



PRELIMINARY ECOLOGICAL APPRAISAL (PEA)

LAND OFF MAIDSTONE ROAD

NETTLESTEAD, NR MAIDSTONE

DISCLAIMER

This report has been prepared by Native Ecology in its professional capacity as consultants in accordance with the terms and conditions set out within the contract with the commissioning party (the 'Client').

This report is issued to the Client for their sole use and for the intended purpose as stated in the agreement between the Client and Native Ecology under which this work was completed. No part of this report may be copied or reproduced by any means without written permission from Native Ecology. The use of this report by unauthorised third parties is at their own risk and Native Ecology accepts no duty of care to any such third party. Opinions, information and recommendations provided within the report should be read and relied upon only in the context of the document as a whole. Opinions and recommendations are based upon Native Ecology using due skill and diligence with the information made available at the time that Native Ecology performed the work. The content of this report has been provided in accordance with the provisions of the CIEEM Code of Professional Conduct and to the principles and requirements of British Standard BS42020.

Nothing in this report constitutes legal opinion. If legal opinion is required the advice of a qualified legal professional should be sought.

Reference	Ref: 0663_R01_Rev01_PEA
Report status	Information
Author	Tara Hall BSc (Hons) ACIEEM
Checked by	Amy Wright BSc MSc CEcol MCIEEM
Revised	15th June 2021
1st Issue date	April 2021
Revision issue	Inclusion of proposed site plans.

*Native Ecology LLP is a Limited Liability Partnership registered in England and Wales, number OC424800.
Any reference to a partner in relation to Native Ecology LLP means a member of Native Ecology LLP.
Registered Office: Camburgh House, 27 New Dover Road, Canterbury, Kent, CT1 3DN*

Native Ecology, Unit 93, Waterham Business Park, Highstreet Road, Waterham, Faversham, Kent. ME13 9EJ

t: 01227 656757

e: info@native-ecology.co.uk

w: www.native-ecology.co.uk

CONTENTS

1.	SUMMARY	4
2.	INTRODUCTION	5
3.	SITE LOCATION PLAN	6
4.	EXISTING SITE PLAN	7
5.	PROPOSED SITE PLAN	8
6.	METHODOLOGY	9
7.	CURRENT ECOLOGICAL CONDITIONS	12
8.	PHOTOGRAPHS	17
9.	ECOLOGICAL CONSTRAINTS	18
10.	FURTHER SURVEY WORK	20
11.	MITIGATION MEASURES	21
12.	SUGGESTED ENHANCEMENT MEASURES	23
13.	REFERENCES	25
14.	APPENDIX 1: SUMMARY OF PLANNING POLICY AND LEGISLATION	26
15.	APPENDIX 2: HABITAT PLAN	30
16.	APPENDIX 3: WATERBODY LOCATION PLAN	31

1. SUMMARY

- S.1 This report details a Preliminary Ecological Appraisal (PEA) undertaken in respect of proposed development within land off Maidstone Road, Nettlestead Nr Maidstone, Kent, ME18 5HJ.
- S.2 Proposals include the construction of a single residential dwelling with associated parking and landscaping. The proposals also include the creation of an ecological enhancement area.
- S.3 A PEA site visit was undertaken by Native Ecology on 31st March 2021.
- S.4 Habitats within the Site include modified grassland with a small group of trees and a newly planted hedgerow comprising young whips.
- S.5 The Site is situated in a rural location with residential properties to the north and south and Maidstone Road immediately adjacent to the Site to the east.
- S.6 Mitigation, without the requirement for further survey work, is recommended for foraging and commuting bats, badger, hedgehog and nesting birds (detailed within Section 10).
- S.7 A Habitat Suitability Index (HSI) survey is recommended for all ponds located within 250m of the Site to determine their suitability to support great crested newt (detailed in Section 9, with the waterbody map detailed within Appendix 3). Depending on the results of this pond assessment, further survey work or assessment may be required for great crested newt.
- S.8 Alternatively, a District Level Licence (DLL) could be applied for, which would negate the need for HSI surveys and any further survey work with regards to great crested newts.
- S.9 Appropriate biodiversity enhancement measures are recommended which could be included as part of development proposals (detailed in Section 11).
- S.10 Appendix 1 gives an overview of relevant legislation, which should be read in conjunction with this report.
- S.11 Appendix 2 provides a Habitat Plan.
- S.12 Appendix 3 provides a Waterbody Location Plan.

2. INTRODUCTION

2.1 This report details a Preliminary Ecological Appraisal undertaken in respect of proposed development at land off Maidstone Road, Nettlestead, Nr Maidstone, Kent, ME18 5HJ (site centred TQ 68153 50959).

2.2 Figure 1, Section 3 provides a site location plan.

COMMISSION

2.3 Native Ecology was commissioned by Hill-Wood and Co (Kent) Ltd. in March 2021 to undertake a Preliminary Ecological Appraisal within the site.

APPLICATION SITE

2.4 The application site, hereafter referred to as 'the Site', comprises an area of maintained grassland, with a group of trees within the northeastern portion and a newly planted hedgerow along the eastern boundary, which borders Maidstone Road. The Site extends to approximately 0.3ha.

2.5 Figure 2, Section 4 provides an existing site plan.

PROPOSED WORKS

2.6 Proposals include the construction of a single residential dwelling, with associated gardens and access. The proposals also include an ecological enhancement area to comprise a wildflower meadow and newly planted orchard trees.

2.7 Figure 3, Section 5 provides the proposed site and landscaping plan, which also includes the proposed biodiversity enhancements.

PURPOSE OF REPORT

2.8 This report aims to provide general advice on ecological constraints associated with proposed development within the site and includes recommendations for mitigation and further survey work, where required.

2.9 The objectives of the report are to:

- Describe the current ecological conditions present within the site.
- Identify any key ecological constraints to the proposed development both with regards protected species and sites.
- Identify where mitigation will allow significant ecological effects to be avoided or minimised wherever possible.
- Identify any further ecological surveys required in order to assess the possible impact on protected and important / notable species.
- Recommend ecological enhancements to be incorporated into the development proposals.

3. SITE LOCATION PLAN



Figure 1. Location of development site. Reproduced from OS Explorer 148 1:25,000 Ordnance Survey © Crown copyright and database rights. (Site centred TQ 68153 50959).

4. EXISTING SITE PLAN



Figure 2. Existing site plan (Google Earth Pro. Image dated April 2020).

5. PROPOSED SITE PLAN



Figure 3. Proposed site and landscape plan (Hill-Wood & Co. Ltd, drawing no: 0416/21/B/1, dated April 2021).

6. METHODOLOGY

DESK STUDY

Zone of Influence

- 6.1 The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities (CIEEM, 2017a).
- 6.2 This report provides an assessment of the effects of a proposed development on protected or ecologically valuable sites, habitats or species where these effects extend beyond the development boundary of the site.

Designated sites

- 6.3 Potential impacts to designated sites, including Natura sites and SSSIs, have been considered.
- 6.4 The Multi Agency Geographic Information for the Countryside (MAGIC) website was used to obtain information about statutory designated sites of international importance such as Special Protection Areas (SPA) within 7.2km of the Site.
- 6.5 Information was obtained about statutory designated sites of national importance such as Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR) within 2km of the Site and ancient woodland within 500m of the Site.
- 6.6 Kent Landscape Information System (KLIS) was used to identify Local Sites, such as Local Wildlife Sites (LWS), located within 1km of the Site.

Biological Records

- 6.7 Records data within 1km of the Site boundary was obtained from the Kent Reptile and Amphibian Group in April 2021.

FIELD STUDY

- 6.8 A Preliminary Ecological Appraisal site visit was undertaken by Tara Hall BSc (Hons) ACIEEM of Native Ecology on 10th March 2021.

Table 1. Survey details

Survey date	31st March 2021
Surveyor	Tara Hall BSc(Hons) ACIEEM
Time on site	10:30 - 11:30
Weather	12°C, 50% cloud cover, light wind, no rain, ground dry.

UK Habitat Classification

- 6.9 Habitats within the Site were mapped and classified in accordance with the The Professional Edition of the UK Habitat Classification.
- 6.10 There are 5 levels of hierarchy, which provide an increasing level of detail. For the purpose of this assessment, habitats have been mapped for Primary Habitats up to Level 4.
- 6.11 Secondary codes have been assigned, where appropriate. These Secondary Codes allow recording of additional information, linked to the Primary Habitats. In some cases, habitat types are defined by a Secondary Code only, where Primary Habitats do not sufficiently represent the habitat present.

Protected species and habitats

- 6.12 During the survey the species and habitats identified within the Site were recorded. An assessment was also made as to the presence or potential presence of protected, important or Nationally Rare species.
- 6.13 Protected species and habitats considered include those listed under the Schedules of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and of the Wildlife and Countryside Act 1981.
- 6.14 In addition, an assessment has been made as to the possible impacts of the proposed development on nature conservation interests, in accordance with information relevant to the National Planning Policy Framework and Local Planning Policy.

Bats

- 6.15 The suitability of roosting habitat and foraging and commuting habitat within the site was assessed following recommendations provided within Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition, Bat Conservation Trust (Collins, 2016).

Badger

- 6.16 During the site survey any badger field signs observed were recorded and mapped. These included; sett entrances, latrines, pathways, snuffle holes, footprints, and push-throughs.

Reptiles

- 6.17 The suitability of habitats within the Site to support reptiles was assessed during the Preliminary Ecological Appraisal site visit. Any incidental sightings were recorded.

Great crested newt

- 6.18 The level of survey effort and data collection required to support a Planning Application or European Protected Species Mitigation (EPSM) Licence for great crested newts is relative to the potential impact. For EPSM Licence applications, typically ponds within 250m of the construction zone are surveyed for the presence (and population assessment) of great crested newts.

- 6.19 Following the guidance of Natural England (2015) waterbodies located beyond 250m from the development are only surveyed if all of the following conditions are met:
- ponds have potential to support a large great crested newt population;
 - the development footprint contains particularly favourable habitat, especially if it constitutes the majority available locally;
 - the development would have a substantial negative effect on that habitat; and
 - there is an absence of dispersal barriers.
- 6.20 Based on the listed criteria above, a proportionate survey area for the Site includes the assessment of any ponds within 250m of the construction zone.
- 6.21 Ordnance survey maps, the Multi Agency Geographic Information for the Countryside (MAGIC) website and aerial images were used to identify waterbodies within 250m of the Site boundary. MAGIC Map was also used to obtain information on locations where European Protected Species Mitigation (EPSM) Licences for great crested newt have been issued by Natural England within 1km of the Site.

Habitats and Species of Principal Importance

- 6.22 An assessment was made as to the likely presence of Habitats and Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and birds on the Red and Amber lists of birds of conservation concern.

LIMITATIONS

- 6.23 This report aims to provide general advice on ecological constraints associated with the development of the site, it does not include detailed information on particular species or species groups but instead makes recommendations for further, species-specific surveys required.
- 6.24 In accordance with CIEEM guidance, consideration should be given to the validity of survey data after a period of 12 month from the date of the survey. This may require a site visit to assess whether ecological conditions within the site have changed and may require further ecological survey work due to the transient nature of some protected species.

7. CURRENT ECOLOGICAL CONDITIONS

DESIGNATED SITES

Statutory Sites of International Importance

- 7.1 There are no statutory sites of International Importance located within 7.2km of the Site.

Statutory Sites of National Importance

- 7.2 There is one statutory sites of national importance located within 2km of the survey area, namely the River Beult Site of Special Scientific Interest (SSSI), which is located approximately 1.3km southeast of the Site.
- 7.3 The River Beult is designated due to being one of the last remaining rivers that flows slowly over lowland Wealden clay.
- 7.4 The Site falls within the Impact Risk Zone for the River Beult SSSI and as such, the Local Planning Authority will be required to liaise with Natural England to determine whether further assessment is needed.

Non-statutory sites

Local Sites

- 7.5 There are five Local Wildlife Sites (LWS) located within 1km. All five LWS are woodland parcels, with the closest parcel approximately 270m west of the Site.
- 7.6 It is unlikely that the proposed development will impact the LWS either directly or indirectly due to the small scale and nature of proposals and the distance between sites.
- 7.7 No further assessment or mitigation is proposed for Local Sites.

Ancient Woodland

- 7.8 There are six compartments of ancient woodland within 500m. As the closest parcel of ancient woodland is located approximately 270m west of the Site, no direct or indirect impacts are anticipated as a result of the proposed development.
- 7.9 No further surveys work or mitigation is required for ancient woodland.

HABITATS WITHIN THE SITE

Habitats of Principal Importance

- 7.10 There are no Habitats of Principal Importance within the Site.

Other habitats

Buildings

7.11 There are no buildings present within the Site.

7.12 Table 2 below (and continues overleaf) describes the habitats present within the Site in accordance with UK Habitat Classification.

Table 2. Habitat types present within the Site, including level (UKHab), size and description.

HABITAT TYPE				DESCRIPTION
Level 2 label	Level 3 label	Level 4 label	Level 5 label / (Secondary codes)	
Grassland (g)	Modified grassland (g4)	N/A	Frequently Mown (66)	The majority of the Site comprises an area of frequently mown grassland. Species include Yorkshire fog (<i>Holcus lanatus</i>), field woodrush (<i>Luzula campestre</i>), daisy (<i>Bellis perennis</i>), ground ivy (<i>Glechoma hederacea</i>), buttercup (<i>Ranunculus sp.</i>), annual meadow grass (<i>Poa annua</i>), dandelion (<i>Taraxacum officinale</i>), moss (<i>Bryophyte spp.</i>) and rye grass (<i>Lolium sp.</i>).
			Scattered Trees (11)	A low number of small individual trees are present along the western boundary and include hazel (<i>Corylus avellana</i>), cherry (<i>Prunus sp.</i>) and elder (<i>Sambucus nigra</i>).
			Newly planted hedgerow (other hedgerow)	A recently planted hedgerow comprising hazel, holly (<i>Ilex aquifolium</i>), blackthorn (<i>Prunus spinosa</i>), hawthorn (<i>Crataegus monogyna</i>) and field maple (<i>Acer campestre</i>) is located along the eastern boundary. The trees are small whips protected with tree guards.
Woodland and forest (w)	Broadleaved mixed and yew woodland	Other woodland, broadleaved	N/A	<p>A small wooded copse comprising ash (<i>Fraxinus excelsior</i>), hazel, elm (<i>Ulmus sp.</i>), cherry and elder is present in the northeast corner of the Site. The majority of the trees are semi-mature and young. Wild clematis (<i>Clematis vitalba</i>) and ivy (<i>Hedera helix</i>) growth is present on some trees.</p> <p>The understorey is sparse with much of it bare earth. Lords and ladies (<i>Arum alpinum</i>), daffodil (<i>Narcissus sp.</i>), green alkanet (<i>Pentaglottis sempervirens</i>) and common nettle (<i>Urtica dioica</i>) are present.</p>
Urban (u)	Built-up areas and gardens (u1)	Artificial unvegetated, unsealed surface (u1c)	N/A	An access driveway comprising crushed hardcore is present into the Site from Maidstone Road.

SURROUNDING HABITATS

- 7.13 The Site is located within a rural location with arable fields with wooded and hedgerow lined margins surrounding on all aspects. Immediately adjacent to the southwest and northeast boundaries are residential properties and gardens. Maidstone Road is located immediately east of the eastern boundary.
- 7.14 The Site is located approximately 2.4km southwest of Wateringbury village and 8.4km southwest of Maidstone town centre.

PROTECTED AND NOTABLE SPECIES

Bats

Roosting habitat

- 7.15 There are no buildings within the Site and none of the trees possess potential roost features for bats. No further survey work of mitigation is required for roosting bats.

Foraging and commuting habitat

- 7.16 The modified grassland and newly planted hedgerow within the Site provide habitat of negligible/low suitability for foraging and commuting bats.
- 7.17 The small group of trees offers some suitable foraging and commuting habitat for bats, with abundant suitable foraging and commuting habitat within the surrounding habitats.

Hazel dormice

- 7.18 There is no suitable dormouse habitat located within the Site.
- 7.19 The small group of trees supports no suitable scrub understorey and is not connected to any further suitable dormouse habitat within the zone of influence. No further survey work or mitigation is required for hazel dormice.

Otter

- 7.20 There is no habitat suitable for otter within, or in close proximity the site. No further survey work or mitigation is required for otter.

Badger

- 7.21 No signs of badger were present within the Site and no badger setts were recorded within the accessible 30m of the Site boundary. Given its location within a rural area, badger may enter the Site on occasion whilst foraging.

Water vole

- 7.22 There is no habitat suitable for water vole within, or in close proximity to the site. No further survey work or mitigation is required for water vole.

Hedgehog

- 7.23 Habitats within the Site and surrounding area provide foraging opportunities for hedgehog, which may be present in the locality.

Birds

- 7.24 Due to the habitats present, no Schedule 1 birds are expected to nest within the Site.
- 7.25 The group of trees provides suitable nesting habitat for common and widespread bird species, as well as those listed as Red and Amber within the Birds of Conservation Concern, such as dunnock and song thrush.

Reptiles

- 7.26 A single common lizard record has been submitted to Krag, located approximately 0.69km southeast of the Site.
- 7.27 The short sward length, regularly cut modified grassland provides negligible suitability for reptiles. The understorey beneath the group of trees is sparse, comprising predominantly bare ground, which also provides negligible suitability for reptiles.
- 7.28 The grassland within the Site will continue to be regularly managed at a short sward length and therefore reptiles are unlikely to enter the Site. No further survey work or mitigation is required for reptiles.

Great crested newt

- 7.29 Data obtained from Krag include three records of great crested newt within 1km of the Site. All three records have been recorded approximately 0.6km east of the Site.
- 7.30 The grassland and group of trees provides areas of terrestrial habitat of low suitability for great crested newt. The Site has connectivity to areas of suitable terrestrial and aquatic habitat for great crested newts to the northwest.
- 7.31 There are no waterbodies present within the Site. According to OS maps, MAGIC map and aerial images, there are seven waterbodies present within 250m of the Site boundary, which includes a number of small ditches.

Invertebrates

- 7.32 Habitats within the Site, such as the group of trees, provide suitable habitat to support a range of common and widespread invertebrates. Protected or rare invertebrates are unlikely to be present.
- 7.33 No further survey work or mitigation is recommended for invertebrates.

Flora

7.34 Due to the past and present management of the Site, the areas of habitat are unlikely to support protected plant species. No evidence of Schedule 9 plants was found during the Site survey.

7.35 No further survey work or mitigation is recommended for flora.

8. PHOTOGRAPHS



Photograph 1. Centre of the Site facing northwest.



Photograph 2. Group of trees within northeast corner of the Site.



Photograph 3. Area within the Site for the proposed dwelling footprint.



Photograph 4. Existing access from Maidstone Road, comprising crushed hardcore.



Photograph 5. Sparse understorey beneath the group of trees.



Photograph 6. French drain in southern portion of the Site.

9. ECOLOGICAL CONSTRAINTS

- 9.1 The potential impacts of the proposed development on those Ecological Features that have not been scoped out in Section 6 are considered below.

DESIGNATED SITES

River Beult SSSI

- 9.2 The Site falls within the Impact Risk Zone for the nearby River Beult SSSI. Due to the small scale of the Site and nature of the proposals, no adverse impacts on the SSSI are anticipated. However, it is recommended that the Local Planning Authority consult with Natural England to determine whether further assessment into the likely impacts are required.

PROTECTED AND NOTABLE SPECIES

Foraging and commuting bats

- 9.3 Proposals do not include the severance of any potential foraging or commuting corridors for bats.
- 9.4 Habitats within the Site comprising predominantly modified grassland offer negligible to low suitability for foraging and commuting bats. The group of trees offers moderate habitat suitability.
- 9.5 Indirect impacts to foraging or commuting bats through post-development external lighting are possible.
- 9.6 Precautionary mitigation to avoid impacts through the careful design of lighting is recommended within Section 11. Enhancement measures, outlined within Section 12, have the potential to improve the value of habitats within the Site for foraging and commuting bats.

Great crested newt

- 9.7 The Site supports terrestrial habitat of low suitability for great crested newts, however, great crested newt records are present within 1km of the Site and it is connected to abundant suitable terrestrial habitat within the zone of influence. In addition, seven waterbodies are located within 250m of the Site.
- 9.8 Due to the strict legal protection afforded to great crested newt and their habitat, further survey work is recommended to determine the presence or likely absence of great crested newt within the Site through assessment of the nearby ponds, as detailed within Section 9.
- 9.9 Alternatively, to negate the need for further survey work for great crested newt, liaison with Natural England could be undertaken to ascertain whether the use of the Kent District Level Licence for the Site would be appropriate.

Badger

- 9.10 During the survey, no signs of badger were present within the Site or within the immediate adjacent land. Therefore, any impacts to a badger whilst it is occupying its sett is unlikely.
- 9.11 Precautionary mitigation to minimise the risk of harming individual badgers during construction works is detailed in Section 10.

Hedgehog

- 9.12 Development proposals are unlikely to impact on local hedgehog populations and therefore no further survey work is required. However, in the absence of suitable mitigation, individual hedgehogs may be harmed during works.
- 9.13 Precautionary mitigation to reduce the risk of killing or injuring individual hedgehog and to maintain connectivity between existing and new foraging areas within the site and in the locality is detailed within Section 10.

Nesting birds

- 9.14 Due to the location of the Site and habitats present, Schedule 1 birds are unlikely to nest within the Site.
- 9.15 Given the small area of suitable bird nesting habitat to be impacted within the Site, it is unlikely that development proposals will impact bird populations within the locality. No further survey work for nesting birds is recommended.
- 9.16 The group of trees within the Site provide suitable nesting habitat for common and widespread bird species, as well as those listed as Red and Amber within the Birds of Conservation Concern such as dunnock (Amber) and song thrush (Red).
- 9.17 Mitigation measures to avoid impacts to nesting birds through the timing of works are outlined within Section 10.
- 9.18 Enhancement measures, outlined within Section 11 have the potential to improve the value of habitats within the Site for birds.

10. FURTHER SURVEY WORK

- 10.1 Further survey work is required to establish the presence or likely absence of great crested newt and to inform any required mitigation.

