadside was also growing on a low bank.

It is recommended that the section of stream that runs parallel with the entrance track and strip of surrounding woodland is protected going forward. Similarly, all waterways should be protected going forward.

The majority of other habitats present within the site are common across England, and locally, and were assessed to be of very limited intrinsic ecological value.

5.4. Badger and other ground dwelling fauna

What was considered to potentially be a Badger hole (long-disused) was present within the site (within 30m of the proposed barn conversion site). This disused hole does not receive any legal protection given the absence of any nearby Badger evidence. However, it is recommended that an update assessment be completed prior to works commencing.

The occasional presence of foraging Badgers in the site is considered possible. To ensure that Badgers or other ground dwelling fauna come to no harm during construction the following measures are recommended:

- covering trenches at the conclusion of each working day, or include a means of escape for any animal falling into excavations, and
- any temporarily exposed open pipe system should be capped in such a way as to prevent Badgers gaining access.

5.5. Bats

5.5.1. Roosts

The onsite buildings were assessed as being of negligible value to roosting bats. No further survey work in relation to roosting bats is considered necessary. In the unlikely event that any bats are encountered during works, works must cease and the advice of a Suitably Qualified Ecologist (SQE) sought.

It Is understood that no further trees are proposed for removal. It is considered that the proposed works would not significantly adversely impact upon bats roosting in retaining trees, should they be present.

5.5.2. Foraging/commuting habitat

The site was assessed as being of high potential value to foraging/commuting bats. Potential impacts to foraging/commuting bats should be minimised through the production of a sympathetic site lighting plan.

Artificial lighting can result in impacts to bats via a variety of mechanisms[13]. Many night flying species of insect are attracted to light, especially those lamps that emit an ultra-violet component, and particularly if it is a single light source in a dark area. Studies have shown that Noctule, Leisler's *N. leisleri* Serotine and pipistrelle *Pipistrellus* ssp. bats swarm around white mercury street lights (this would also apply to metal halide) feeding on the insects attracted to the light. Such behaviour is not true for all bat species, notably the slower flying broad-winged species such as long-eared bats *Plectotus spp*, *Myotis* species and Barbastelle. In addition, it is also thought that insects are attracted to lit areas from further afield. This is thought to result in adjacent habitats supporting reduced numbers of insects. This is a further impact on the ability of the light-avoiding bats to be able to feed. It is noticeable that most of Britain's rarest bats are among those species listed as avoiding light. Clearly, effective mitigation where there is potential for impacts on bats has importance in the conservation of these species.

Artificial lighting is thought to increase the chances of bats being preyed upon. Many avian predators will hunt bats which is one reason why bats avoid flying in the day. Observations have been made of a diurnal raptor, Kestrel *Falco tinnunculus*, hunting at night under the artificial light along motorways.

Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. Artificial lighting disrupts the normal 24-hour pattern of light and dark which is likely to affect the natural behaviour of bats. Bright light may reduce social flight activity and cause bats to move away from the lit area. Studies have shown that continuous lighting along linear features (i.e. roads/paths) creates barriers which some bat species cannot cross. For example, Daubenton's Bats move their flight paths to avoid streetlamps.

The lighting scheme for the development should be sympathetic to bats, this should include:

13 Bat Conservation Trust (2018). *Guidance Note 08/18; Bats and Artificial Lighting in the UK.*

- The use of low-pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.
- Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.
- The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low-level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.
- The light should be as low as guidelines permit. If lighting is not needed, don't light.
- The times during which any lighting is on should be limited to provide some dark periods.
- If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.
- The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

5.6. Other Section 41 Mammals

It is considered possible that Hedgehog, Otter and Water Vole occur within the site. Mitigation during construction in relation to Badger will ensure that no Section 41 mammals are harmed.

It is considered that the proposed works will not impact upon either Otter or Water Vole assuming environmental best practice is maintained during works, most

importantly protecting a minimum 3m buffer along watercourses to ensure habitat is not adversely impacted.

No further work in relation to other Section 41 mammals is considered necessary. It is recommended to include ground levels gaps in any new fencing, to allow free movement of small fauna around the site.

5.7. Amphibians

GCN are considered likely absent from the site based on desk study and absence of ponds within 0.25m of the site. No further survey work in relation to GCN is considered necessary, but given optimal terrestrial habitat within the site and their confirmed presence in the wider area, the occasional wandering individual present in the site cannot be discounted. Therefore, it is recommended that works are completed under the auspices of a PWMS, to ensure no GCN come to harm.

5.8. Reptiles

The habitat on site was considered largely unsuitable for any reptile species. The adjacent grassy fields to the east (the other side of the River Brett) appeared potentially suitable. Precautionary working (under the auspices of a PWMS) will be required if the proposed works include impacts to areas of established vegetation.

In the unlikely event that any reptiles are disturbed during works, works must cease and the advice of an SQE should be sought.

5.9. Nesting Birds

The site (including buildings) will be used for nesting by small numbers of common birds. The active nests of wild bird species (with certain exceptions) are legally protected from deliberate disturbance or destruction. If site clearance works are proposed for the bird nesting season (March-August inclusive), it would be recommended to appoint SQE to complete a check for active birds' nests. Should any active nests be found then it would be necessary to delay works until the nesting attempt has reached a natural conclusion. If works are planned for outside of the bird nesting period, then no such check is necessary.

5.10. Invertebrates

The site is considered unlikely to support significant populations/species of invertebrates.

No further survey work in relation to invertebrates is considered necessary.

5.11. Opportunities for Enhancement/Biodiversity Net Gain

The National Planning Policy Framework (NPPF) sets out national planning policies for the protection of biodiversity (and geological) conservation through the planning system. A key principle of NPPF is that, '*Opportunities to incorporate biodiversity in and around developments should be encouraged*'. Taking the requirements of NPPF into account, opportunities should be sought where possible for nature conservation enhancement at this site. Opportunities exist to create valuable habitats and to manage existing habitats to maximise ecological benefit/gain and these should be incorporated into a standalone ecological enhancement plan and/or biodiversity net gain assessment.

5.12. Report Validity

The findings of this report are considered valid until March 2025[14]. If works are delayed beyond this date then an updated assessment of potential impacts will be required.

14 CIEEM (2019). *Advice Note on The Lifespan of Ecological Reports and Surveys* [online] available at: https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf