

Preliminary Ecological Appraisal

**Land at Oaklands Farm, Leywood Road,
Harvel, Kent DA13 0UD**

Report to:
Mr. Nigel Merchant

8th December 2021



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1. Summary

Background

- 1.1 Land at Oaklands Farm, Harvel has been proposed as the location of a new development project that will include conversion of an existing barn into a new holiday let.
- 1.2 Calumma Ecological Services was commissioned to undertake a preliminary ecological assessment of the site that advises on the need for additional survey work and mitigation.

Priority Habitats

- 1.3 The proposed development site includes an area of improved grassland that is bordered by deciduous woodland. Several mature trees are situated within the grassland.
- 1.4 The scale and nature of proposed disturbance means that additional botanical surveys are not considered necessary for the application.
- 1.5 The site is located close to statutory and non-statutory sites designated for their nature conservation interest.

Birds

- 1.6 Available habitat offers habitat for nesting birds. There was no evidence of nesting barn owl within the barn.
- 1.7 **Care must be taken to ensure that nesting birds are not disturbed during proposed works.**

Bats

- 1.8 Mature trees within and adjacent to the site display holes, cracks and crevices. Several trees are considered to offer potential for roosting bats.
- 1.9 Current proposals indicate that no trees will be disturbed. Additional survey work for bats will only be required if subsequent proposals require trees to be disturbed or removed.

Reptiles

- 1.10 Grassland within the proposed development area has a relatively simple structure that appears to be maintained by livestock grazing.
- 1.11 Additional survey work for reptiles is not considered necessary.

Amphibians

- 1.12 No ponds are known to be located within 250 m of the boundary of the proposed development area.
- 1.13 The scale and nature of the proposed development is unlikely to impact the local conservation status of great crested newt.
- 1.14 Additional survey work for amphibians is not considered necessary.

Badgers

- 1.15 Several animal trails were observed within the grassland. No other evidence of badger such as snuffle holes, latrines or setts was noted.
- 1.16 **The scale and nature of proposed works means that additional survey work for badgers is not considered necessary, appropriate actions should be undertaken to ensure that foraging badgers are not disturbed.**

Dormouse

- 1.17 Available habitat within the adjacent woodland is highly suitable for dormouse.
- 1.18 Current proposals indicate that woodland will not be disturbed. Additional survey work for dormouse will only be required if subsequent proposals require trees and shrubs to be disturbed or removed.

Water Vole

- 1.19 No waterbodies suitable for water vole are located within or adjacent to the proposed development site.
- 1.20 Additional survey work for water vole is not considered necessary.

Invertebrates

- 1.21 Available habitat within the proposed development area is considered to offer opportunities for a range of invertebrates.
- 1.22 The scale and nature of proposed development means that additional survey work for invertebrates is not considered necessary.

Other Considerations

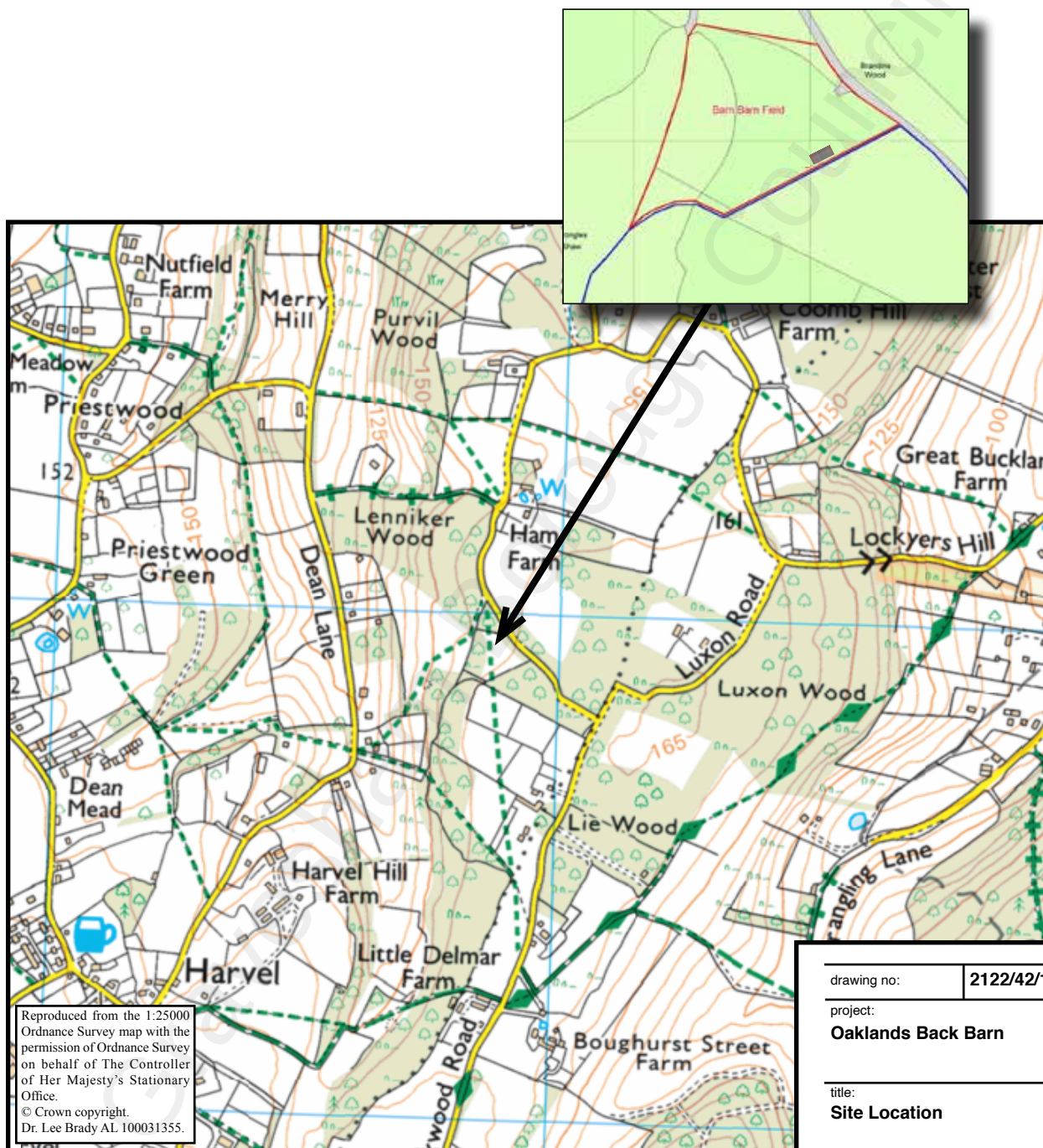
- 1.23 Hedgehog could shelter and/or forage within suitable vegetation within the application area.
- 1.24 On the basis of the site assessment it is not expected that other protected species will be found to be present on the site.

2. Site Location and Assessment

Site Name:	Land at Oaklands Farm, Harvel - <i>the site</i> ; Fig. 2.1
Grid Reference:	TQ 659 638
County:	Kent
Planning Authority:	Gravesham
Planning Ref:	20211161
Natural Area:	North Downs
Client:	Mr. Nigel Merchant
Proposed Disturbance:	Conversion of barn into residential let.
Survey Request:	Preliminary Ecological Appraisal
Surveyor:	Lee Brady PhD, BSc (Hons), MCIEEM
Assessment Period:	1st December 2021
Limitations:	This assessment did not include detailed surveys of protected species. Scoping surveys assess likely presence of species on a site and recommend follow-up survey work, management and mitigation as appropriate. This report may need to be updated if new information becomes available (e.g. ponds not previously known to be present).
Reliance:	Information, including any survey data, contained within this report must only be relied upon for a maximum period of one year from the date of the report.

**Fig. 2.1 Land at Oaklands Back Barn, Kent
(TQ 659 638)**

Location of study site.



3. Legal Protection and Planning

The legal protection of animals and plants in the United Kingdom is governed by several different regulations and conventions. Principally, these include:

- The Wildlife & Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 and
- The Habitats and Species Directive (92/43/EC) enacted through the Conservation of Habitats and Species Regulations 2017. Development works affecting listed species are subject to a licence granted by an appropriate authority. This authority is currently Natural England.
- The Natural Environment and Rural Communities (NERC) Act 2006
- The Hedgerow Regulations 1997

Species and habitats receive legal protection that may prohibit sale, disturbance and/or killing/injury.

3.1 Flora

A number of plant species are protected under Section 13 of the amended 1998 Wildlife and Countryside Act of 1981. It is an offence to intentionally pick, uproot or destroy any wild plant listed in Schedule 8 of the Act. The list includes both higher plants including several of the rarer orchids and lower plants including several mosses and lichens.

3.2 Birds

All wild birds (birds in a wild state resident in or visiting Great Britain) and their nests and eggs are protected under the Wildlife & Countryside Act 1981. Particular emphasis is given to the protection of breeding birds. With certain exceptions, it is an offence to intentionally kill, injure or take wild birds, take, damage or destroy the nest of wild birds while in use or being built, take or destroy the eggs of wild birds, disturb wild birds listed in Schedule 1 when nest building or at a nest containing eggs or young, or disturb dependent young of wild birds.

3.3 Bats

All species of bat and their breeding sites or resting places (roosts) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981. It is an offence for anyone to intentionally kill, injure or handle a bat, to possess a bat (whether live or dead), deliberately disturb a roosting bat, or sell or offer a bat for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter.

3.4 Reptiles

All native reptiles are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (WCA 1981). It is an offence for anyone to intentionally kill or injure a 'widespread' reptile species (viviparous lizard, slow-worm, grass snake or adder), or sell or offer for sale without a licence.

The sand lizard and smooth snake, their breeding sites or resting places (any structure that may offer refuge) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010. It is an offence for anyone intentionally to kill, injure or handle either of these two species, to possess an animal (whether live or dead), deliberately disturb a sheltering animal, or sell or offer an animal for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by sand lizards and smooth snakes for shelter.

3.5 Amphibians

All native amphibians are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (WCA 1981). It is an offence for anyone to sell or offer for sale any native amphibian species without a licence.

The great crested newt and natterjack toad, their breeding sites (typically ponds) or resting places (typically a terrestrial habitat that offers refuge) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010. It is an offence for anyone to intentionally kill, injure or handle either of these two species, to possess an animal (whether live or dead), deliberately disturb a sheltering animal, or sell or offer an animal for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by natterjack toads or great crested newts for shelter.

3.6 Badger

Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett. The term 'badger sett' is normally understood to mean the system of tunnels and chambers, in which badgers live, and their entrances and immediate surrounds. The 1992 Act specifically defines a sett as "any structure or place which displays signs indicating current use by a badger".

3.7 Hazel Dormouse

Individual animals, their breeding sites or resting places (nests) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981. It is an offence for anyone intentionally to kill, injure or handle a dormouse, to possess a dormouse (whether live or dead), deliberately disturb a dormouse, or sell or offer a dormouse for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by dormice for shelter, whether they are present or not.

3.8 Water Vole

Until the 6th April 2008 water voles received partial protection under the Wildlife & Countryside Act 1981 (as amended). This included protection from killing or taking by

certain prohibited methods. Breeding and resting places (burrows) were fully protected from destruction or obstruction; it was also an offence to disturb them in these places. From April 2008 water voles and their resting places are fully protected in England. It is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It continues to be an offence to disturb them in their breeding or resting places.

3.9 Invertebrates

A small number of invertebrates including beetles, crickets, butterflies and moths are protected under Section 9, Schedule 5 of the amended 1998 WCA 1981 against deliberate killing, injuring and taking. Other species receive partial protection under the same act. For example, it is an offence for anyone to sell or offer for sale a stag beetle without a licence. The stag beetle is also listed as a Priority Species on the UK BAP.

3.10 The National Planning Policy Framework

The National Planning Policy Framework (2019) (NPPF) has reformed the planning system, to make it less complex and more accessible, to protect the environment and to promote sustainable growth. Regarding ‘Conserving and enhancing the natural environment’, when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying a number of principles.

3.11 Miscellaneous Planning Policy

Previous planning policy refers to UK Biodiversity Action Plan (BAP) habitats and species as being a material consideration in the planning process. Although such habitats and species remain material considerations in the planning process, they are now described as *Species and Habitats of Principal Importance for Conservation* in England, or simply priority habitats and priority species. The list of habitats and species is still derived from Section 41 of the Natural Environmental and Rural Communities (NERC) Act 2006. Note that as was previously the case when it was a BAP priority species, hen harrier continues to be regarded as a priority species although it does not appear on the Section 41 list.

3.12 Habitats Regulations Assessment

Where a proposed development project is located within or close to an area designated or proposed for designation under the Birds and/or Habitats Directives (European sites) and/or the Ramsar Convention (Ramsar sites) an Appropriate Assessment under Regulation 61(1) of the Habitat Regulations may be required.

Regulation 63 states that:

“A competent authority, before deciding to undertake, or give any consent, permission, or other authorisation for a plan or project which:

(a) is likely to have significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and

(b) is not directly connected with or necessary to the management of the site must make an appropriate assessment of the implications for the site in view of that site’s conservation objectives”.

The decision as to whether an Appropriate Assessment is required or not is based upon an assessment of 'Likely Significant Effect' (LSE), which is recognised as being a statement that the anticipated effects of the proposal will be more than trivial. That is the anticipated changes resulting from the proposal have the potential to impact on a designated, or proposed to be designated, European/Ramsar site. It does not automatically follow that an impact will occur, or that the impact would be significant, with a decision of LSE being purely an indication of the need for an Appropriate Assessment.

3.13 Biodiversity Net Gain

National policy sets out that planning should provide biodiversity net gains where possible. National Planning Policy Framework (NPPF) Paragraphs 170(d), 174(b) and 175(d) refer to this policy requirement and the Natural Environment Planning Practice Guidance (PPG) provides further explanation on how this should be done. Delivering net gain is also referred to in the National Infrastructure Commission's Design Principles, National Policy Statements and the National design guide.

For more information see:

<https://www.local.gov.uk/pas/topics/environment/biodiversity-net-gain>

4. Desktop Study

4.1 MAGIC Geographic Information System

<http://magic.defra.gov.uk>

4.1.1 Habitat Designations

Nearby priority habitat designations are illustrated in Appendix I.

Information available through MAGIC indicates that habitat the proposed development site is bordered by deciduous woodland.

Other habitats located nearby include:

- Ancient and Semi-Natural Woodland (10 m east).

4.1.2 Statutory Designated Areas

The locations of nearby designated areas are illustrated in Appendix II.

Information available through MAGIC indicates that land within the proposed development site is located within the Kent Downs Area of Outstanding Natural Beauty.

Other statutory designated sites located nearby include:

- Halling To Trottiscliffe Escarpment SSSI (0.7 km east);
- North Downs Woodlands SAC (0.7 km east);
- Houlder and Monarch Hill Pits, Upper Halling SSSI (2.5 km south east).

4.1.3 Non-statutory Designated Areas

The locations of nearby designated areas are illustrated in Appendix II.

Information available through MAGIC indicates that land within the proposed development site has no specific designations associated with it.

4.1.4 Site of Special Scientific Interest Impact Risk Zone

Natural England has created a tool that is accessed via MAGIC to determine the risk of development impact on designated areas (including SSSIs, SACs, SPAs and Ramsar sites). Available information indicates that the proposed development **is located** within a SSSI risk zone.

The SSSI risk tool provides guidance on when the Local Planning Authority should consult Natural England (Table 4.1). Natural England will then provide advice on any potential impacts and how these might be avoided or mitigated.

4.1.5 European Protected Species Licences

Information available via MAGIC reveals that no EPS mitigation licences have been issued for works within 2 km of the proposed development site. EPS mitigation licences have been issued for common pipistrelle bat and brown long-eared bat within 5 km of the proposed development site.

4.1.6 Great Crested Newt Class Survey Licence Returns

Information available via MAGIC reveals that great crested newt has not been recorded within 5 km of the proposed development site.

4.2 Kent Landscape Information System (KLIS)

<https://webapps.kent.gov.uk/KCC.KLIS.Web.Sites.Public/Default.aspx>

4.2.1 Kent Habitat Survey 2012

Habitat designations are illustrated in Appendix III.

The 2012 Kent Habitat Survey characterised the study area as (1) improved grassland and (2) broadleaved, mixed and yew woodland.

4.2.2 Local Wildlife Sites

Nearby designations are illustrated in Appendix IV.

Information available through KLIS indicates that land within the site forms part of Strawberry Hill, Pasture & Woodland, Meopham LWS.

Other local wildlife sites located nearby include:

- Luxon Wood, Great Buckland (10 m east);
- Pasture and woods south of Luddesdown (740 m north east).

4.3 Records Searches

Available records for protected species have been obtained from Kent Reptile and Amphibian Group.

Note that the availability of records is directly related to survey effort. A lack of records does not necessarily indicate the absence of protected species.

4.3.1 Kent Reptile and Amphibian Group (KRAG)

KRAG is one of the primary data holders for reptiles and amphibians in Kent. Information supplied by KRAG indicates that common frog and common toad have been recorded from the local area (Ref. CES/21/263, Appendix V). The closest great crested newt record was a historical observation reported from a site located 3.59 km to the south.

Viviparous lizard, slow-worm, grass snake and adder have also been recorded from the local area. The closest reptile record is for adder, recorded 100 m to the south.

KRAG has prepared a summary risk assessment that describes the likely presence of herpetofauna (Table 4.2). The risk assessment is based on statistical analysis of available distribution data but does not take into consideration the quality of habitat available within the proposed development area.

Planning Category	Consult NE if Proposals Include
All Planning Applications	n/a
Infrastructure	Airports, helipads and other aviation proposals.
Wind & Solar Energy	n/a
Minerals, Oils & Gas	n/a
Rural Non Residential	n/a
Residential	n/a
Rural Residential	n/a
Air Pollution	Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m ² , slurry lagoons & digestate stores > 200m ² , manure stores > 250t).
Combustion	General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.
Waste	Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.
Composting	Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.
Discharges	n/a
Water Supply	n/a
Notes	n/a

Table 4.1. SSSI Risk Assessment for proposed development site: When to consult Natural England.