GREAT CRESTED NEWT

Habitat Suitability Index (HSI) Assessment

- 10.2 It is recommended that a HSI survey is undertaken for the seven waterbodies identified within 250m of the Site.
- 10.3 A HSI survey will determine the suitability of these waterbodies to support great crested newts.

Survey effort and timing

- A single daytime visit undertaken at any time of the year (optimal period between May-September).
- 10.4 The results of the HSI assessment will determine whether presence/likely absence survey work for great crested newt is required for each pond.
- 10.5 If a waterbody provides suitable habitat for great crested newts, then there are a number of options for survey work and mitigation. This includes traditional survey techniques and mitigation measures as well as the use of District Level Licensing (DLL), which was launched in Kent by Natural England in 2019.
- 10.6 The use of either traditional methods or DLL will be dependent on timing of works and budget constraints.

Traditional Survey Approach

Presence/Likely Absence Survey

- 10.7 A presence/likely absence survey is undertaken for all suitable ponds within 250m of the Site. The survey would follow Natural England's Great Crested Newt Mitigation Guidelines (2001).

Survey Effort and Survey Period

- Water samples to be used for e-DNA may be collected between 15th April - 30th June (inclusive); or
- Completion of four survey visits comprising three survey techniques (e.g. egg searches, bottle trapping and torch light survey) undertaken between March - June. At least two visits must be carried out between mid-April to mid-May.

District Level Licensing (DLL)

- 10.8 Alternatively, an enquiry could be made to Natural England to use the Kent DLL scheme, through the 'no survey' route. Full information is available at <https://www.gov.uk/government/publications/great-crested-newts-district-level-licensing-schemes>.

11. MITIGATION MEASURES

PROTECTED AND NOTABLE SPECIES

Foraging and Commuting Bats

11.1 In order to reduce a low potential, indirect impact on foraging and commuting bat to negligible, mitigation to reduce any effects of artificial lighting should be implemented, where applicable, in accordance with guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals (ILP, 2018).

- Boundary habitats should not be illuminated so that dark flight corridors for bats are retained.
- Any external lighting should be operated with motion sensors, where health and safety allows.
- Metal halide and fluorescent sources should not be used.
- A warm white spectrum (ideally 2700Kelvin) should be adopted to reduce the blue light component.
- LED luminaries should be used which have a sharp cut off and lower intensity to avoid light trespass.
- Luminaries should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be as low as possible to avoid unnecessary light spill.
- Luminaries should be mounted on the horizontal to avoid upward spill.
- Accessories such as baffles, hoods and louvres should be used to further reduce any light spill and direct it to where it is needed.

Badger

11.2 The following mitigation should be implemented during construction works to avoid harm to individual badgers:

- All holes and excavations should be covered over each night to prevent animals from being trapped or injured.
- If this is not possible, a structure/plank should be placed into the hole to enable animals to escape.

Hedgehog

11.3 The following mitigation should be implemented for hedgehog during the construction phase:

- All holes and excavations should be covered over each night to prevent animals from being trapped or injured.
- If this is not possible, a structure/plank should be placed into the hole to enable animals to escape.
- Any removal of building materials or other debris, should be undertaken with care to prevent harm to hedgehog.
- If any hedgehogs are found during the construction phase they should be carefully relocated to an area outside the development site that offers immediate shelter.

Nesting Birds

- 11.4 No nesting bird habitat loss is anticipated, however should any trees require removal, the following mitigation should be implemented to avoid impact to nesting birds:
- Clearance of scattered trees should be undertaken outside of the bird nesting season where ever possible.
- 11.5 Should impacts to vegetation be unavoidable between March and September, then the following mitigation should be undertaken:
- A nesting bird survey should be undertaken by a suitably experienced ecologist within at least 48hours prior to any impacts.
 - A watching brief should be carried out by a suitably experienced ecologist during any works that impact suitable vegetation within the site.
 - If nesting/nest-building birds are found, no works should commence/continue that are likely to damage or significantly disturb a nest until the young have fully fledged.
- 11.6 Works undertaken during the bird nesting season may result in significant delays to the development programme should activities need to cease due the presence of an active nest. It should be noted that some bird species, such as blackbirds and robins are multiple brooders and may therefore nest within the Site for a number of months.

12. SUGGESTED ENHANCEMENT MEASURES

- 12.1 It is recommended that ecological enhancement measures are included within the proposals in addition to the creation of the recently planted hedgerow. Possible habitat enhancement measures are outlined below.

HEDGEROW CREATION

- 12.2 Native species-rich hedgerows could be created along all Site boundaries. Species could include hazel, blackthorn, hawthorn, spindle, holly, yew, privet, field rose, field maple, dog rose and guelder rose.
- 12.3 Flowering species, such as hawthorn, blackthorn, privet and rose would provide opportunities for nectar feeding invertebrates, such as bumblebees, hover flies and butterflies. Creation of these habitat feature would also benefit bats by providing additional foraging habitat and birds through additional nesting habitat.

NATIVE AND NECTAR RICH PLANTING PLAN

- 12.4 It is understood that a wildflower meadow is proposed within the Site. It is recommended that any planting plans include native, flower rich species, including those that flower in the late and early seasons to enhance the biodiversity value of the Site. Any wildflowers planted should be suitable for the local soil conditions.
- 12.5 The inclusion of climbing plants around the new dwelling would add sheltering opportunities for invertebrates and birds. They can also produce nectar rich flowers for butterflies, bees and hover flies and fruit for birds and small mammals.
- 12.6 The inclusion of herbs within any formal garden areas, such as lavender and sage, would provide nectar for an array of invertebrate species, including bees, butterflies and moths. Providing a range of herb plants would ensure flowering throughout the seasons. The inclusion of plants that produce scent at night would attract night flying invertebrates and as such would also provide foraging opportunities for bats.

BAT BOXES

- 12.7 Integrated bat boxes, such as a 1FR Schwegler Bat Tube, or similar, could be installed on new building within the Site. Integrated bat boxes should be primarily located on the south and west facing aspects located at least 3m above the ground, but can also be installed on different elevations to provide a variety of different environmental roost conditions. Alternatively, bat access tiles can be incorporated into roof elevations of the new house.
- 12.8 Tree mounted bat boxes (Schwegler 2FN, Kent bat box, or similar) could also be installed on a semi-mature tree within the northeast corner of the Site. The bat boxes should be installed at least 3m up the main stem on a southern facing aspect, with a clear flight path into the box from surrounding branches.

BIRD BOXES

12.9 Bird boxes, including for house sparrow and starlings, could be integrated into new house. Woodcrete exterior or integrated terrace boxes for house sparrows could be incorporated into the dwelling. Boxes should be located 2-4m in height and arranged so that loose colonies of house sparrows are encouraged. Open fronted woodcrete nest boxes could also be installed on house elevations. Bird boxes should be located close to eaves and on the north or east elevations to avoid direct sunlight.

BEE BRICKS

12.10 Bee bricks (Green & Blue, or similar), which provide additional nesting opportunities for solitary bee species such as the red mason bee and leaf-cutter bee, could be installed into the fabric of the new building.

12.11 Bee bricks should be installed at least 1m from the ground level on a south, or south-eastern elevation. As a general guide, an area equating to 1sq-m of suitable nectar-rich planting should be available for every bee brick installed.

13. REFERENCES

- CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2017). Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute for Ecology and Environmental Management, Winchester.
- CIEEM (2017a). Guidelines for Ecological Report Writing. Chartered Institute for Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- Institute of Lighting Professionals & Bat Conservation Trust (2018). Bats and artificial lighting in the UK. Bats and the built environment series. Guidance Note 08/18.
- Multi-agency Geographic Information for the Countryside (MAGIC) Interactive Map. Department for Environment, Food and Rural Affairs. <http://magic.defra.gov.uk> (accessed: 09/04/2021).
- UK Biodiversity Action Plan; Priority Habitat Descriptions (2008). BRIG (ed. Ant Maddock).
- UK Habitat Classification Working Group (2018). UK Habitats Classification - Habitat Definitions V1.0 at <http://ecountability.co.uk/ukhabitatworkinggroup-ukhab>.
- UK Habitat Classification Working Group (2018). UK Habitats Classification User Manual at <http://ecountability.co.uk/ukhabitatworkinggroup-ukhab>.

14. APPENDIX 1: SUMMARY OF PLANNING POLICY AND LEGISLATION

14.1 Species afforded protection under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 are also known as European Protected Species. European Protected Species include all species of bats, hazel dormice and great crested newt.

14.2 European Protected Species relate to those listed within the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and are afforded the highest level of protection. These species are also protected under the Wildlife and Countryside Act 1981. Taken together this level of protection makes it an offence to:

- deliberately capture, injure or kill any wild animal of a European protected species,
- deliberately disturb wild animals of any such species
- deliberately take or destroy the eggs of such an animal
- damage or destroy a breeding site or resting place of such an animal

14.3 Disturbance of animals includes in particular any disturbance which is likely:

- to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species, impair their ability to hibernate or migrate
- to affect significantly the local distribution or abundance of the species to which they belong

14.4 The legislation requires that any derogation be dealt with by licencing through an appropriate licencing body (Natural England in England). In determining whether a licence can be granted the licencing body must apply the requirements of Regulation 53, and in particular, the three tests:

1. Regulation 55(2)(e) states: a licence can be granted for the purposes of “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”.

2. Regulation 55(9) states: The relevant licensing body must not grant a licence under this regulation unless it is satisfied—

- (a) that there is no satisfactory alternative; and
- (b) that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

PLANTS

14.5 A number of plant species are protected under Schedule 8 of the Wildlife and Countryside Act 1981. This Schedule lists plant species that are protected under Section 13, which protects from picking and sale of plants or parts of plants listed in Schedule 8.

BIRDS

14.6 All nesting birds are protected under the Wildlife and Countryside Act 1981. With certain exceptions, it is an offence to:

- 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;
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Birds of Conservation Concern

14.7 After reviewing the status of all bird species in the UK, the leading non-governmental bird conservation organisations agreed priorities for bird conservation. This led to the publication of a list of Birds of Conservation Concern. Bird species are either listed as red, amber or green, depending on their status and conservation objectives. Birds listed as red require urgent, effective conservation action.

BADGERS

14.8 Badgers are protected under the Protection of Badgers Act 1992. Under this legislation it is an offence to:

- Wilfully kill, injure or take a badger (or attempt to do so).
- Cruelly ill-treat a badger.
- Dig for a badger.
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it.
- Cause a dog to enter a badger sett.
- Disturb a badger when it is occupying a sett.

COMMON REPTILES

14.9 All common and widespread reptiles, which include viviparous lizard, slow worm, grass snake and adder are protected under the Wildlife and Countryside Act 1981. This makes it an offence to:

- Intentionally or recklessly kill or injure reptiles
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisement to buy or sell any reptile.

INVERTEBRATES

14.10 A small number of invertebrates are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, relating to the designation of SACs, including white-clawed crayfish and Desmoulin's whorl snail.

