



Unit 4, Langham Stables, Langham Lane, Lodsworth, Petworth, West Sussex GU28 9BU

Ecological Assessment

Lidsey Lodge Farm, Lidsey

Author: Owen Crawshaw BSc (Hons) MCIEEM

Reviewed by: Dr Ryan Walker MCIEEM, CEnv

29th April 2021

Project No: P4214

The Ecology Co-operation Ltd
Registered Office: Greens Court, West Street, Midhurst, West Sussex, GU29 9NQ
Company number: 8905527



Document Control

Issue No	Author	Reviewer	Issue Date	Additions/alterations	Notes
Original	OC	RW	29/04/21		

This report has been prepared by The Ecology Co-operation Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client. This report only becomes the property of the client once payment for it has been received in full.

We disclaim responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.



Report Summary

1. The Ecology Co-op has been commissioned by Mr J. Langmead to undertake a Preliminary Ecological Appraisal at Lidsey Lodge Farm, Bognor Regis. A site walkover survey visit was carried out by Owen Crawshaw BSc (Hons) MCIEEM on the 8th April 2021, to evaluate the habitat value of the site and its potential to support EU and UK protected/notable species. Following the initial site visit recommendations were made for species-specific Phase 2 surveys to determine the presence/likely absence of great crested newts *Triturus cristatus* and water voles *Arvicola amphibius*; the results of which are incorporated within this report. The purpose of this report is to record the findings of the survey and identify potential ecological constraints and opportunities in relation to a proposal, which will include demolition of the existing agricultural buildings and construction of up to eight new residential dwellings with associated hard and soft landscaping.
2. The site measures approximately 0.75ha in area and comprises of a yard of concrete hardstanding and contains five agricultural building used for the storage and processing of grain. The site is bordered along its south-eastern and eastern boundaries by raised earth banks and scrubby hedgerow. A wet ditch also exists to the immediate south-east and east of the site.
- 3.
4. All of the buildings within the site were assessed as having ‘negligible’ potential to support roosting bats.
5. Two buildings were assessed as functioning as occasion barn owl roosts, with very infrequent use. The buildings have also been used by nesting wood pigeons *Columba palumbus*
6. Environmental DNA sampling and testing of the wet ditch adjacent to the site confirmed the likely absence of great crested newts.
7. No evidence of water voles was recorded within the wet ditch adjacent to the site, however suitable habitat is present within close proximity and the species is known to be present within the local area.
8. Precautionary measures are set out to avoid impacts on nesting birds, reptiles, water voles and hedgehogs.
9. Recommendations are made with regard to enhancement of the site through native planting, as well as species-specific enhancements for roosting bats and nesting birds.

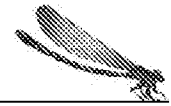


CONTENTS PAGE

1	INTRODUCTION	1
1.1	Purpose of the Report	1
1.2	Background	1
1.3	Policy and Legislation	3
2	METHODOLOGY	3
2.1	Desk Study	4
2.2	Field Survey	4
2.3	Badgers	4
2.4	Bats	5
2.5	Breeding Birds	5
2.6	Dormice	5
2.7	Great Crested Newt	6
2.8	Reptiles	6
2.9	Riparian Wildlife	7
2.10	Other Notable Species	7
3	BASELINE CONDITIONS	7
3.1	Designated Sites and Granted EPS Licences	7
3.2	Habitats	9
3.3	Badgers	15
3.4	Bats	15
3.5	Birds	16
3.6	Dormice	16
3.7	Great Crested Newts and Other Amphibians	17
3.8	Reptiles	18
3.9	Riparian Wildlife	18
3.10	Invasive Non-native Species	19
3.11	Other Notable Species	20
3.12	Survey Limitations	20
4	IMPACT APPRAISAL	20
4.1	Habitats	21
4.2	Badgers	21
4.3	Bats	21
4.4	Birds	21
4.5	Dormice	22
4.6	Reptiles	22
4.7	Riparian Wildlife	22
4.8	Invasive Non-native Species	23
4.9	Other Notable Species	24
5	OPPORTUNITIES FOR ENHANCEMENT	24
5.1	Habitats	24
5.2	Bats	24
5.3	Birds	24



6 CONCLUSIONS	24
APPENDIX 1 – Wildlife Legislation and National Planning Policy	26
APPENDIX 2 –Adoption Arun Local Plan 2011-2031 (July 2018)	31
APPENDIX 3 – Great Crested Newt ‘Habitat Suitability Index’ Values	34
APPENDIX 5 – Reducing Impacts of Artificial Light	36



1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake a Preliminary Ecological Appraisal (PEA) of Lidsey Lodge Farm, Sack Lane, Bognor Regis by Mr J. Langmead. This report presents the findings of a walkover survey undertaken by Owen Crawshaw BSc (Hons), a full member of the Chartered Institute of Ecology and Environmental Management MCIEEM), and Natural England Level 2 Bat Survey Class Licence and Barn Owl Survey holder, on 8th April 2021. It provides details on the potential for any protected/notable species and/or habitats to be present at the site and a simple assessment of the potential ecological constraints and opportunities in relation to a proposal, which will include demolition of the existing agricultural buildings and construction of up to eight new residential dwellings with associated hard and soft landscaping.

Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment (EclA) of the proposal are provided where necessary, and possible measures to avoid, mitigate and/or compensate for significant adverse effects are summarised. The potential to incorporate ecological enhancement measures as part of the scheme is discussed, in addition to any requirement to achieve biodiversity net gain.

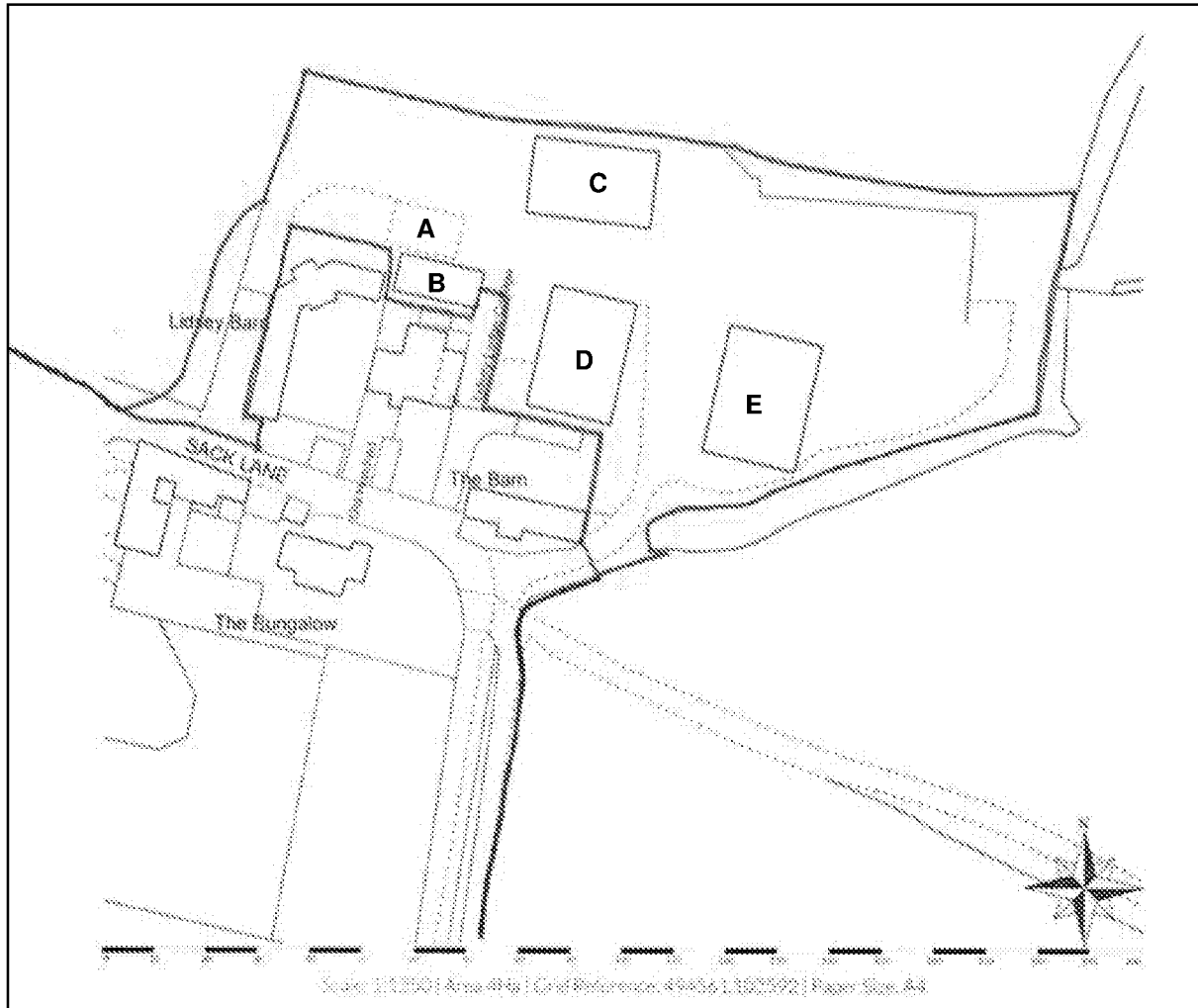
This PEA report is designed to inform the client and their team (as appropriate) about the initial findings of the site walkover and desk study research in relation to the site proposals, highlighting the key ecological constraints and opportunities, and any further survey requirements.

1.2 Background

The site is located at Lidsey Lodge Farm, Bognor Regis. The central grid reference for the site is SU 9456 0261.

The site measures approximately 0.75ha in area and comprises of a yard of concrete hardstanding and contains five agricultural building used for the storage and processing of grain. The site is bordered along its south-eastern and eastern boundaries by raised earth banks and scrubby hedgerow. A wet ditch also exists to the immediate south-east and east of the site. Agricultural land surrounds the site, including extensive areas of floodplain with an associated network of drainage ditches to the east. Figures 1 shows the boundary of the site.

The proposed development includes include demolition of the existing agricultural buildings and construction of up to eight new residential dwellings with associated hard and soft landscaping (Figure 2).



Figures 1a (top) & 1b (bottom). Top - A red line plan of the study site at Lidsey Lodge Farm, with study buildings indicated. Bottom - An aerial image showing the location of the site. The approximate site boundary is outlined in red. Image produced courtesy of Google maps (map data ©2021 Google).



Figure 2. A proposed layout plan of the development at Lidsey Lodge Farm. Reproduced courtesy of Lizard Landscape Design and Ecology (reference: LLD2031-LAN-REP-001).

1.3 Policy and Legislation

Legal protection applying to relevant bird, mammal, herpetofauna, invertebrate species and flora, and current nature conservation planning policy is outlined in Appendix 1 of this report.

Where possible, this report provides guidance on how the proposal can be designed to meet the requirements of both local planning policy and the National Planning Policy Framework (NPPF). Details of the NPPF can be found in Appendix 1 and relevant local planning policy by Arun District Council is provided in Appendix 2.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the Guidelines for Preliminary Ecological Appraisal¹, but also consider the Guidelines for Ecological Report Writing, Second Edition².

¹ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

² CIEEM (2017). *Guidelines for Ecological Report Writing, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.



2.1 Desk Study

A search for existing records of protected species, species of conservation concern and invasive non-native species was requested from the Sussex Biological Records Centre (SxBRC) within a radius of 1km of the site.

A search of on-line mapping resources was undertaken to identify the location of any features of potential ecological interest including ponds within 500m (relevant to great crested newts *Triturus cristatus*), watercourses (relevant to riparian mammals and crayfish) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats and dormice *Muscardinus avellanarius*) in the wider landscape around the site. The connectivity of the site to these features, buildings and other semi-natural habitats, such as grassland and heathland, are also relevant to great crested newts, reptiles and a wide variety of notable species of conservation concern.

The MAGIC website resource (www.magic.gov.uk) was used to identify the location of designated sites for nature conservation and European Protected Species (EPS) licences granted in relation to the survey site.

2.2 Field Survey

A site walkover survey was undertaken on 8th April 2021 during which the habitats contained within the site were described and evaluated. Since this site is relatively small in scale and contains limited semi-natural habitat diversity, it was not considered necessary to undertake comprehensive Phase 1 Habitat Mapping of the site. All habitat types contained within the site, together with the dominant botanical species and indicators of important habitat types, such as ancient woodland or unimproved grassland, have simply been listed and described where identified.

Habitats and features at the site were evaluated for their potential to support legally protected species and/or species of conservation interest. In addition, observations of any important plant communities, bird assemblages or other potentially valuable ecological features were recorded.

Details of the preliminary survey methods for each legally protected species are given below. Any site-specific limitations to the survey, e.g. access constraints or seasonal constraints, are set out in section 3.12.

2.3 Badgers

Badgers *Meles meles* exploit a range of habitats, including gardens, coniferous woodland, deciduous woodland, mixed woodland and arable land. They live in an underground system of tunnels and nesting chambers, known as a sett, with territories ranging from 30ha to 150ha or more.

Habitats within the site and surrounding area were broadly assessed for their potential to support badgers. Any signs of badger activity, for example setts, footprints, latrines, well-worn paths and foraging marks, were recorded. Further surveys were recommended as appropriate.



2.4 Bats

Bats can use a wide range of features for roosting purposes, including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy and loose bark.

A detailed building inspection was carried out in accordance with best practice guidance as set out by the Bat Conservation Trust³; the inspection comprised identification of potential access points and 'Potential Roost Features' (PRFs) that bats could use and any evidence indicating the presence of bats using the building, such as rub marks, feeding remains, staining or droppings. The survey included a ground-based external inspection around the building and internal inspection of any enclosed loft spaces or roof voids, where safe access was possible.

The potential for roosting bats for each feature, or group of features was assessed as negligible, low, moderate, or high, in accordance with best practice. Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate. Following the building assessment, further surveys were recommended as appropriate.

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats. Further surveys were recommended as appropriate.

2.5 Breeding Birds

Birds can use a wide range of natural and artificial habitats when breeding, including trees, hedgerows, fields, houses and garden sheds. The habitats contained within the site and adjacent areas were broadly assessed for their potential to support important bird species/assemblages, and breeding birds. Any birds identified during the site visit were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern⁴ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981). Buildings within the site were searched for evidence of use (roosting/nesting) by barn owls *Tyto alba*. The surveyor searched for evidence including: pellets, feathers, egg shell and active nests. Mr Crawshaw holds a Barn Owl Survey Class Licence from Natural England.

2.6 Dormice

Dormice are found in deciduous woodland and hedgerows, feeding on flowers, pollen, fruits, insects and nuts, favouring hazel *Corylus avellana* and honeysuckle *Lonicera periclymenum* for food and as bedding. The site was broadly assessed for its potential to support dormice. This included use of online mapping resources to assess the surrounding area for connectivity to large blocks of woodland, scrub

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

⁴ Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, Leigh., Musgrove, A., Noble, D., Stroud, D., Gregory, R. (2015). *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds 108, pp 708-746.



and extensive hedgerow networks.

2.7 Great Crested Newt

Great crested newts breed in ponds during the spring and spend the rest of the year feeding on invertebrates primarily in semi-natural habitats including woodland, hedgerows, marshes and tussocky grassland. A desk study was undertaken to identify ponds and wet ditches within 500m of the site that might support breeding great crested newts. Where access permission was granted, or ponds could be viewed from public roads or footpaths, the ponds were assessed for their potential to support great crested newts using the Habitat Suitability Index (HSI)⁵. The value of the site for terrestrially foraging great crested newts and any features that might be used by hibernating newts has also been assessed.

Further surveys were recommended as appropriate, in accordance with best practice guidance, see following section.

2.7.1 Environmental DNA Sampling and Analysis

This relatively new technique allows a quick and reliable qualitative measure of the presence/likely absence of great crested newts. It involves collection of water samples from a pond or static or slow flowing water body, using a standard protocol set out by Natural England⁶. The samples are sent to an approved laboratory to isolate and amplify environmental DNA (eDNA) shed into the water by amphibians during the breeding season. The eDNA samples were collected from the wet ditch to the immediate east of the site on 15th April 2020 by Mr Crawshaw (Natural England Great Crested Newt Level 1 Survey Class Licence holder) with assistance from Holly Waters.

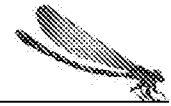
2.8 Reptiles

The common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica* and adder *Vipera berus* are widespread species that can be found in any of these habitats, whereas smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* have much more restricted and isolated populations on lowland heathland and sand dunes.

Habitats on the site were broadly assessed for their potential to support reptiles. Particular attention was paid to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (rough grassland and scrub). Further surveys were recommended as appropriate.

⁵ Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-155.

⁶ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. *Analytical and methodological development for improved surveillance of the Great Crested Newt*. Defra Project WC1067. Freshwater Habitats Trust: Oxford.



2.9 Riparian Wildlife

Any watercourses identified during the desk study or field survey were assessed for their suitability to support otter *Lutra lutra*, water vole *Arvicola amphibius* and American mink *Neovison vison*. Suitable habitat includes grassy banks along slow-moving rivers, ditches, streams, lakes, ponds, canals, as well as marshland and upland. Further surveys were recommended as appropriate, in accordance with best practice guidance, see following section.

2.9.1 Water Vole Survey

A water vole survey of the wet ditch to the immediate south-east of the site was undertaken by Mr Crawshaw and Miss Waters on 15th April 2021. The surveyors walked an approximate 240m length of the ditch looking for evidence of water voles including: burrows, latrines, feeding stations, gnawed vegetation and footprints. The surveyors combined wading in the channel as well as walking along the toe of the banks, searching at least 1m into the water and 1m up the banks. The survey was undertaken in accordance with best practice guidance⁷.

2.10 Other Notable Species

The site's habitats were broadly assessed for their potential to support species of principal importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse *Micromys minutus*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, and many bird species. The site was broadly assessed for its potential to support important invertebrate assemblages with particular attention paid to features such as standing deadwood, wet flushes, bare earth banks and botanically rich areas.

3 BASELINE CONDITIONS

3.1 Designated Sites and Granted EPS Licences

There are no statutory sites of national importance (i.e. Sites of Special Scientific Importance), or non-statutory sites, within 1km of the site. Furthermore, there are no statutory sites of international importance (Special Areas of Conservation or Special Protection Areas) within 5km of the site.

⁷ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

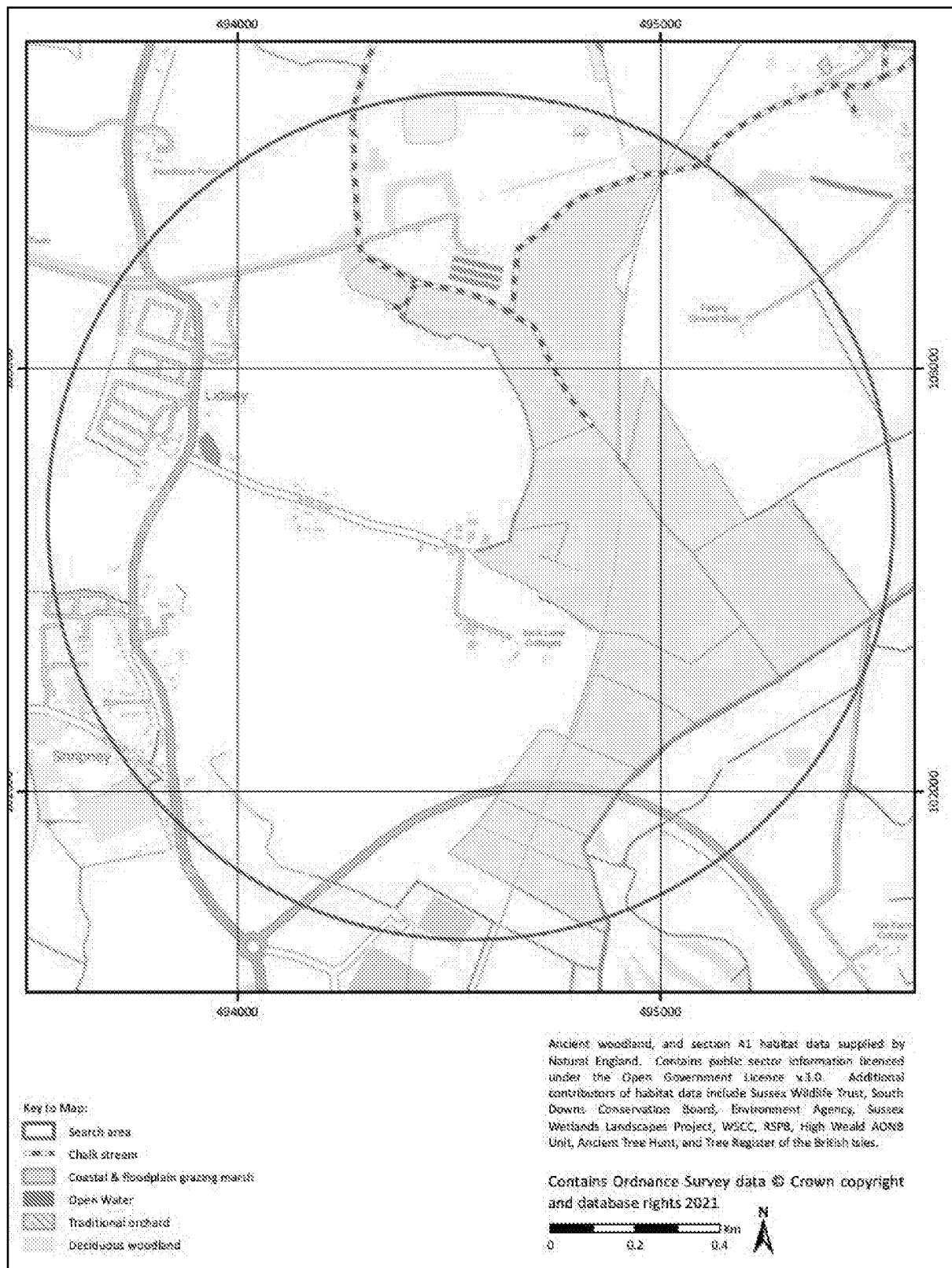


Figure 3. Priority habitats within 1km of Lidsey Lodge Farm, Bognor Regis. (provided by SxBRC).

There are no granted EPS licences for mitigation projects within 1km of the site boundary. Bat survey reports were obtained from a property located opposite the site (approximately 45m south-west). Dusk emergence surveys identified roosts used by common pipistrelle *Pipistrellus pipistrellus* (peak count of



six bats) and soprano pipistrelle *P. pygmaeus* (peak count of two bats)⁸.

3.2 Habitats

The site is dominated by a yard of hardstanding which supports a number of agricultural buildings which are described below. Some ruderal vegetation has colonised the peripheries of the yard with species such as: ragwort *Senecio jacobaea*, self-heal *Prunella vulgaris*, ox-eye daisy *Leucanthemum vulgare*, mallow *Malva* sp., scentless mayweed *Tripleurospermum inodorum*, three-cornered garlic *Allium triquetrum*, hogweed *Heracleum sphondylium*, Spanish bluebells *Hyacinthoides hispanica*, and spear thistle *Cirsium vulgare*.

The site is bordered along its eastern and south-eastern edges by a raised earth bank and associated scrubby hedgerow which includes bramble *Rubus fruticosus* agg., buddleia *Buddleja davidii*, oak *Quercus robur* and elder *Sambucus nigra*. Areas of rubble and rubbish have been piled within the site at the base of the bank, also a large pile of logs exists next to Building E at the south-eastern edge of the site. A wet ditch with areas of pooled water exists beyond the bank and scrub, to the immediate south-west of the site. The northern boundary is marked by a dry ditch, whilst the western edge of the site abuts an adjacent arable field.

Building A

An open-sided grain dryer barn containing two large metal grain hopper which extend from the ground to just below roof height. The structure is supported by a steel frame with an internal dividing wall which does not extend all the way up to the roof. The wall is constructed of corrugated sheet metal arranged atop a base of concrete blockwork. The roof of the building is created from a pitched arrangement of corrugated asbestos sheets which are fitted directly to the frame. The interior space is open to the underside of the roof with no voids or lining.

Building B

A large grain drying barn constructed from walls of corrugated metal sheeting with some corrugated asbestos sheeting in places. The barn supports a total of ten large grain hoppers which extend from ground level to floor height. Five hoppers are arranged along the northern side of the building, with a further five along the southern side. These are separated by both ground level and raised walkways. The roof is pitched in its design and is created by corrugated asbestos sheeting fitted to the metal frame. A large cupola exists within the roof towards the western side and internally creates a platform measuring approximately 1.5m x 1.5m in area.

Building C

A large modern barn created from a steel frame which supports walls of corrugated metal sheeting and a pitched roof of corrugated asbestos. The interior space is used for the storage of grain and is open to the underside of the roof with no voids or lining. Access to the barn is achieved through a metal roller-shutter door or an adjacent access door.

Building D

⁸ Sue Harris Bat Surveys. (2016). *Report of Dusk Emergence Surveys – The Bungalow, Sack Lane, Lidsey.*



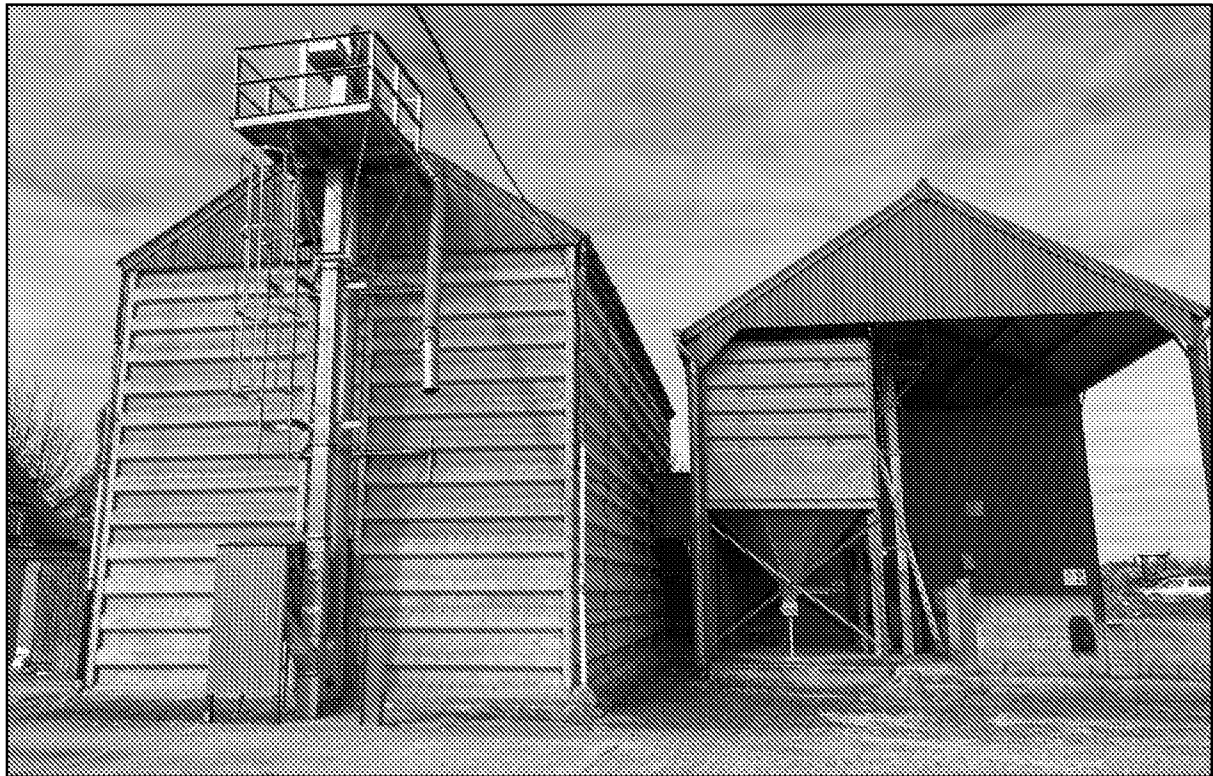
This building is very similar in its design to Building C. The internal space contains a pre-fabricated wooden shed (used as an office) as well as a small room created from walls of corrugated metal (used as a tool store)

Building E

This building is very similar in its construction to Buildings C & D. However, at the time of the survey, the building's roller shutter door had been left open allowing open access to the interior space.



Photograph 1. A yard of hardstanding which dominates the site at Lidsey Lodge Farm.



Photograph 2. Building A (right) and Building B (left) viewed from the west.



Photograph 3. The raised walkway between large metal grain hoppers within the upper level of Building B.



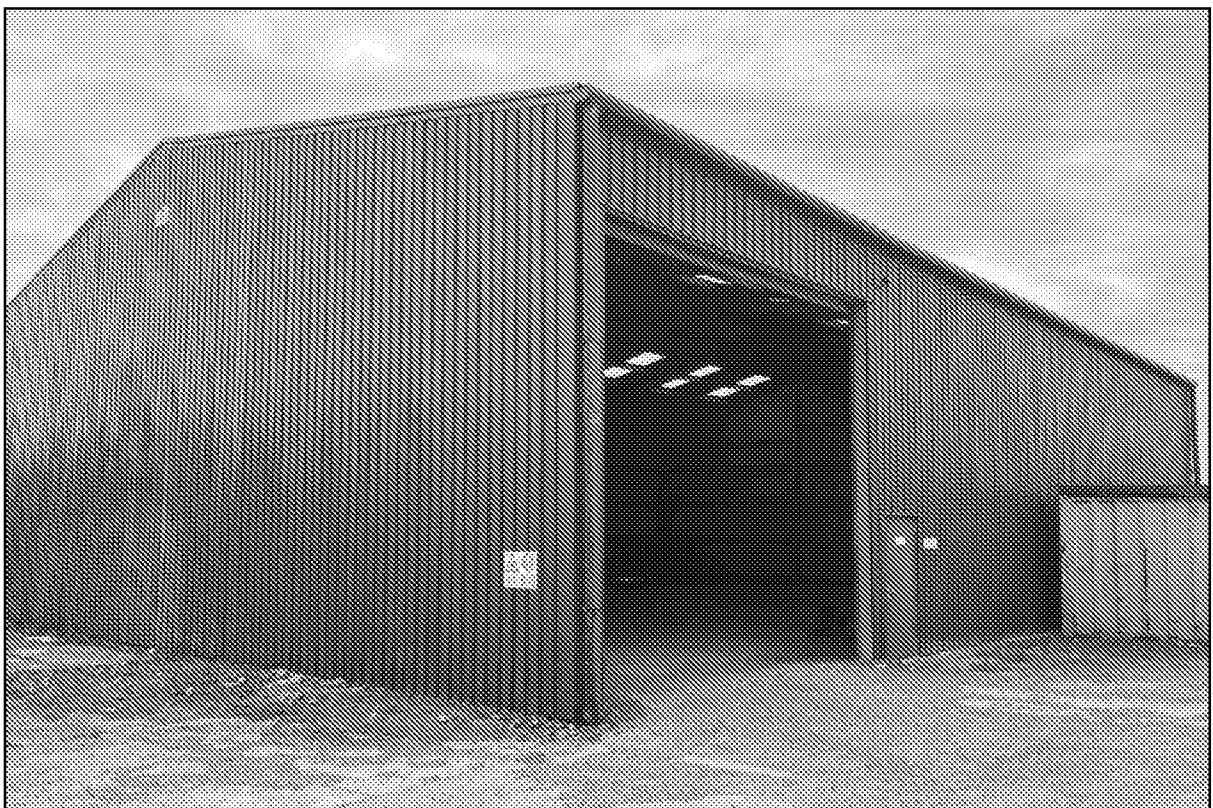
Photograph 4. Building C viewed from the south-west.



Photograph 5. The interior of Building C.



Photograph 6. Building D viewed from the north-west.



Photograph 7. Building E viewed from the north-west.



Photograph 8. The scrubby hedgerow at the south-eastern corner of the site, which continues along the eastern boundary.



Photograph 9. Raised earth banks with rubble piles and ruderal vegetation at the eastern site boundary.



3.3 Badgers

No signs of any badger activity were seen during the survey assessment, though there are habitats of value for this species within the site and surrounding landscape. It is likely that if any setts were situated within 30m of the site boundary, then evidence of badger activity would have been observed.

Records of badgers are not provided by the records centre, due to the sensitive nature of this information.

3.4 Bats

Details of the bat roost assessment of the site's buildings are summarised in Table 1 below.

Table 1. Assessment of PRFs associated with the outbuildings at Lower Farm, Petersfield.

Building	Description of features	Assessment of suitability
Building A	No evidence of bats was recorded and no suitable PRFs were identified in association with the building.	Negligible
Building B	No evidence of bats was recorded and no suitable PRFs were identified in association with the building.	Negligible
Building C	No evidence of bats was recorded and no suitable PRFs were identified in association with the building.	Negligible
Building D	No evidence of bats was recorded and no suitable PRFs were identified in association with the building.	Negligible

Habitats within the site are considered to be of 'low' suitability to foraging bats. However, the ditch adjacent to the south-eastern boundary provides a direct connection to habitat of greater value i.e. floodplain wetlands within the wider surroundings.

SxBRC records indicate the presence of five confirmed species of bat within 1km of the site boundaries which are shown in more detail in Table 2.

Table 2. Bat records returned within a 1km radius of the site.

Species	No. of records
Common pipistrelle <i>Pipistrellus pipistrellus</i>	5
Soprano pipistrelle <i>P. pygmaeus</i>	1
<i>Pipistrellus</i> spp.	3
Brown long-eared <i>Plecotus auritus</i>	2
<i>Plecotus</i> spp.	1
Noctule <i>Nyctalus noctula</i>	1
Barbastelle <i>Barbastella barbastellus</i>	4

Overall, the bat roost suitability at this site is assessed as 'negligible', considering the condition of the building and its context within moderate value foraging habitat for bats.



3.5 Birds

Evidence of barn owls was recorded within Buildings A & E, this consisted of two old pellets (approximately 8-15 months in age) within Building A, and one old pellet (8-15 months in age) and one fresh (<1 month old) pellet within Building E. These buildings are assessed as being occasional roosts, whilst no evidence of nesting by the species was recorded within the site.



Photograph 10. A barn owl pellet within Building E, it was concluded that the pellet was <1 month old.

An active woodpigeon nest was recorded within Building E, whilst inactive pigeon nests were recorded within Building A.

Further opportunities for nesting birds are created within the scrubby hedgerow border along the eastern and south-eastern boundaries. The habitat is suitable for nesting by common garden and farmland birds including notable species such as dunnock *Prunella modularis*, song thrush *Turdus philomelos* and/or bullfinch *Pyrrhula pyrrhula*.

The SxBRC provided a large number of bird records, pertaining to 167 species recorded within the search area. Of these records, 26 are priority species of conservation concern (S41, NERC Act, 2006), 36 are listed on Schedule 1 (Wildlife and Countryside Act, 1981 as amended and 36 are on the red list.

3.6 Dormice

The scrubby hedgerow along the eastern and south-eastern boundaries of the site is considered to provide suitable yet sub-optimal habitat for dormice within the site.

The SxBRC did not provide any records of dormice within 1km of the site.



3.7 Great Crested Newts and Other Amphibians

A wet ditch runs along the south-eastern edge of the site. The ditch is fed by a culverted drain at its south-western end, located at one of the existing access points to the site. The ditch continues north-east where at the time of the survey it had formed two areas of pooled water adjacent to the site boundary. Beyond this the ditch connects to reed *Phragmites australis* lined drainage ditches within the surrounding floodplain grazing marsh.

At the time of survey, the amount of standing water present measured approximately 120m². The ditch is heavily shaded by the adjacent raised banks and associated scrubby hedgerow. Emergent vegetation is dominated by reed sweet grass *Glyceria maxima*, which forms dense mats of dried grass along the banks. Much of the ditch's channel which runs adjacent to the site's south-eastern boundary is filled by pondweed *Elodea* sp. with duckweed *Lemnoidea* sp. across much of its surface. The pooled area at the eastern corner of the site contained clear water with no visible aquatic plants. No fish were recorded within the ditch, however a pair of mallards *Anas platyrhynchos* were observed in the ditch on 8th April 2021.

The SxBRC did not hold any records of great crested newts from within the search area. The only amphibian recorded returned within the desk study was that of two smooth newts *Lissotriton vulgaris* observed in a ditch located approximately 860m north of the site (1996 record).

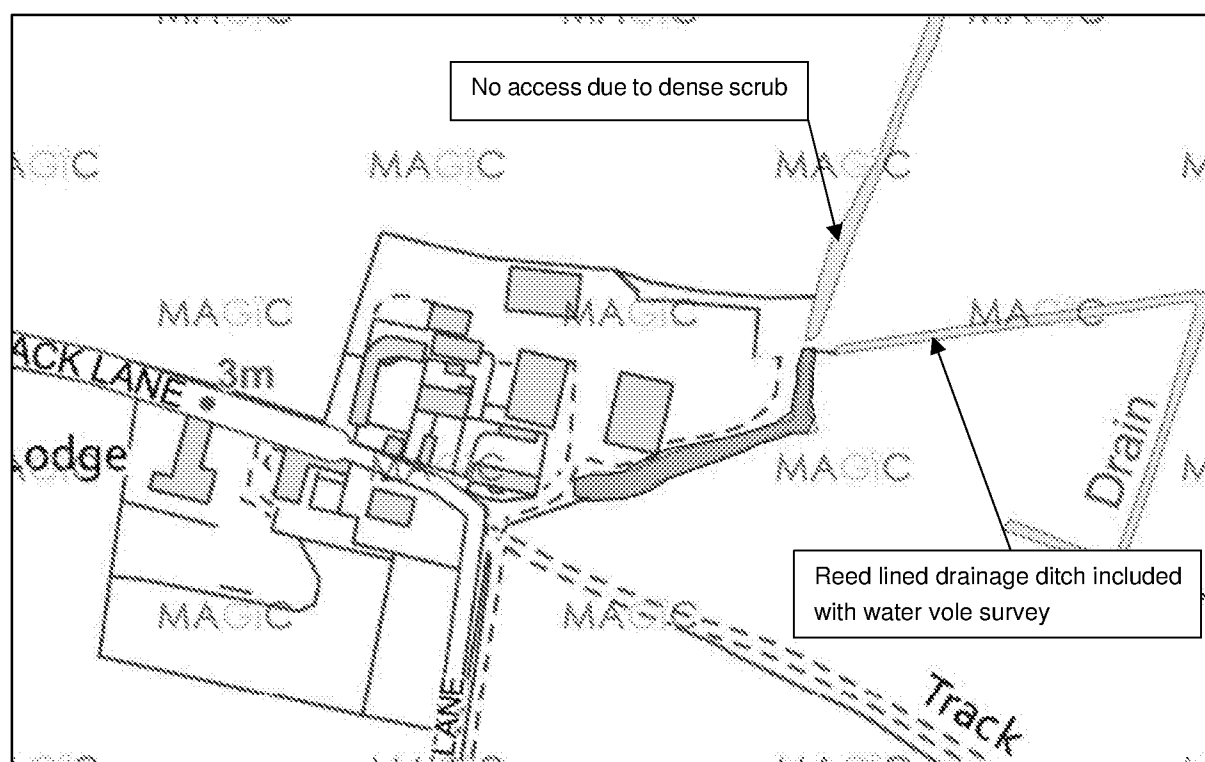


Figure 4. A plan showing the location of the wet ditch (shown in blue) and associated habitats, located adjacent to the site at Lidsey Lodge Farm. Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).



Photographs 11a (left) & 10b (right). Views of the wet ditch with areas of pooled water located to the immediate south-east of the site.

The HSI assessment of the ditch concluded the waterbody is of 'Average' suitability to support great crested newts (HSI Score = 0.66).

The main body of the site provides unsuitable terrestrial habitat for amphibians being composed almost exclusively of buildings and hardstanding. The raised banks, associated rubble/log piles and the scrubby hedgerow provide potentially suitable foraging and sheltering opportunities for amphibians including the great crested newt should they be present within waterbodies in the local surroundings.

3.7.1 Environmental DNA Sampling and Analysis

The eDNA sampling returned a negative result, confirming the likely absence of great crested newts from the wet ditch (Appendix 4). The species is therefore considered to be absent from the site and its immediate surroundings.

3.8 Reptiles

The raised banks, associated rubble/log piles and the scrubby hedgerow provide potentially suitable foraging and sheltering opportunities for common reptiles including slow worm and common lizard. The proximity of the site to drainage ditches is also considered to increase the likelihood of grass snake being present.

The SxBRC returned seven records of slow worm, four records of common lizard and one record of grass snake from within the search area. All of the records pertain to a location approximately 440m south east of the site (2019 records).

3.9 Riparian Wildlife

The wet ditch, described in detail in section 3.7, was assessed as having potential to support water voles. The ditch was also noted to connect to further areas of potentially highly suitable habitat to the east within adjacent floodplain habitat.

Water voles are known to be present within the local area, the SxBRC provided six records of the



species from within 1km of the site; the nearest of which pertains to a location

The ditch is not considered suitable for otters, given its shallow nature, or for white-clawed crayfish *Austropotamobius pallipes* given the lack of flow, dense vegetation within the water column and lack of stony substrate within the channel.

The SxBRC did not provide any records of otter or white-clawed crayfish from within the search area.

3.9.1 Water Vole Survey

No evidence of water voles was recorded during the survey of the wet ditch and the section of connected reed-lined drainage ditch.

3.10 Invasive Non-native Species

Three cornered-garlic is present within the site, to the western side of Building D (Figure 5). The species is listed on Schedule 9 of the Wildlife and Countryside Act, 1981 as amended.

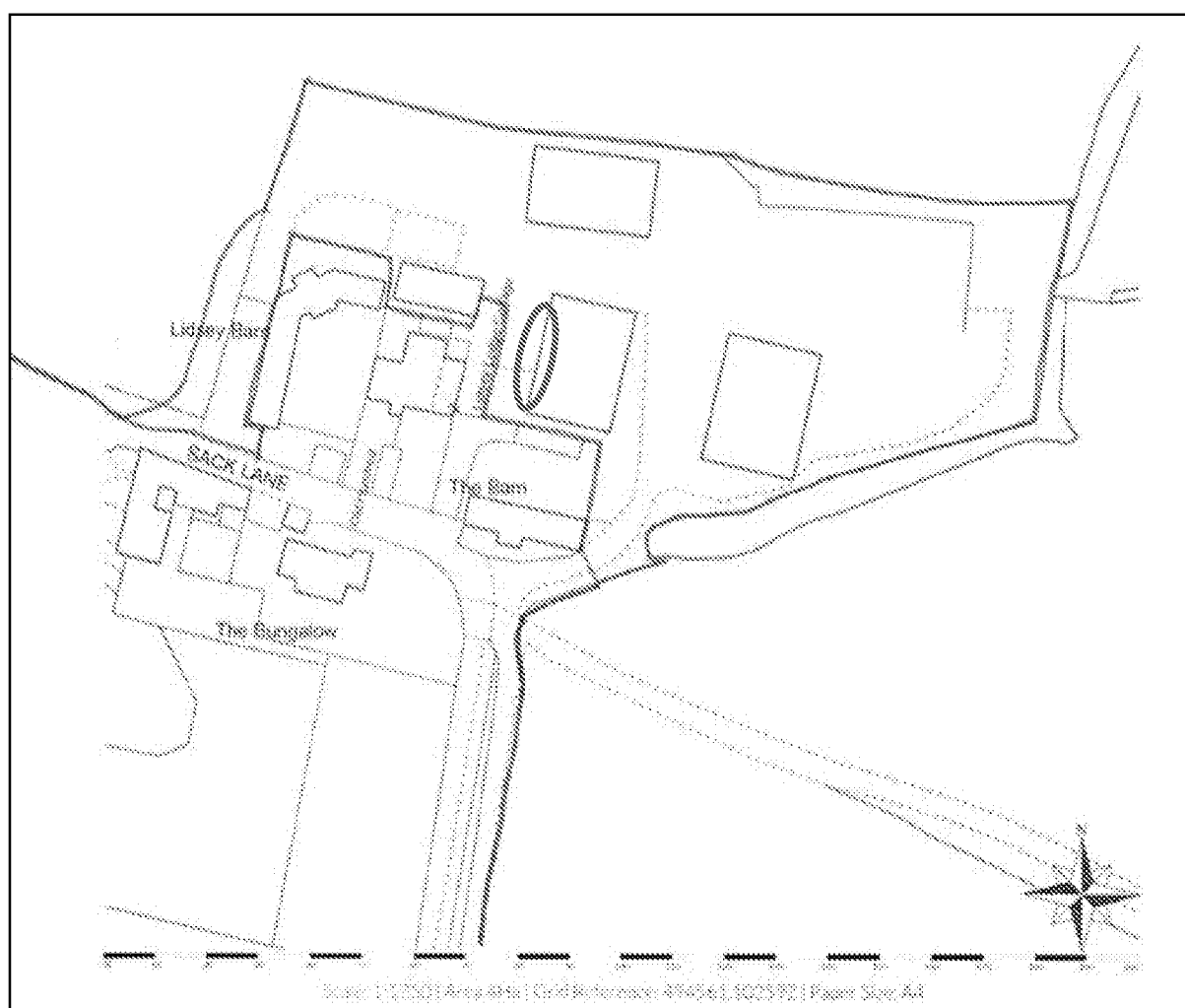


Figure 5. The location of three-cornered garlic within the site.



Photograph 12. An area of invasive three-cornered garlic at the western side of Building D.

The SxBRC provided 50 records pertaining to 18 species of non-native/invasive birds and plants.

3.11 Other Notable Species

The scrubby hedgerow and large log pile within the site are potentially suitable for use by sheltering hedgehogs *Erinaceus europeus*.

3.12 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey but may be evident at other times of the year. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.

It was not possible to fully inspect the ditch which runs along the eastern edge of the site and continues northwards, when assessing the surroundings for suitability for great crested newts and searching for evidence of water voles, due to the presence of dense scrub.

4 IMPACT APPRAISAL

The site is outside the zone of influence of all designated sites and, based on this and the small scale of the development, there are no identified mechanisms of impact on designated sites as a result of the



proposed development.

Therefore, in relation to designated sites, the proposed development is considered to pose a 'negligible' impact risk.

4.1 Habitats

The proposed development will impact primarily on areas of low ecological value, with the construction zone largely confined to existing areas of buildings and hardstanding. The proposed development will incorporate an 'ecological buffer zone' along the south-eastern and south-western boundaries of the site. It is likely that some re-landscaping and subsequent management of these areas will be required. It is understood that the raised earth banks will be retained with the existing log piles and rubble piles removed.

Proposed native planting, and the creation of new garden habitats will likely result in an ecological enhancement, considered significant at the site level.

4.2 Badgers

No signs of badger activity were identified during the assessment and no badger setts are situated on or near to the proposed construction zone. No further surveys or mitigation for badgers is advised, however, if any signs of digging by large animals is identified on or near to the site in the future, prior to development or the submission of a planning application, further surveys would likely be required.

4.3 Bats

In accordance with the Bat Conservation Trust guidelines, the overall potential for the buildings within the site to support roosting bats is rated as 'negligible'. Demolition of the existing buildings will have no foreseeable impacts on bats, or their roost sites and no further surveys are recommended. An EPS mitigation licence will not be required for the proposed demolition works to proceed.

As the site may be used by foraging and commuting bats, it is important that the potential for disturbance from artificial lights is considered. The proposed development is likely to require an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 5).

4.4 Birds

The demolition of Buildings A & E will result in the loss of two barn owl roost sites, used on a very infrequent basis, with no foreseeable direct impacts on nesting by the species given that no evidence of nesting was identified. Given the limited frequency of the roosts' use, the loss of these sites will not result in significant impacts beyond the site level.

Without the adoption of sensitive timing to works, the demolition of the aforementioned structures could



result in the destruction of active wood pigeon and the killing/injury of eggs/young. It is recommended that demolition of Buildings A & E is undertaken outside of the breeding bird season (avoiding March – August inclusive), where this is not possible, demolition works will be preceded by a nesting bird check undertaken by a suitably qualified ecologist. Where active nests are identified, works will be delayed until such a time as the young have fledged.

It is understood that the scrubby hedgerow will be retained and protected within the developed site. Should any vegetation require management, this will need to be undertaken outside of the breeding bird season.

4.5 Dormice

With the retention of the scrubby hedgerow, the proposed development is highly unlikely to impact dormice or their habitats, and no further surveys are recommended.

As dormice are nocturnal, it is important that the potential for disturbance from artificial lights is considered, as for bats (see Appendix 5).

4.6 Reptiles

The raised earth banks and associated rubble/log piles are considered to provide suitable habitat for common reptiles. Given the relatively small amount of suitable habitat present within the site, as well as the fact that the majority of this will be retained and protected within the development, no further surveys are recommended and a precautionary approach to avoid killing/injury of reptiles is recommended.

An Ecological Clerk of Works (ECoW) will be present to undertake a fingertip search of suitable habitat and subsequently will supervise the dismantling of rubble/log piles. These features will subsequently be translocated and retained within the ecological buffer zone. Any reptiles encountered will be rescued by the ecologist and moved to suitable habitat outside of the construction zone.

4.7 Riparian Wildlife

Best practice guidance⁷ recommends a minimum of two water vole surveys to confirm presence/likely absence with a reasonable level of certainty. However, the guidance also states “*a second visit may also not be needed where the assessment of effects on water voles can be made on a precautionary basis*”

Whilst it is acknowledged that highly suitable habitat exists within close proximity to the site (reed-lined channel to the east), the combination of the wet ditch's (located to the immediate south-east and east of the site) sub-optimal suitability, lack of evidence of presence in this area and the proposed ecological buffer zone (Figure 6) within the development, it is considered that impacts on water voles (disturbance and damage to burrows) can be avoided should the species be present. A minimum 5m wide buffer zone will be established and maintained within the development, no heavy machinery or ground-



breaking tools (excluding hand tools) will be used within 5m of the toe of the banks.



Figure 6. The extent of the proposed ecological buffer zone (shown in green) and its location relative to the wet ditch (shown in blue).

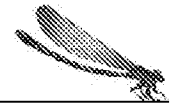
4.8 Invasive Non-native Species

Without the adoption of reasonable avoidance measures, development within the site has the potential to result in the spread of an invasive species (three-cornered garlic), which is listed on Schedule 9 of The Wildlife and Countryside Act, 1981 as amended.

Given the potential risk of pollution/contamination of the wet ditch it is recommended that three-cornered garlic is subjected to mechanical control.