Species	Likelihood of Presence
<i>Amphibians</i>	
Common Frog	HIGH
Common Toad	Likely
Natterjack	<i>n/a</i>
Smooth Newt	Possible
Palmate Newt	HIGH
Great Crested Newt	Possible
<i>Reptiles</i>	
Viviparous Lizard	Possible
Slow-worm	Possible
Sand Lizard	Unlikely
Grass Snake	Possible
Adder	HIGH
Smooth Snake	<i>n/a</i>

Table 4.2. Herpetofauna risk assessment prepared by Kent Reptile and Amphibian Group.

5. Proposed Development and Summary Site Description

5.1 Site Location

The proposed development site is located within a rural area in the North Kent Plain Natural Area (English Nature, 1998). The site is accessed directly from Leywood Road.

5.2 Proposed Development

The proposal is to convert an existing barn into a holiday let with associated access and services. The red line around the barn illustrated in Fig. 5.1 will be the curtilage for the building so there will be no garden. The development will include provision of electric and waste water services to the building. The latter will include a small sewage treatment unit, positioned between the barn and the road.

The overall site boundary is approximately 1.29 Ha.

The extent of the proposed development area within the site is illustrated in Fig. 5.1.

5.3 Aquatic Habitat

Ponds located within the local area have been identified using the following sources:

- Ordnance Survey (<https://www.bing.com/maps>)
- MAGIC (<http://magic.defra.gov.uk>)
- Google Earth

No ponds are known to be located within 250 m of the site boundary. Two ponds are located within 500 m. Other small ornamental ponds could occur in nearby residential gardens. The search area for waterbodies is illustrated in Fig. 5.2.

5.4 Terrestrial Habitat

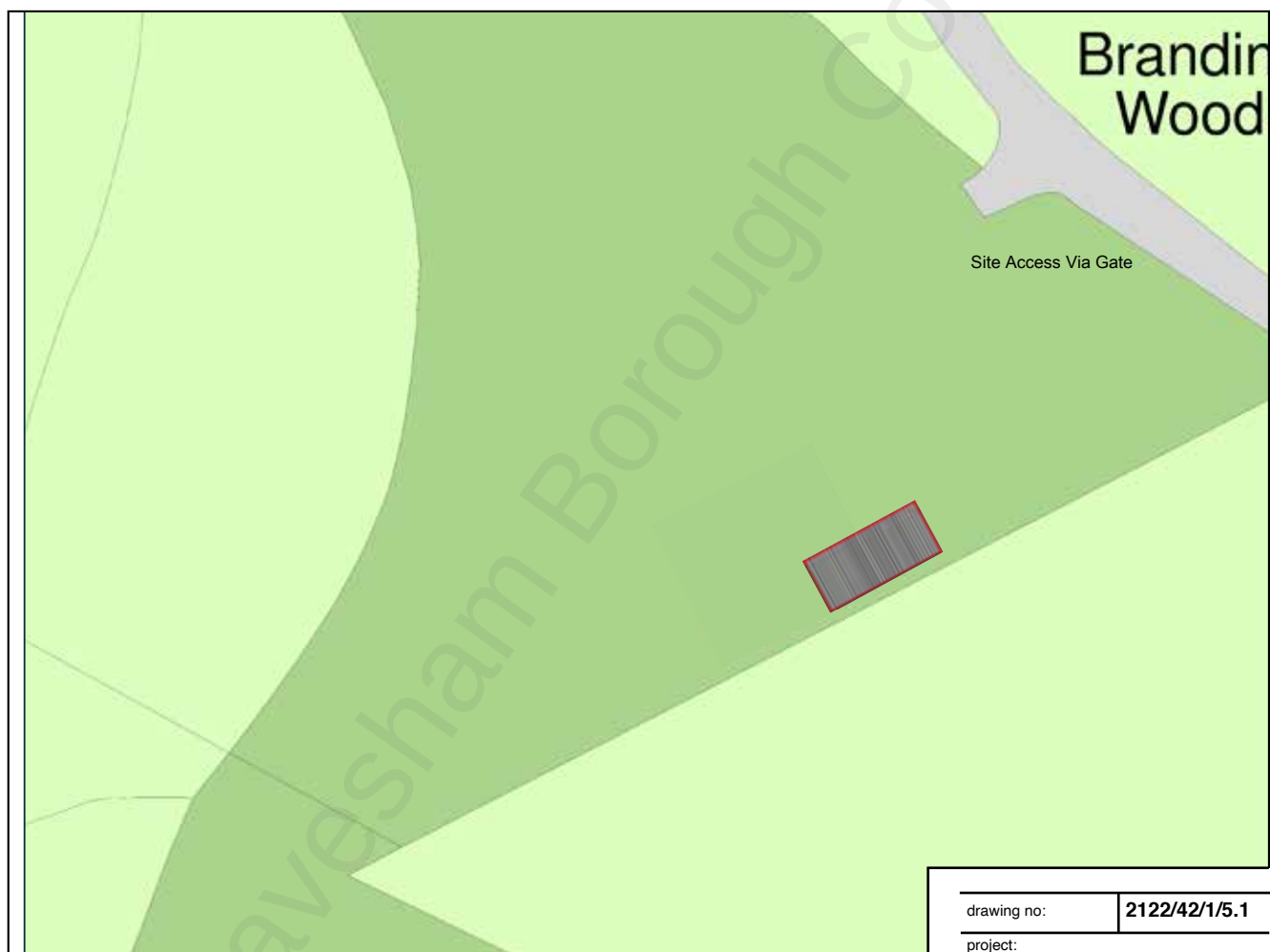
Land within the site includes an area of improved grassland that is bordered by deciduous woodland.

Habitat available within the proposed development area is illustrated in Figs. 5.3 - 5.4.

5.5 Buildings

A single open fronted barn (B1) is located within the application area.

Fig. 5.1 Proposed Development Area



drawing no: 2122/42/1/5.1

project:
Oaklands Back Barn

title:
Development Area

scale: **N.T.S.** date: **Dec 2021**



13 Woodside Cottages,
Dunkirk,
Kent ME13 9NY

Tel/Fax: 01227 751408
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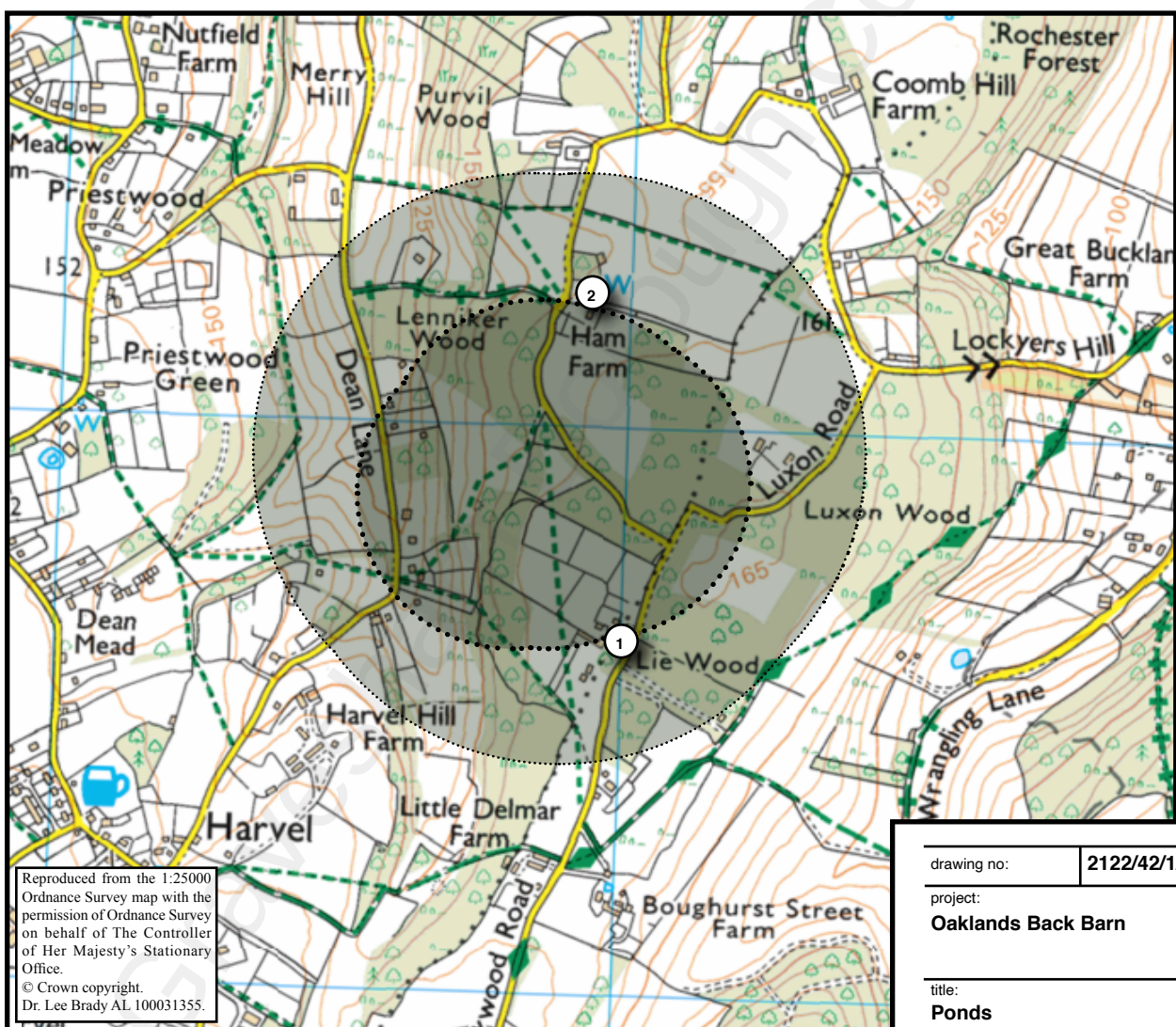
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Fig. 5.2 Ponds

Figure illustrates ponds known to occur within recommended area of search for great crested newt.