14.11 A number of invertebrate species also protected under the Wildlife and Countryside Act, such as the heath fritillary and fairy shrimp. Species listed under Schedule 5 are protected from one, some or all of the following:

- Intentional killing, injuring, taking
- Possession or control (live or dead animal, part or derivative)

- Damage to, destruction of, obstruction of access to any structure or place used by a scheduled animal for shelter or protection
- Disturbance of animal occupying such a structure or place
- Offering for sale, possessing or transporting for the purpose of sale (live or dead animal, part or derivative)
- Advertising for buying or selling live or dead animal, part or derivative

STATUTORY PROTECTED SITES

- 14.12 Special Protection Areas and Special Areas of Conservation are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.
- 14.13 Sites of special scientific interest (SSSIs) are protected under the Wildlife and Countryside Act 1981. Natural England is responsible for notifying SSSIs, ensuring they are managed appropriately and assessing and monitoring their condition.
- 14.14 National Nature reserves are created to protect important wildlife habitats, while also providing a resource for scientific research and recreation. Declared under the National Parks and Access to the Countryside and the Wildlife and Countryside Act 1981.

NON-STATUTORY PROTECTED SITES

Ancient Woodland

- 14.15 Land with continuous woodland cover since at least 1600AD. Ancient woods are recognised in UK planning policy, but do not have statutory protection.

NATURAL ENVIRONMENT AND RURAL COMMUNITIES (NERC) ACT 2006

- 14.16 Following consultation with Natural England, the Secretary of State identified species and habitats considered to be of principal importance for the conservation of biological diversity in England. These species and habitats are listed under Section 41 of the Act. The list is to be kept under review and revisions are made as necessary as part of the progress reports on the Biodiversity Strategy for England.
- 14.17 Following the Biological Diversity in Japan, 2012, a new initiative in England, 'Biodiversity 2020', replaced the former UK Biodiversity Action Plan Species aiming to reinforce the protection of Section 41 habitats and species.

THE NATIONAL PLANNING POLICY FRAMEWORK

- 14.18 The National Planning Policy Framework was revised in February 2019 and sets out the Government's planning policies for England and how these are expected to be applied. Within this document, Chapter 15 is titled Conserving and Enhancing the Natural Environment.
- 14.19 Of particular relevance within this chapter are the following statements:

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

- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*

To protect and enhance biodiversity and geodiversity, plans should:

- *promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*

When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

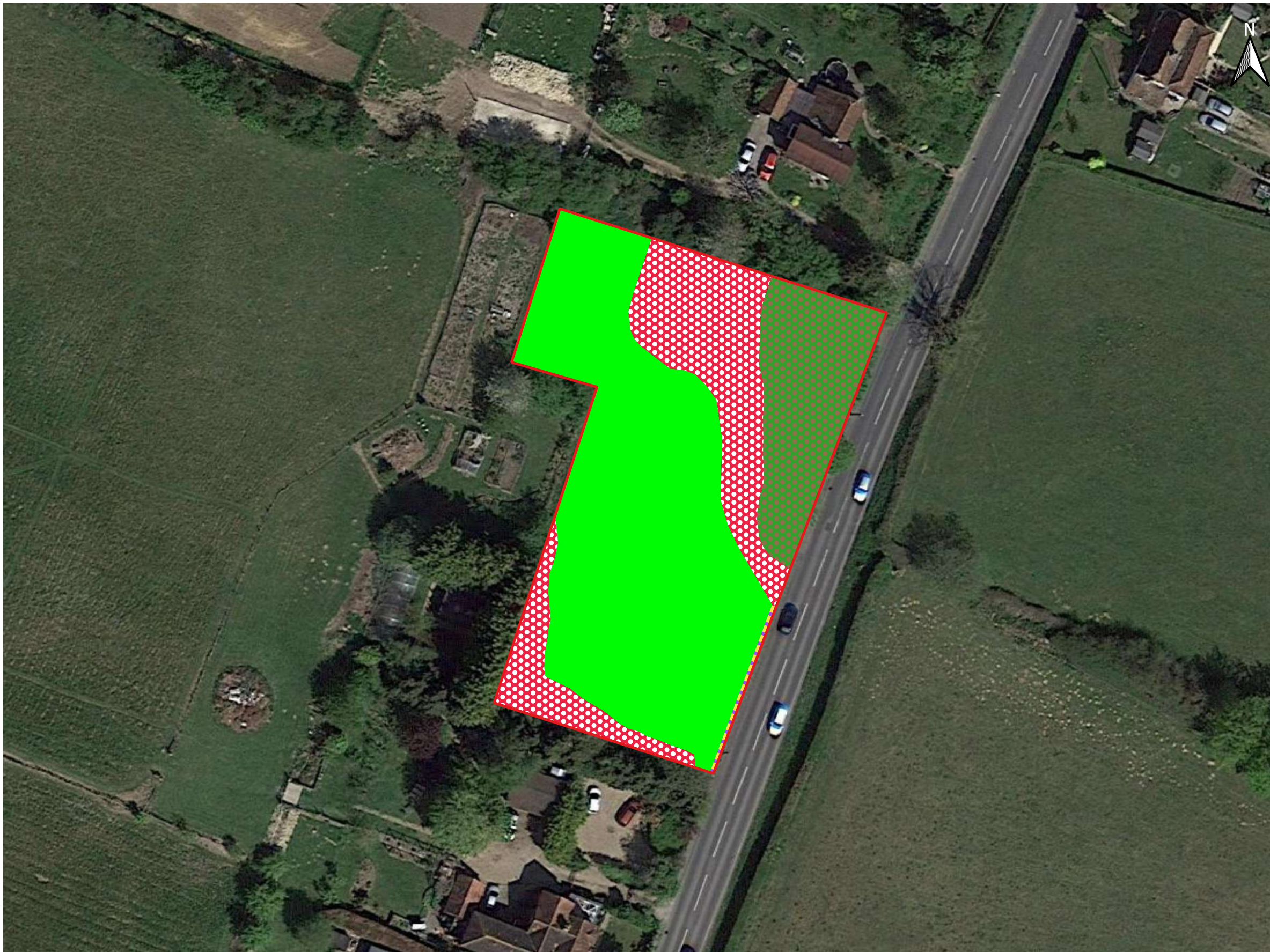
b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

15. APPENDIX 2: HABITAT PLAN

See overleaf.