Plants will be removed by digging, this is easiest in spring when surface vegetation is present, ensuring that all plant material and bulbs are removed. This may need to be followed by mechanical cutting over a number of years to exhaust the seed bank. Waste material will be treated as 'controlled' waste and must be disposed of appropriately⁹

⁹ <https://www.invasiveweedsolutions.co.uk/invasive-weeds/non-native/three-cornered-garlic/>



4.9 Other Notable Species

The existing log pile will be dismantled by hand during the spring/ summer (April – September inclusive), thus avoiding disturbance of hibernating hedgehogs. The logs will be translocated and retained within the ecological buffer zone of the developed site.

5 OPPORTUNITIES FOR ENHANCEMENT

5.1 Habitats

The ecological buffer zone, as well as proposed landscape planting, within the proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme should include native tree and shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.

5.2 Bats

The developer is also encouraged to consider including integral bat roosting opportunities into the building fabric such as bat tubes. A total of three Schwegler 1FR bat tubes (or similar alternative design) could be integrated into walls of the southern and eastern elevations of the new building. As best practice, the lighting scheme should be designed to minimize light spill (see Bat Conservation Trust website), around these roosting features and potential commuting routes.

5.3 Birds

Consideration should be given to the installation of a barn owl box within the local surroundings, the box should be installed on a suitably mature tree, with adequate accessibility for owls, and in close proximity to suitable foraging habitat (e.g. floodplain grassland to the east of the site). As well as compensating for the loss of infrequently used roost sites the box would provide an enhancement for the species through provision of a suitable nesting site.

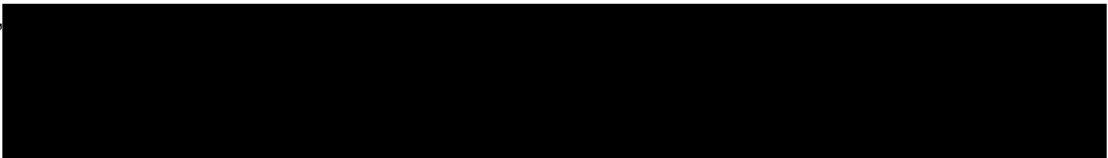
It is also recommended that three swift nest features are incorporated within the new buildings. Integrated boxes (such as the Woodstone Build-in Swift Nest Box B), should be incorporated into the walls at the eaves on the northern and eastern elevations.

6 CONCLUSIONS

The proposed development at Lidsey Lodge Farm will result in the demolition of existing buildings and loss of areas of hardstanding. Removal of the buildings will have no foreseeable impact on bats. Precautionary measures are set out to avoid impacts on nesting birds, reptiles, water voles and hedgehogs. Recommendations are made with regard to enhancement of the site through native planting as well as species-specific enhancements for roosting bats and nesting birds.



It is important that no habitat clearance or other site preparation work should be undertaken until planning permission has been granted and all relevant protections for habitats of importance and protected species have been detailed and implemented. Please be advised that any work to remove or modify habitats outside of typical management may undermine a future planning application.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op, 



APPENDIX 1 – Wildlife Legislation and National Planning Policy

Introduction

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

The ‘Birds Directive’, ‘Habitats Directive’ and ‘Natura 2000 Sites’.

The Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”) sets a framework for the protection of wild birds. Under the directive, several provisions are made including the designation and protection of ‘Special Protection Areas’ (SPAs) – areas which support important bird populations, and the legal protection of rare or vulnerable species.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) directs member states of the EU to take measures to maintain favourable conservation status of important habitats and species. This requires the designation of a series of sites which contain important populations of species listed on Annex II of the directive (for example Bechstein’s bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus* and white-clawed crayfish *Austropotamobius pallipes*). Together with ‘Special Areas of Conservation’ (SPAs), designated under the Birds Directive, SACs form a network across Europe of protected areas known as the ‘Natura 2000 sites’.

Annex IV lists species in need of more strict protection, these are known as “European Protected Species (EPS)”. All bat species, common dormice *Muscardinus avellana*, otter *Lutra lutra* and great crested newts *Triturus cristatus* are examples of EPS that are regularly encountered during development projects.

The ‘Habitats Regulations’

The Conservation of Habitats and Species Regulations 2017 (the “Habitats Regulations”) is the principle means of transposing the Habitats Directive and the Birds Directive, and updates the Conservation (Natural Habitats, &c.) Regulations 1994 (“the 1994 regulations”) in England and Wales.

‘Natura 2000’ sites receive the highest level of protection under this regulation which requires that any activity within the zone of influence of these sites would be subject to a Habitats Regulations Assessment (HRA) by the competent authority (e.g. planning authority), leading to an Appropriate Assessment (AA) in cases where ‘likely significant effects’ on the integrity of the site are identified.

For European Protected Species, Regulation 41 makes it a criminal offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb wild animals of such species;
- deliberately take or destroy their eggs (where relevant);
- damage or destroy a *breeding or resting place* of such an animal;
- possess, control, sell or exchange any live or dead animal or plant, of such species;
- deliberately pick, collect, cut, uproot or destroy a wild plant of such species.

The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for



specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the 'three derogation tests') are met:

- A licence can be granted for the purposes of “preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 53 (2) (e)).
- A licence can be granted if “there are no satisfactory alternatives” to the proposed action.
- A licence shall not be granted unless 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.

Wildlife and Countryside Act (1981) as amended.

This remains one of the most important pieces of wildlife legislation in the UK. There are various schedules to the Act protecting birds (Schedule 1), other animals including insects (Schedule 5), plants (Schedule 8), and control of invasive non-native species (Schedule 9).

Under the Wildlife and Countryside Act (WCA) 1981, all wild birds (with the exception of those listed on Schedule 2), their eggs and nests are protected by law and it is an offence to:

- take, damage or destroy the nest of any wild bird while it is in use or being built.
- take or destroy the egg of any wild bird.
- disturb any bird listed on Schedule 1, while it is nest building, or at a nest with eggs or young, or disturb the dependant young of any such bird.

Schedule 5 lists all non-avian animals receiving protection to a varied degree. At its strongest, the Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturb animals while occupying such places. Examples of species with *full protection* include all EPS, common reptile species, water vole *Arvicola amphibius*, white-clawed crayfish *Austropotamobius pallipes* and Roman snail *Helix pomatia*. Other species are protected from sale, barter or exchange only, such as white letter hairstreak *Satyrrium w-album*.

The Act makes it an offence to intentionally pick, uproot or destroy any plant or seed, and sell or possess any plant listed on Schedule 8. It is also an offence to intentionally uproot any wild plant not listed on Schedule 8 unless authorised [by the land owner]. Species on Schedules 5 and 8 are reviewed every 5 years when species can be added or removed.

Measures for the prevention of spreading non-native species which may be detrimental to native wildlife is included in the Act, which prohibits the release of animals or planting of plants into the wild of species listed on Schedule 9 (for example, Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandifera*, New Zealand Pygmyweed *Crassula helmsii*).

The Wildlife and Countryside Act 1981 (as amended) also prohibits certain inhumane methods of traps and devices for the capture or killing of wild animals and certain additional methods such as fixed trap, poisoning with gas or smoke, or spot-lighting with vehicles for killing species listed on Schedule 6 of the Act (this includes all bat species, badger, otter, polecat, dormice, hedgehog and red squirrel).

Natural Environment and Rural Communities (NERC) Act (2006)

The NERC Act (2006) created the statutory nature conservation body Natural England, and places a



statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 of the NERC Act lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Protection of Badgers Act (1992)

The badger *Meles meles* is afforded specific legal protection in Britain under the Protection of Badgers Act (1992), and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) (see above).

Under this legislation, it is a criminal offence to:

- intentionally kill, injure, take, possess, or cruelly ill-treat, a badger, or to attempt to do so;
- interfere with a sett, by damaging or destroying it;
- to obstruct access to, or any entrance of, a badger sett; or
- to disturb a badger when it is occupying a sett.

A licence may be obtained from Natural England to permit certain prohibited actions for a number of defined reasons including interference of a sett for the purpose of development, provided that a certain number of conditions are met. Note that licenses are not normally granted for works affecting badgers between the end of November and the start of July.

National Planning Policy Framework

The National Planning Policy Framework (NPPF 2019)¹⁰ sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system.

Paragraph 174b, which states that council policies 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.*" The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005)¹¹. In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- minimising impacts on existing biodiversity and habitats;
- providing net gains in biodiversity and habitats, wherever possible;
- establishing coherent ecological networks that are more resilient to current and future pressures.

¹⁰ ¹⁰ HM Government (2019). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2019.pdf.