Two ponds are known to be located within 500 m of the proposed development area boundary. Other small ornamental ponds may be present in nearby residential gardens.

For ponds located more than 250 m from a proposed development, Natural England recommend that survey work is most appropriate when (a) the pond has the potential to support a large population, (b) the development includes particularly favourable habitat, (c) the development will have a significant impact on available habitat, (d) there is an absence of dispersal barriers.



Key to Symbols

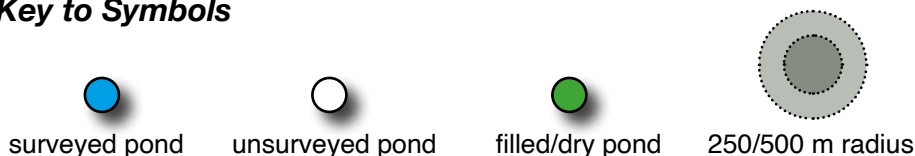


Fig. 5.3 Habitats

Indicative location of proposed development site, illustrating existing habitat (main plate 2020).

The proposed development site includes an area of improved grassland bordered by deciduous woodland. A single building (barn) is located within the site (B1).



drawing no: 2122/42/1/5.3

project:
Oaklands Back Barn

title:
Habitats

scale: N.T.S.

date: Dec 2021



Fig. 5.4 Site Photographs

Figure illustrates habitat features located within the study area.

The proposed development area is characterised by an area of short sward improved grassland that is bordered by deciduous woodland.

Proposals include conversion of an existing barn into a holiday let. The barn was found to offer negligible potential for roosting bats but could support nesting birds.



Adjacent woodland is a priority habitat. Mature trees include features suitable for roosting bats (e.g. woodpecker holes; inset). Woodland is highly suitable for dormouse. Adder has been recorded from a nearby location and open glades within woodland are considered suitable for this species.

Several mature trees are located within the grassland field. Available information indicates that trees and woodland will not be disturbed by proposed development activities.

drawing no:	2122/42/1/5.4
project:	Oaklands Back Barn
title:	Available Habitat
scale: N.T.S.	date: Dec 2021



13 Woodside Cottages,
Dunkirk,
Kent ME13 9NY
Tel/Fax: 01227 751408
info@calumma.co.uk
www.calumma.co.uk

6. Habitat Assessment

6.1 Habitats

Vegetation within the site is dominated by improved grassland that appears to be maintained by livestock grazing. Deciduous woodland that represents a priority habitat borders the site. Trees present within the woodland include: oak (*Quercus robur*), field maple (*Acer campestre*), holly (*Ilex aquifolium*), hornbeam (*Carpinus betulus*), sweet chestnut (*Castanea sativa*), silver birch (*Betula pendula*), hawthorn (*Crataegus monogyna*) and hazel (*Corylus avellana*).

Much of the ground within the limited area included in the current proposals is dominated by improved grassland. Available information indicates that no mature trees or areas of woodland/trees will be disturbed. The scale and nature of the proposed development means that further botanical surveys are not considered necessary for the current application. However, the applicant is advised that deciduous woodland around the site boundary is of high biodiversity value and must not be subject to any negative impacts from the proposed scheme.

Habitat	Area (Ha)	Length (m)
Improved Grassland	0.58	-
Deciduous Woodland	0.71	-

Table 6.1. Available Habitat (all measurements are approximate).

6.1.1 Designated Sites

Land within the site ownership forms part of Strawberry Hill, Pasture & Woodland, Meopham Local Wildlife Site. The proposed barn works are outside of the designated area. The site is also located close to other designated sites the closest of which is situated on the opposite side of Leywood Road.

Although proposed works are not considered likely to significantly impact on these sites, the applicant is advised that appropriate safeguards will need to be put in place to ensure that visitors to the proposed holiday let do not cause an increase in disturbance to designated areas.

7. Protected Species Assessment

Species/Species Group	Likely Presence	Evidence	Further Survey Required?
Birds	Possible	The barn includes features suitable for nesting birds. No evidence of barn owl was observed.	No.
Bats	Likely	The barn is open fronted and does not include features considered suitable for roosting bats. Adjacent trees offer roost potential and the site is likely to support foraging and commuting bats.	Surveys only required if trees will be disturbed.
Reptiles	Negligible	Grassland within the site is short with low structural complexity. Nearby areas of open woodland offer potential for species such as adder, but these are not considered likely within the application area.	Surveys only required if woodland areas will be disturbed.
Amphibians	Negligible	Habitat offers good potential for foraging and sheltering amphibians, but the lack of nearby ponds significantly reduces the likelihood of presence.	No.
Badgers	Possible	Animal trails were observed in grassland but no evidence of snuffle holes, latrines or setts was observed.	No.
Dormouse	Possible	Adjacent deciduous woodland offers good habitat potential for dormouse. Dormouse is unlikely to be present in grassland within the application area.	Surveys only required if woodland areas will be disturbed.
Water Vole	Negligible	No suitable waterbodies present.	No.
Invertebrates	Negligible	Adjacent deciduous woodland offers good habitat potential. Only common widespread species likely to be present within improved grassland habitat within the application area.	No.
Other	Possible	Available habitat could support foraging and sheltering hedgehog.	No.

Table 7.1. Summary of protected species likely presence and recommendations for further survey work. See text for further details.

7.1 Birds

Within the local area there are areas of woodland, gardens, hedgerows and grassland that are expected to support a varied bird population. Vegetation located in and around the site will support nesting birds. The barn includes features suitable for nesting birds such as blackbird and robin.

No evidence of barn owl was observed within the site and it is considered unlikely that any species afforded protection by inclusion on Schedule 1 of the Wildlife & Countryside Act 1981 will be disturbed by proposed development activities and additional bird survey work is not considered necessary.

7.2 Bats

Local habitat features include woodland, gardens and buildings that provide potential roosting, foraging and commuting opportunities for bats.

7.2.1 Building Inspection

A buildings inspection was undertaken which followed the survey guidelines recommended in The Bat Workers' Manual (Mitchell-Jones, 2004) and the Bat Conservation Trust's Good Practice Guidelines (BCT, 2016). Results are summarized in Table 7.1.

Features and evidence of bat use and potential habitat that were considered when assessing buildings included:

- Roof and wall construction;
- Any bat droppings and/or staining on external walls;
- Scattered or accumulated bat droppings (identified by their dry, powdery texture when compressed) around entrances to potential roosts;
- Oily staining, scratch marks and/or urine staining around entrances to potential roosts;
- Places where cobwebs have been swept away;
- The presence of live or dead bats; and
- Features that have the potential to be bat roosts or to provide access to roosting opportunities within the building. These include missing tiles, cavities in woodwork or masonry and any crevices within the building.

Building Number	Description	Bat Potential	Further Survey Required?
1	Open fronted wooded barn. Does not include features considered suitable for roosting bats.	Negligible	No.

Table 7.1. Building assessment for bats.

7.2.2 Trees

A preliminary tree inspection was undertaken which followed the survey guidelines recommended in The Bat Workers' Manual (Mitchell-Jones, 2004) and the Bat Conservation Trust's Good Practice Guidelines (BCT, 2016).

Features and evidence of bat use and potential habitat that were considered when assessing buildings included:

- Natural holes (including holes made by woodpecker);
- Cracks/splits in major limbs;
- Loose bark;
- Hollows/cavities;
- Dense epicormic growth;
- Bird/bat boxes;
- Scratches/staining around entry points;
- Bat droppings in, around or below entrances;
- Smoothing of surfaces around cavities.

Mature trees located within and adjacent to the site include specimens with flaking bark and woodpecker/rot holes. These provide potential roost features for crevice roosting bat species. Available information indicates that none of these trees will be disturbed by proposed development work.

Further tree survey work for bats is only required if trees are to be disturbed or removed.

7.3 Reptiles

Available vegetation includes an area of short sward improved grassland that offers limited potential for sheltering reptiles. Adjacent areas of woodland include open glades that could support species such as adder that has been recorded from a nearby location. Available information indicates that woodland areas will not be disturbed by proposed development actions.

Further survey work for reptiles is only required if areas of woodland are to be disturbed.

7.4 Amphibians

7.4.1 Great Crested Newt Habitat Assessment

Although survey work of all ponds located within 500 m can sometimes be necessary, Natural England now recommends a proportionate approach to great crested newt survey work:

"In keeping with a proportionate and risk-based approach, surveys need reasonable boundaries. The Great crested newt mitigation guidelines explain that surveys of ponds up to around 500m from the development might need to be surveyed. The decision on whether to survey depends primarily on how likely it is that the development would affect newts using those ponds. For developments resulting in permanent or temporary habitat loss at distances over 250m from the nearest pond, carefully consider whether a survey is appropriate. Surveys of land at this distance from ponds are normally appropriate when all of the following conditions are met: (a) maps, aerial photos, walk-over surveys or other data indicate that the pond(s) has potential to support a large great crested newt population, (b) the footprint contains particularly favourable habitat, especially if it constitutes the majority available locally, (c) the development would have a substantial negative effect on that habitat, and (d) there is an absence of dispersal barriers."

No ponds are known to be located within 250 m of the site boundary.

7.4.2 Great Crested Newt Risk Assessment

Natural England has recently published a risk map for Kent that predicts the likelihood of newts being present within a proposed development site. The proposed works area is located in a *Green* risk zone.

"Red zones contain key populations of GCN, which are important on a regional, national or international scale and include designated Sites of Special Scientific Interest for GCN. Amber zones contain main population centres for GCN and comprise important connecting habitat that aids natural dispersal. Green zones contain sparsely distributed GCN and are less likely to contain important pathways of connecting habitat for this species. White zones contain no GCN."

7.4.3 Great Crested Newt Impact Assessment

Based on available information, the proposed works are of such a scale that they are not considered likely to significantly impact on the local conservation status of great crested newt that may breed in the local area:

- No direct impact on ponds suitable for breeding.
- No ponds known to be located within 250 m of development site.

Additional survey work for great crested newt is not considered necessary.

Whilst all reasonable effort is made to identify ponds located around the site, small garden ponds and recently constructed ponds may not be included in available information sources. If additional ponds are subsequently identified within 250 m of the site, the great crested newt risk assessment may need to be updated.

7.4.4 Other Widespread Amphibian Species

Common frog, common toad, smooth newt and palmate newt are likely to breed in nearby ponds, including those in residential gardens and ponds supporting fish.

The proposed development is not considered likely to negatively impact on the local conservation status of widespread amphibian species. Additional survey work for widespread amphibian species is not considered necessary.

7.5 Badgers

Mammal trails were observed in areas of grassland within the site boundary.

No other evidence of badger was observed within the proposed development area (latrines, snuffle holes etc). Although additional survey work for badger is not considered necessary, appropriate non-licensed actions should be undertaken to ensure that badgers are not disturbed.

Whilst all reasonable effort is made to identify badger setts located around the site, dense vegetation can sometime obscure sett entrances. If additional burrows are subsequently identified within 30 m of the site boundary, the badger risk assessment may need to be updated.

7.6 Dormouse

Habitats typically suitable for dormouse include:

- Deciduous woodland, with a dense understory, species-rich shrub layer and thick ground cover.
- Hazel or sweet chestnut coppice.
- Continuous, thick, wide hedgerows over 4m high with connections to nearby suitable woodland.
- Thick continuous areas of scrub, particularly bramble, close to hedgerows or woodlands.

Deciduous woodland located adjacent to the site is considered highly suitable for dormouse. Available information indicates that these areas of woodland will not be disturbed.

Further survey work for dormouse is only required if areas of woodland are to be disturbed.

7.7 Water Vole

No waterbodies suitable for water vole are located within or close to the site boundary and additional survey work for water vole is not considered necessary.

7.8 Invertebrates

Available habitat adjacent to the site is considered to offer opportunities for a wide range of invertebrate species. Since the scale of proposed development will not result in a significant impact on woodland habitat, additional survey work for invertebrates is not considered necessary.

7.9 Other Considerations

Hedgehog is likely to be present in the local area.

On the basis of the site assessment, it is not expected that other protected species are present within the proposed site.

Gravesham Borough Council

8. Recommendations

Avoidance actions should be undertaken to ensure that there is minimal disturbance to protected species and existing habitat of biodiversity interest.

8.1 General Construction Safeguards

In order to reduce adverse effects associated with construction activities on adjacent habitats or fauna that may occur within or close to the site, safeguarding measures should be implemented by site staff, to include the following:

- Working areas will be clearly demarcated and no works that could result in disturbance to trees and shrubs will take place.
- No vegetation outside of the working areas will be disturbed.
- Grassland that will be disturbed during installation of services should be removed during construction work and reinstated as soon as possible thereafter.
- Damping down of dust sources and covering of loose materials to reduce dust deposition within adjacent habitats will be undertaken as appropriate.
- Use of lighting will be kept to a minimum. Any lighting required (e.g. for security purposes) will be directed away from boundary features (including woodland), with use of directional lighting or screening as required to reduce light spill.
- Storage of chemicals and hazardous materials will be in line with current best practice guidelines, ensuring that they are secure and cannot be accessed or knocked over by roaming animals.
- The storage of topsoil or other 'soft' building materials in the site will be given careful consideration, so as to avoid the adoption of mounds by mammals, such as badger. These will be kept to a minimum and any mounds subject to daily inspections.
- No trenches/excavations will be left open over night without the creation of sloping escape ramps for badgers and hedgehogs, which may be achieved by edge profiling of trenches / excavations or by using planks placed into them at the end of each working day.
- Any trenches / pits will be inspected each morning to ensure no mammals have become trapped overnight. Should a mammal, such as a hedgehog or badger, become trapped in trench Calumma Ecological Services will be contacted for further advice.
- Open pipe-work larger than 150 mm outside diameter will be blocked off at the end of each day.
- Fires will only be lit in secure compounds and not allowed to remain during the night.
- Food and litter will not be left within the working areas overnight.

8.2 Trees

Retained trees close to the proposed working area will be protected during construction in line with standard arboriculturalist best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This may require the use of protective fencing or other methods appropriate to safeguard the root protection areas of retained trees / shrubs.

8.3 Birds

8.3.1 Timing of Works

To avoid any potential offence under the Wildlife & Countryside Act, no clearance of features that could support nesting birds should be undertaken during the bird-nesting season (1st March to 31st August inclusive).

If this is not practicable, any potential nesting habitat to be removed must first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified will then need to be cordoned off (within a minimum 5m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out no more than three days in advance of vegetation clearance. If vegetation clearance works have not been completed within this timeframe, an update check should be undertaken.

8.3.2 Bird Nesting Boxes

The applicant should consider installing at least two bird nesting boxes in suitable locations. Suitable exterior boxes include those for songbirds that should be installed at a height of ~3 m above ground with a minimum distance of 3 m between boxes. Boxes should face north to east.

Details of the boxes that will be installed together with their locations should be included with the application.

8.4 Bats

8.4.1 Avoidance Measures

Several trees within the woodland were found to offer potential for crevice roosting bats. Available information indicates that these trees will not be disturbed as part of the proposed development. This should be confirmed by the applicant with the planning application. Providing trees are not disturbed/removed further survey work for bats is not considered necessary.

If any trees are to be disturbed or removed then additional survey work will be required. Trees proposed for disturbance should be assessed for their potential to support roosting bats. Any trees with potential should then be subject to dusk emergence survey(s) in accordance with BCT Guidelines (2016). The surveys should be carried out during the optimum season from May to August. If bats are found to be using the tree, further surveys may be required, as per current guidelines (BCT, 2016), to provide sufficient information to inform a European Protected Species Mitigation Licence from Natural England. At least 2 weeks gap should be left between each survey. Appropriate mitigation recommendations should be prepared and included in an Ecological Impact Assessment and Biodiversity Enhancement Report.

For more information see:

<https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects>

8.4.2 Lighting

Some artificial lighting can be detrimental to roosting, foraging and commuting bats especially Daubenton's, Whiskered, Natter's and Long-eared. Impacts on bats are higher in the April/May and September/October time periods, when bats emerge earlier and when most lighting will be on. The impact on bats is increased after mid-October when British Summer Time ends (by subtracting an hour).

If lighting is required for the proposed scheme, the Bat Conservation Trust's *Bats and Lighting in the UK guidance* must be adhered to in the lighting design (Appendix VI).

8.4.3 Bat Boxes

The site is considered to have potential for foraging/commuting bats and provision of bat boxes on existing mature trees will provide new sheltering opportunities. At least one box is recommended as part of the proposed works.

- Boxes must be sited at least 3.5 metres above ground. A box placed 4.5 – 6 metres high will potentially attract more species;
- Boxes should not be placed in an overly exposed position. Crucially the entrance should face south west to south east;
- If wooden boxes are used, paint or preservatives must not be used which may discourage or kill bats if inappropriate substances are used;
- Boxes are more likely to be used if sited near to a food source (insects) such as gardens, fields, water or woodlands;
- To determine if a box is being used; checks for droppings or observations at dusk during the summer for emerging bats will indicate use;
- If the box is not used after two years, the box may be relocated to an alternative location;
- Once discovered, a bat roost is protected by law and must not be disturbed.

The locations of new bat box should be confirmed by the applicant. A wide range of box designs is available for trees; all of which have specific installation requirements. The Kent Bat Box does not require cleaning and is recommended. This box can either be obtained from Kent Bat Group or easily constructed from wood. More details are available from the KBG website:

<https://www.bats.org.uk/our-work/buildings-planning-and-development/bat-boxes/wooden-bat-boxes>

8.5 Reptiles

8.5.1 Avoidance Measures

Available grassland habitat is characterised by a short sward and is unlikely to support significant numbers of reptiles. All grassland vegetation should be kept short prior to and during construction works. Providing areas of woodland are not disturbed further survey work for reptiles is not considered necessary.