Legend

- g4 - modified grassland
- w1g - other woodland-broadleaved
- u1c - artificial unvegetated unsealed surface
- Other Hedgerow
- Site boundary

Note:

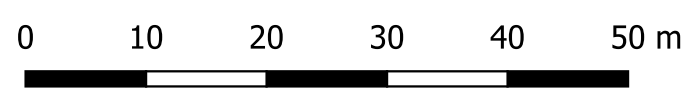
Habitats mapped by eye according to UK Habitat Classification.
Date 31/03/2021



Habitat Plan

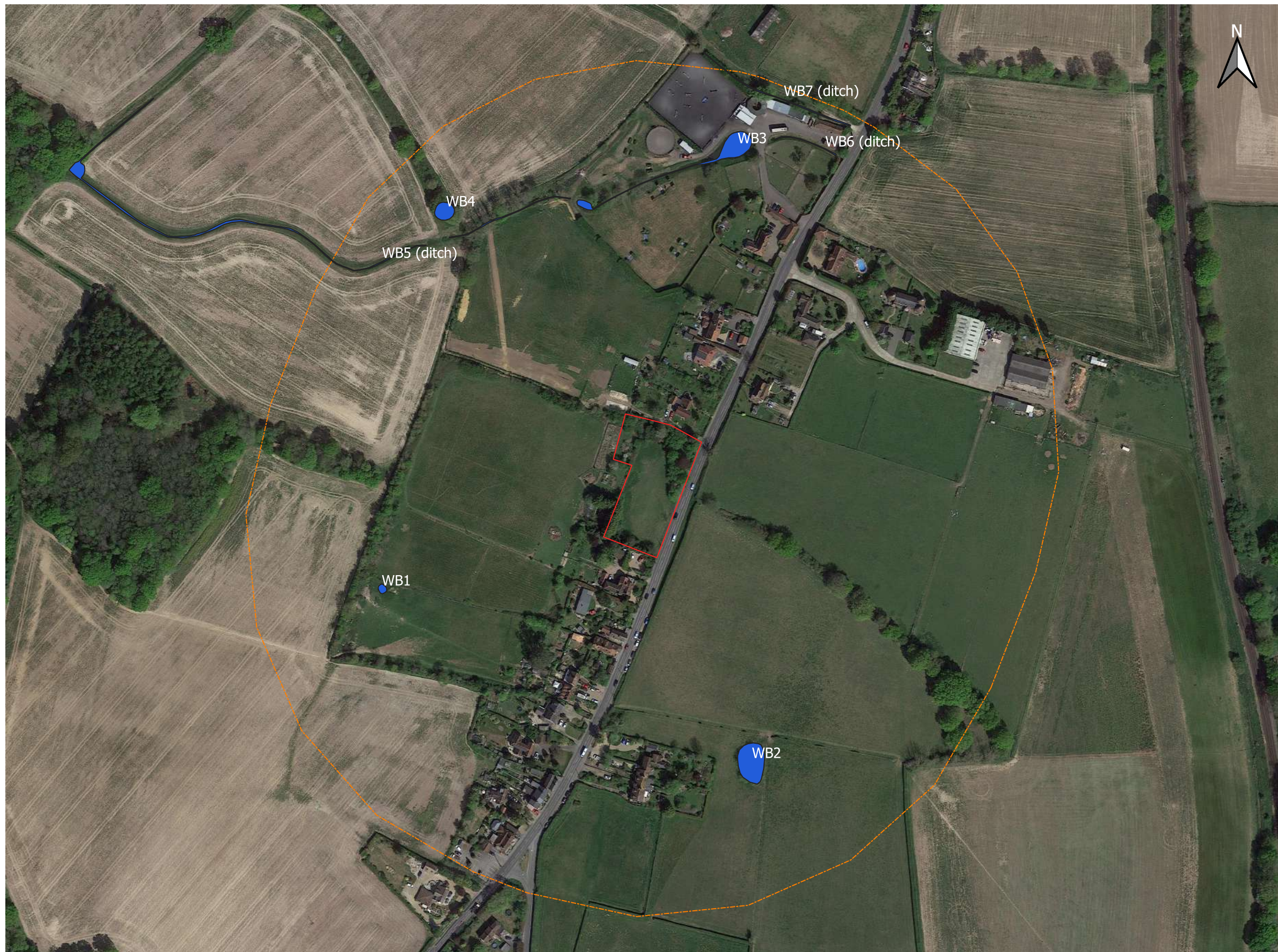
Land off Maidstone Road
Nettlestead
Kent

Drawing ref:	0663_DR02
Revision:	-
Date:	09/04/2021
Scale:	1:1000
Paper size:	A3



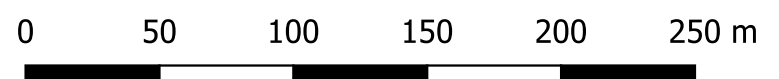
16. APPENDIX 3: WATERBODY LOCATION PLAN


See overleaf.



Legend

- Waterbody
- 250m Buffer
- Site boundary



 native ecology <small>PROMOTING BIODIVERSITY INTEGRATION</small>	
Waterbody Location Plan	
Land at Maidstone Road Nettlestead Kent	
Drawing ref:	0663_DR01
Revision:	Rev A
Date:	09/04/2021
Scale:	1:5000
Paper size:	A3