¹¹ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.



UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), first published in 1994, was the UK's response to the commitments of the Rio Convention on Biological Diversity (1992) until 2010, when the UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government's response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011), and a progress update was provided in July 2013 (Defra 2013).

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade.

Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas and species because the Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their local area or situation.

Birds of Conservation Concern (BoCC)

In 1996, the UK's leading non-governmental bird conservation organisations listed the conservation status of all bird species in the UK against a series of criteria relating to their population size, trends and relative importance to global conservation. The lists, known as the 'Red', 'Amber' and 'Green' lists (in order of decreasing concern) are used to inform key conservation policy and decisions. The lists are reviewed every 5 years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2015 (Eaton et al, 2015), which provides an up to date assessment of the conservation status of birds in the UK.

References

Protection of Badgers Act (1992). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/1992/51/contents>

Circular 06/2005 (2005). Government Circular: Biodiversity and geological conservation – statutory obligations and their impact within the planning system. Office of the Deputy Prime Minister, London. Available at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf

Council Directive 79/409/EEC on the Conservation of Wild Birds ("the Birds Directive"). Available at:
<http://jncc.defra.gov.uk/page-1373>

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the "Habitats Directive"). Available at: <http://jncc.defra.gov.uk/page-1374>

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations"). Available at:
<http://jncc.defra.gov.uk/page-1379>

Countryside and Rights of Way (CROW) Act (2000). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/2000/37/contents>

Defra (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services. Available at:
www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services.

Defra (2013) Progress Update. Available at: www.gov.uk/government/publications/biodiversity-2020-simple-guide-and-progress-update-july-2013.

Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. and Gregory, R. (2015) Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of



Man. Available at: British Birds 108 • December 2015 • 708–746 <https://britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf>

Natural Environment and Rural Communities (NERC) Act (2006). HMSO London. Available at: http://www.legislation.gov.uk/ukpga/2006/16/pdfs/ukpga_20060016_en.pdf

National Planning Policy Framework (NPPF) (2018) Department for Communities and Local Government. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/60777/2116950.pdf

Wildlife and Countryside Act (WCA) (1981). HMSO London. Available at: <http://www.legislation.gov.uk/ukpga/1981/69/contents>



APPENDIX 2 – Adoption Arun Local Plan 2011-2031 (July 2018)

Policy Number/Title	Policy Summary
C SP1- Countryside	Outside the Built-Up Area Boundaries (as identified on the Policies Maps) land will be defined as countryside and will be recognised for its intrinsic character and beauty. Development will be permitted in the countryside where it is: a. for the operational needs of agriculture, horticulture, forestry, the extraction of minerals or the management of waste as part of a waste site allocation within the West Sussex Waste Local Plan; or b. for quiet, informal recreation; or c. for green infrastructure; or d. for the diversification of the rural economy; or e. for road and/or cycle schemes; or f. in accordance with other policies in the Plan which refer to a specific use or type of development. 7 Settlement Structure & Green Infrastructure The Council will take into account cumulative impact of development in the consideration of planning applications. To ensure better management of the rural-urban fringe in those areas where significant new development is proposed, early consideration will need to be given to landscape and biodiversity enhancement, woodland management, recreation provision and access routes.
ENV SP1 - Natural Environment	Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites listed in Tables 17.1-17.7 that are recognised for the species and habitats contained within them.
ENV DM1 - Designated Sites of Biodiversity or Geological Importance	a. Proposed development likely to have an adverse effect on land with the designated features of any Site of Biodiversity or Geological Importance as listed in Tables 17.1 - 17.7 or any subsequently designated sites (either individually or in combination with other developments), will not normally be permitted. Consideration will be given to the exact designated features present on the site, their scarcity/rarity and recognition of the protection offered by their existing status. Development on wildlife sites with the highest value will only be permitted exceptionally where the following can be demonstrated: - There is no alternative solution (which shall be adequately demonstrated by the developer). - There are reasons of public health or public safety or - There are benefits of primary importance to the environment or - There are imperative reasons of overriding public interest. Notwithstanding the above however, the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined. b. In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to; - The European, National or Local status and designation of the site; - The nature and quality of the site's features, including its rarity value;



	iii. The extent of any adverse impacts on the notified features of interest; iv. The need for compensatory measures in order to re-create remaining features of habitats on or off the site. c. Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate.
ENV DM3 - Biodiversity Opportunity Areas	Development shall: a. Retain and sympathetically incorporate locally valued and important habitats, including wildlife corridors and stepping stones b. Be designed in order to minimise disturbance to habitats Development proposals that do not reasonably address opportunities for enhancing these through their design, layout and landscaping or access/management shall not be permitted. Where a development scheme would result in a habitat loss, mitigation measures will be proposed as part of the proposed scheme and such measures agreed with the Local Planning Authority prior to the determination of any planning application. Within Biodiversity Opportunity Areas (BOAs) identified on the Policies Maps or where likely to have an impact on species or habitats within the BOAs, any application for planning permission shall include a properly conducted survey of the presence must be proposed within the planning permission.
ENV DM4 - Protection of Trees	Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development: a. Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837 (2012). Details of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or b. Would enhance the survival and growth prospects of other protected trees; c. The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland. Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme. Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given. Where there are existing trees on or adjacent to a development site, developers shall be required to provide: d. Land and tree surveys e. A tree constraints plan f. An arboricultural impact assessment to include a tree protection plan and arboricultural method statement These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.



ENV DM5 - Development and Biodiversity	Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement. Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person. All developments shall have regard to Natural England's standing advice for protected species.
W SP1 - Water	Arun District Council will encourage water efficiency measures in order to protect the District's water resources and enhance the quality of the water environment which supports a range of habitats and ecosystems. Development will be encouraged to make active use of surface water as a design feature and permitted where it identifies measures to improve and enhance waterbodies, coastal habitats or provides additional flood relief. The Council will also support development that: a) is appropriately located, taking account of flood risk and promotes the incorporation of appropriate mitigation measures into new development, particularly Sustainable Drainage Systems that reduces the creation and flow of surface water and improves water quality; 63 Water stressed areas - final classification (July 2013) b) reduces the risk to homes and places of work from flooding whilst increasing biodiversity; c. delivers a range of community benefits including enhancing the quality of life and providing greater resistance to the impact of climate change.



APPENDIX 3 – Great Crested Newt ‘Habitat Suitability Index’ Values

Table 3. HSI calculation for waterbodies assessed during the survey.

	Wet ditch	
NGR	SU 9459 0257	
SI attribute	SI value	Notes
Location	1	SE England
Pond area	0.25	120m ²
Pond drying	0.5	Sometimes
Water quality	0.67	Moderate
Shade cover	0.6	80%
Waterfowl	0.67	Minor
Fish presence	1	Absent
No. ponds	0.84	6
Terrestrial habitat	1	Good
Macrophytes	0.8	50%
HSI value	0.66	‘Average’ suitability
eDNA result	Negative	



APPENDIX 4 – eDNA Results



Folio No: E9311
 Report No: 1
 Purchase Order: P4214
 Client: THE ECOLOGY CO-OP
 Contact: Owen Crawshaw

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (*TRITURUS CRISTATUS*)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 19/04/2021
 Date Reported: 27/04/2021
 Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
1993	Lidsey Lodge Farm	SU 94584 02570	Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth

Approved by: Chris Troth



Forensic Scientists and Consultant Engineers

Su



APPENDIX 5 – Reducing Impacts of Artificial Light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts on other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness. Guidelines issued by the Bat Conservation Trust¹² should be considered while designing the lighting scheme. A simple process which should be followed where the impact on bats is being considered as part of a proposed lighting scheme. It contains techniques which can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting on key habitats and features altogether

there is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation. However, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- Dark buffers, illuminance limits and zonation
- Sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill
- Consider the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consider the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cat's eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- Screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding
- Glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features.
- Creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development.
- Dimming and part-night lighting. Depending on the pattern of bat activity across the key features

¹² Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; It may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Further reading:

Buglife (2011) *A review of the impact of artificial light on invertebrates*.

Royal Commission on Environmental Pollution (2009) *Artificial light in the environment*. HMSO, London.
Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) *Ecological Consequences of Artificial Night Lighting*. Island Press.
ISBN 9781559631297.

CPRE (2014) *Shedding Light: A survey of local authority approaches to lighting in England*. Available at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) *When is light pollution relevant to planning?* Available at: <https://www.gov.uk/guidance/light-pollution>

Institution of Lighting Professionals (2011) *Guidance Notes for the Reduction of Obtrusive Light* GN01:2011. Available at: <https://www.theilp.org.uk/resources/free-resources/>

End.