If woodland areas are to be disturbed a presence/likely absence reptile survey is recommended with a particular focus on identifying areas that may be used by hibernating adder.

- Survey all suitable terrestrial habitat within the proposed development site;
- Survey work should be undertaken by a suitably experienced ecologist using appropriate methods (preferably both visual and artificial cover object surveys);
- A minimum of 7 survey visits are required to reliably confirm presence/likely absence;
- Survey visits should be undertaken during suitable weather conditions from March to September. Visual surveys for adder can also take place in February if weather conditions are suitable.

If reptiles are subsequently confirmed present a suitable mitigation strategy should be prepared and included in an Ecological Impact Assessment and Biodiversity Enhancement Report.

For more information see:

<https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences>

8.6 Badgers

8.6.1 Further Surveys

If badgers or a badger sett are subsequently encountered on the site, further advice on the need for a badger survey and/or mitigation should be sought from a suitably experienced ecologist.

8.6.2 Open Excavations

Any trenches left open overnight should include a means of escape for any badgers that may fall in. Any open excavation should be inspected before works commence in the morning. If a trapped badger is encountered further advice should be sought from a suitably experienced ecologist.

8.7 Dormouse

8.7.1 Avoidance Measures

It is recommended that all reasonable steps be taken to avoid disturbance to woody vegetation located close to the working area. Providing such vegetation remains undisturbed further survey work is not considered necessary.

If vegetation is to be removed or damaged in any way, survey work to confirm the presence or likely absence of dormouse may be required. If dormouse is subsequently found to occupy habitat within areas proposed for disturbance a European Protected Species Mitigation Licence from Natural England will be required before such habitat can be disturbed.

For more information see:

<https://www.gov.uk/guidance/hazel-or-common-dormice-surveys-and-mitigation-for-development-projects>

8.8 Ecological Enhancement and Biodiversity Net Gain

The National Planning Policy Framework (NPPF) encourages new developments to maximise the opportunities for biodiversity through incorporation of enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of national conservation priorities and the local Biodiversity Action Plan (BAP).

In addition to specific avoidance works for protected species, it is recommended that appropriate biodiversity enhancement measures are undertaken. These should be included in a landscape proposals plan that accompanies the planning application.

Features that should be considered for inclusion include:

- Management of some grassland area to promote a longer sward that is more structurally complex improving habitat suitability for invertebrates and reptiles;
- Specific management works to promote dormouse (could include coppicing within adjacent woodland and/or new woodland planting within the grassland field);
- Brash/log piles that provide shelter for invertebrates, reptiles and mammals (including dormouse);
- Bird nesting boxes;
- Bat roosting boxes.

9. References and Further Reading

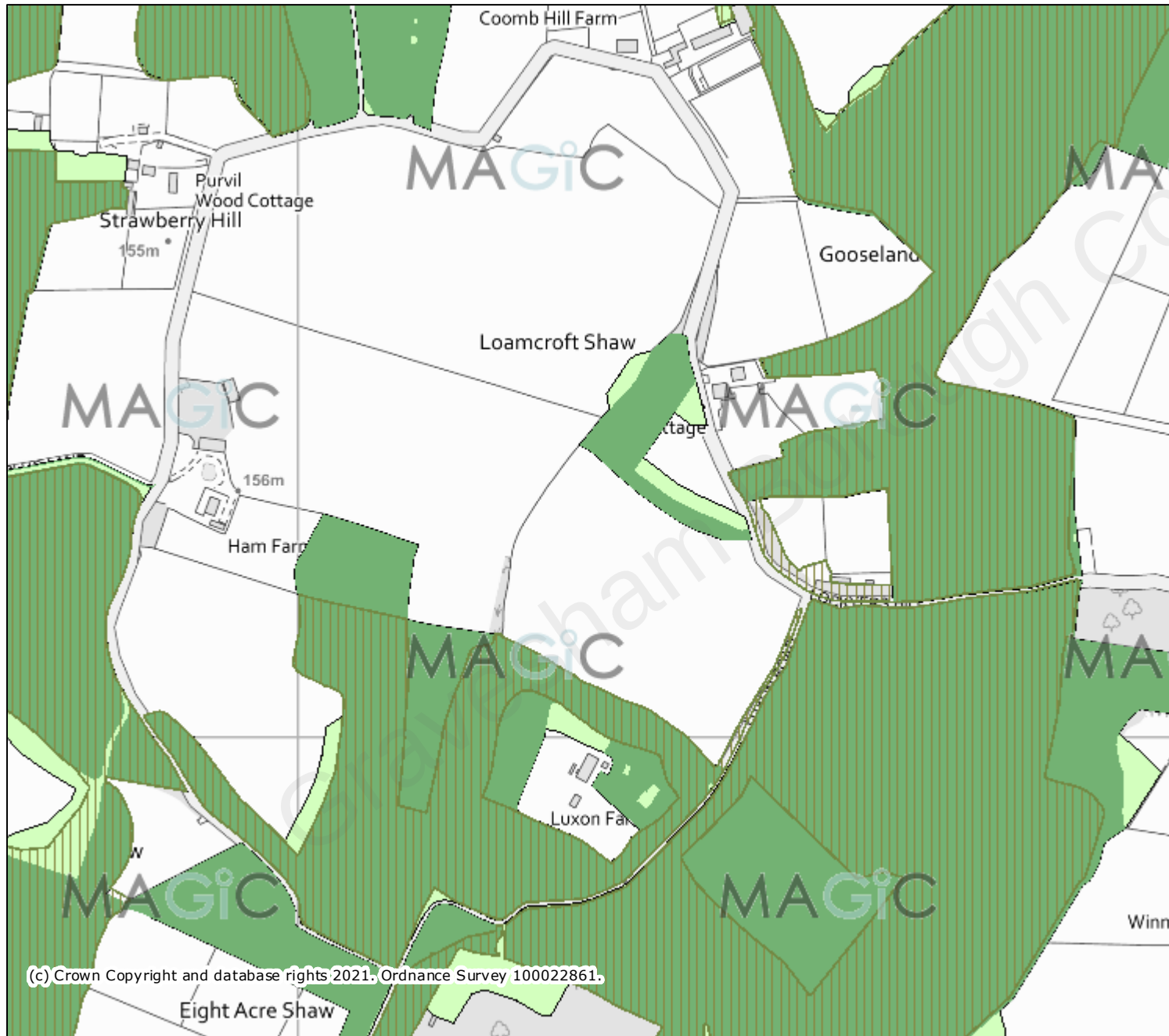
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Appendix I: Habitat Designations

Source:

MAGIC (<http://www.magic.gov.uk>)

Gravesham Borough Council



Legend

- | | |
|--|---|
| Priority Habitat Inventory - Coastal Saltmarsh (England) | Priority Habitat Inventory - Lowland Meadows (England) |
| Priority Habitat Inventory - Coastal Sand Dunes (England) | Priority Habitat Inventory - Purple Moor Grass and Rush Pasture (England) |
| Priority Habitat Inventory - Coastal Vegetated Shingle (England) | Priority Habitat Inventory - Upland Calcareous Grassland (England) |
| Priority Habitat Inventory - Maritime Cliffs and Slopes (England) | Priority Habitat Inventory - Upland Hay Meadows (England) |
| Priority Habitat Inventory - Mudflats (England) | Priority Habitat Inventory - Lowland Heathland (England) |
| Priority Habitat Inventory - Saline Lagoons (England) | Priority Habitat Inventory - Mountain Heaths and Willow Scrub (England) |
| Saline Lagoons (Wales) | Priority Habitat Inventory - Upland Heathland (England) |
| Saltmarsh (Wales) | |
| Sand Dunes (Wales) | |
| Priority Habitat Inventory - Calaminarian Grassland (England) | Moorland Change Map 2019-20 (England) |
| Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England) | Cloud |
| Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England) | No recent Burn or Cut in vegetation |
| Priority Habitat Inventory - Lowland Calcareous Grassland (England) | Recent Burn or Cut in vegetation |
| Priority Habitat Inventory - Lowland Dry Acid Grassland (England) | Moorland Change Map 2018-19 (England) |
| | Cloud |
| | No recent Burn or Cut in vegetation |
| | Recent Burn or Cut in vegetation |

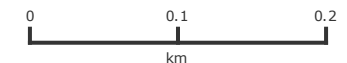
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Map produced by MAGiC on 7 December, 2021.

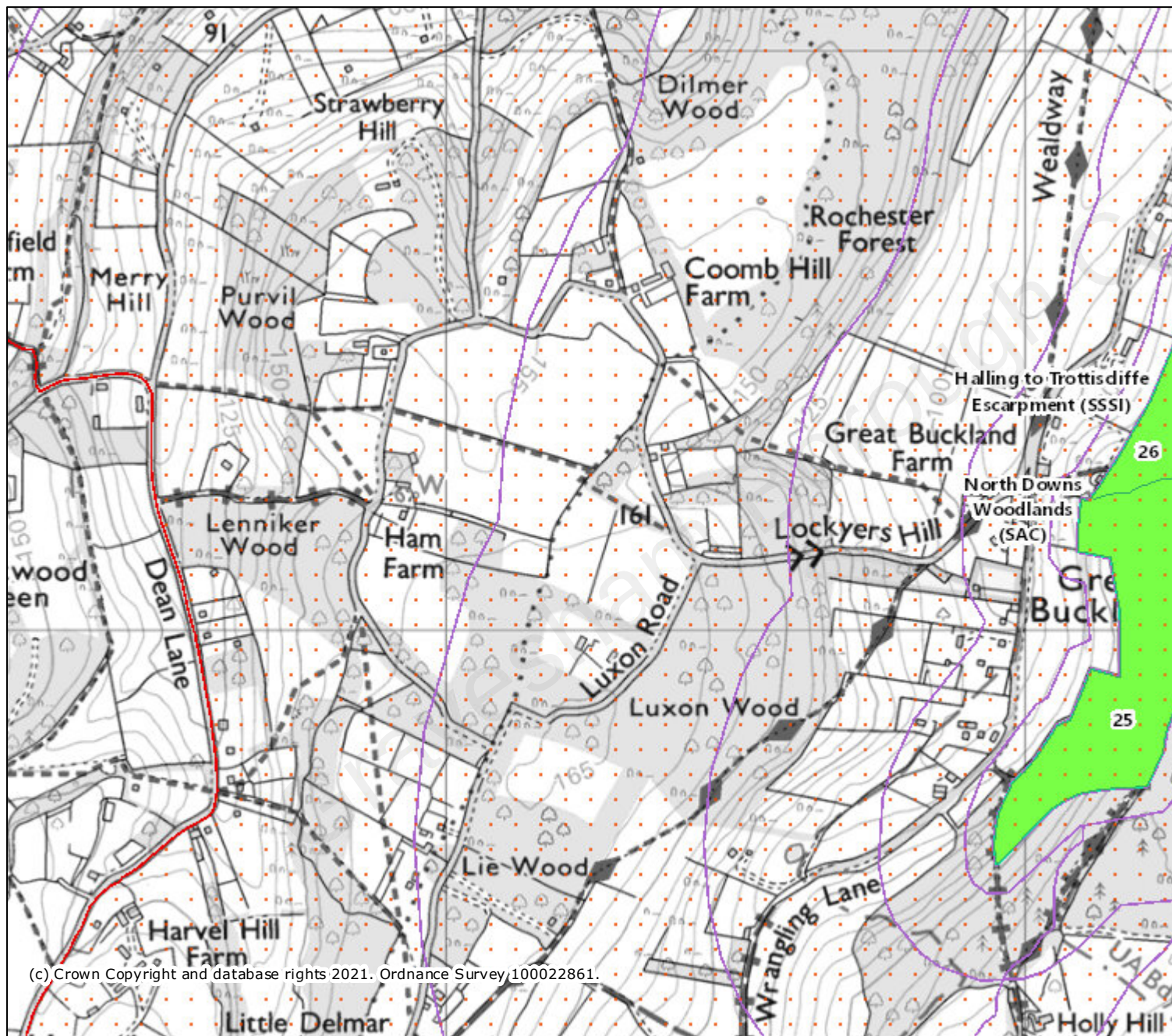
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Appendix II: Land Designations

Source:

MAGIC (<http://www.magic.gov.uk>)

Gravesham Borough Council



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Legend

- | | |
|---|---|
| Areas of Outstanding Natural Beauty (England) | Sites of Special Scientific Interest (England) |
| Limestone Pavement Orders (England) | SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England) |
| Local Nature Reserves (England) | Sites of Special Scientific Interest (Scotland) |
| Moorland Line (England) | Sites of Special Scientific Interest (Wales) |
| National Nature Reserves (England) | Special Areas of Conservation (England) |
| National Nature Reserves (Scotland) | Possible Special Areas of Conservation (England) |
| National Nature Reserves (Wales) | Special Areas of Conservation (Scotland) |
| National Parks (England) | Special Areas of Conservation (Wales) |
| Ramsar Sites (England) | Special Protection Areas (England) |
| Proposed Ramsar Sites (England) | Potential Special Protection Areas (England) |
| Ramsar Sites (Scotland) | Special Protection Areas (Scotland) |
| Ramsar Sites (Wales) | Special Protection Areas (Wales) |
| Sites of Special Scientific Interest Units (England) | |
| Favourable Condition | Biosphere Reserves (England) |
| Unfavourable Recovering | Biosphere Reserves (Scotland) |
| Unfavourable no change | Biosphere Reserves (Wales) |
| Unfavourable Declining | Biosphere Reserves (Scotland) |
| Part Destroyed | Biosphere Reserves (Wales) |
| Destroyed | |
| Not Assessed | |

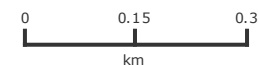
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Map produced by MAGIC on 7 December, 2021.

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Appendix III: Kent Habitat Survey 2012

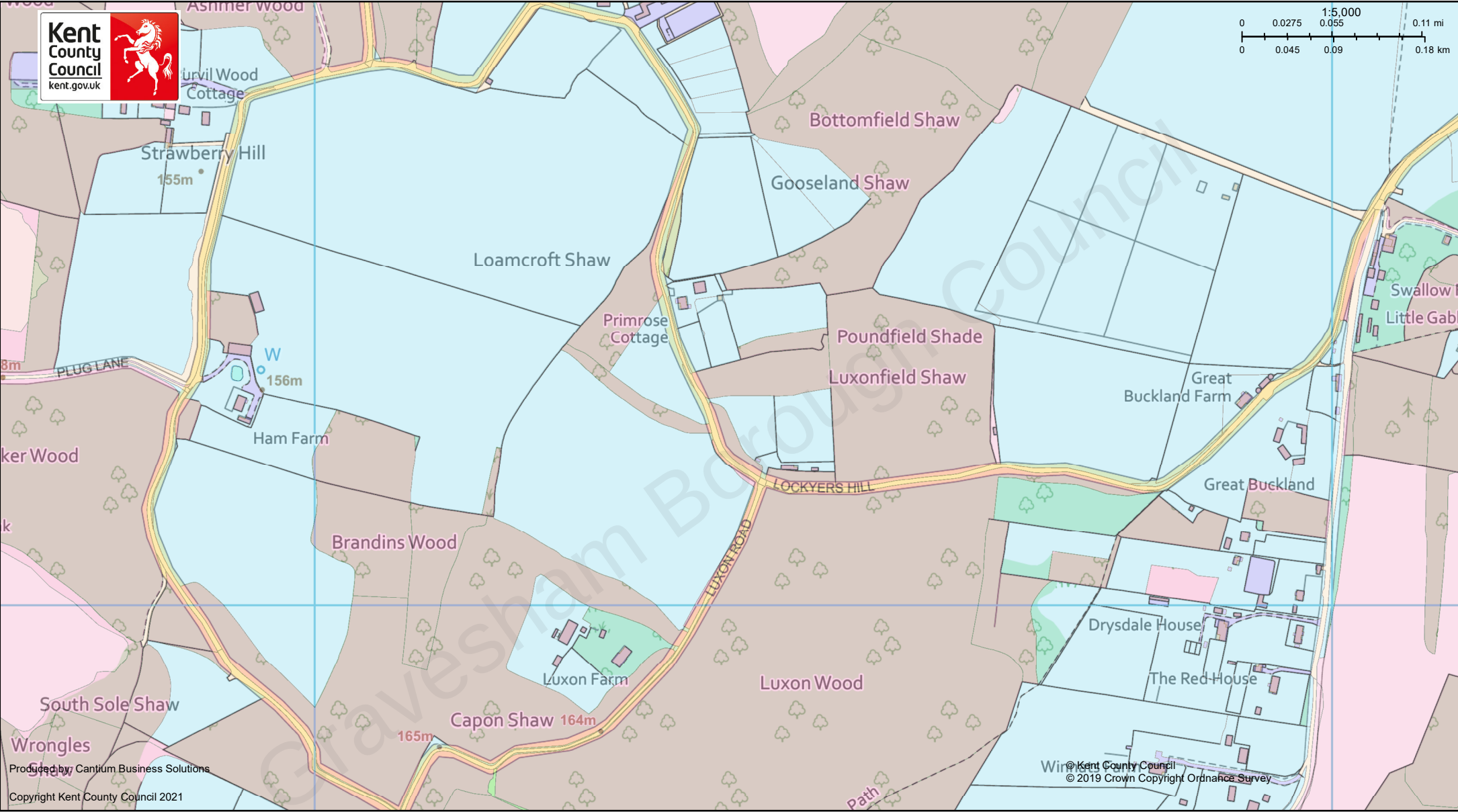
Source:

Kent Landscape Information Land System

(<https://webapps.kent.gov.uk/KCC.KLIS.Web.Sites.Public/ViewMap.aspx>)

Kent Habitat Survey 2012

December 7, 2021



Legend

Kent Habitat Survey 2012

Acid grassland	Bracken	Coniferous woodland	Inland rock/Quarry	Neutral grassland	Supralittoral Sediment
Arable and horticulture	Broadleaved, mixed, and yew woodland	European dry heaths	Littoral Rock	Rivers and streams	Traditional orchard
Boundary and linear features	Built-up areas	Fen, marsh and swamp	Littoral Sediment	Standing open water and canals	Unknown terrestrial vegetation
	Calcareous grassland	Improved grassland	Maritime grassland	Supralittoral Rock	

Appendix IV: Local Wildlife Sites

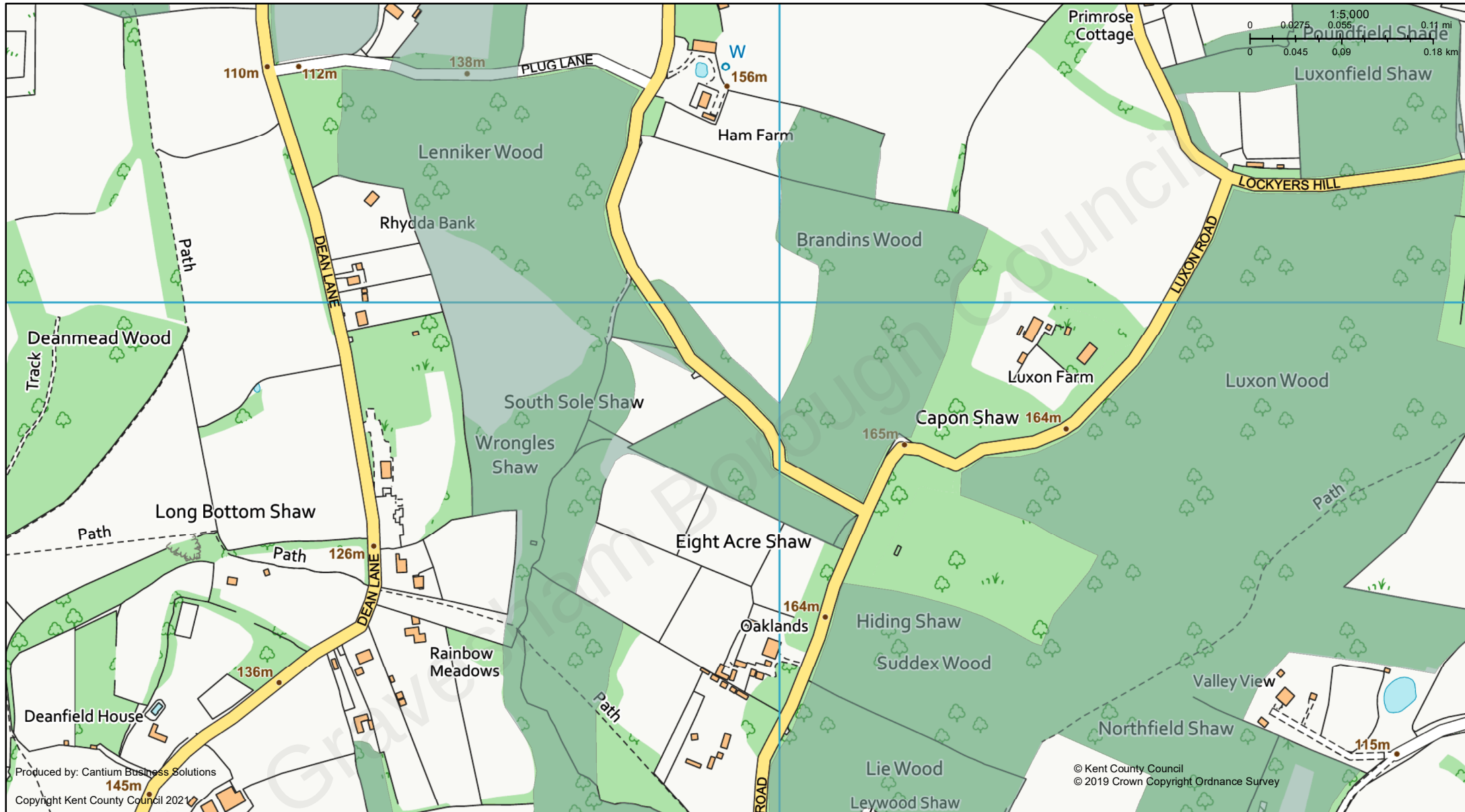
Source:

Kent Landscape Information Land System

(<https://webapps.kent.gov.uk/KCC.KLIS.Web.Sites.Public/ViewMap.aspx>)

Local Wildlife Sites

December 7, 2021



Legend



Local Wildlife Sites

Appendix V: Records Search

Source:

Kent Reptile and Amphibian Group (Ref: CES/21/192)

Gravesham Borough Council

Herpetofauna Database Search Summary

Enquiry No: CES/21/263
On Behalf of: Calumma Ecological Services
Search Area: Harvel
Grid Reference: TQ 659 638
Search Radius (km): 2

Amphibians Recorded in Search Area:

Common Frog
Common Toad

list excludes historical and confidential observations

The closest recorded Great Crested Newt observation is a historical record located at Ryarsh, 3.59 km to the S (record id: 1604).

Reptiles Recorded in Search Area:

Viviparous Lizard
Slow-worm
Grass Snake
Adder

list excludes historical and confidential observations

The closest recorded reptile observation is a historical record for Adder, located at Harvel, 0.1 km to the S (record id: 11807).

The Kent Reptile and Amphibian Group is a non-profit making organisation that promotes the conservation of reptiles and amphibians. Although the KRAG recording database contains several thousands of records, the availability of information detailed within this search is directly related to survey effort. A lack of records does not necessarily indicate the absence of a species. KRAG recommends that a thorough herpetofauna survey is undertaken following the most recently published best practice guidelines.

KRAG welcomes the submission of additional records from those undertaking survey work in Kent.

Kent Reptile and Amphibian Group

Search Date: 17/11/2021

info@kentarg.org
www.kentarg.org

Species Risk Assessment

Enquiry No: CES/21/263
 On Behalf of: Calumma Ecological Services
 Search Area: Harvel
 Grid Reference: TQ 659 638

Amphibians

	<u>Likelihood of Presence</u>	
	<u>Score</u>	<u>Dist (km)</u>
Common Frog:	HIGH	0.92
Common Toad:	Likely	1.49
Natterjack:	n/a	67.91
Smooth Newt:	Possible	2.34
Palmate Newt:	HIGH	2.34
Great Crested Newt:	Possible	3.60
Marsh Frog:	Possible	5.31
Alpine Newt:	n/a	16.40

Amphibian survey effort in local area is considered to be below average. Results should be interpreted with caution.

Reptiles

	<u>Likelihood of Presence</u>	
	<u>Score</u>	<u>Dist (km)</u>
Viviparous Lizard:	Possible	1.78
Slow-worm:	Possible	1.78
Sand Lizard:	unlikely	69.23
Grass Snake:	Possible	1.04
Adder:	HIGH	0.22
Smooth Snake:	n/a	n/a

Reptile survey effort in local area is considered to be average.

ponds within 1 km: 8
 distance to nearest pond (km): 0.37

This risk assessment is based on a nearest neighbour analysis of records available at the time of this search request. The assessment considers habitat characteristics for each species at the landscape level, but does not control for the suitability of available habitat at the specified grid reference. The risk assessment does not include historical records and may underestimate likely presence of a species in areas with limited survey effort. The risk assessment is provided for guidance only and should not be used in place of a full herpetofauna survey.

For sites with no waterbodies where the analysis suggests that amphibians are likely to be present, individual animals may use suitable terrestrial habitat for sheltering, foraging and/or dispersal.

Kent Reptile and Amphibian Group

Search Date: 17/11/2021

info@kentarg.org
 www.kentarg.org

Appendix VI: Bats and Lighting

Source:

Bat Conservation Trust and Institution of Lighting Engineers

Gravesham Borough Council

Summary of Requirements

The two most important features of street and security lighting with respect to bats are:

1. The UV component. Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.
2. Restriction of the area illuminated. Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:

Low

- Low pressure Sodium Lamps (SOX) emit a minimal UV component
- High pressure Sodium Lamps (SON) emit a small UV component
- White SON, though low in UV, emit more than regular SON

High

- Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
- Mercury lamps (MBF) emit a high UV component.
- Tungsten Halogen, if unfiltered, emit a high UV component
- Compact Fluorescent (CFL), if unfiltered, emit a high UV component.

Variable

- Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.

Glass glazing and UV filtering lenses are recommended to reduce UV output.

Street lighting

Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.

Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.

If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

Security and domestic external lighting

The above recommendations concerning UV output and direction apply. In addition:

- Lighting should illuminate only ground floor areas - light should not leak upwards to illuminate first floor and higher levels;
- Lamps of greater than 2000 lumens (150 W) must not be used;
- Movement or similar sensors must be used - they must be carefully installed and aimed, to reduce the amount of time a light is on each night;
- Light must illuminate only the immediate area required, by using as sharp a downward angle as possible;
- Light must not be directed at or close to bat 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;
- Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife;
- Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.



Calumma Ecological Services is an independent wildlife consultancy specialising in the applied conservation of amphibians and reptiles. *Calumma Ecological Services* offers a full range of specialist services to private companies, local authorities, government agencies, wildlife organisations and members of the public.

Calumma Ecological Services works towards the policy of 'best practice' advocated by ARG UK (formally known as Herpetofauna Groups of Britain and Ireland).

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