absolute ecology LLP wildlife surveys

Preliminary Ecological Appraisal including Great Crested Newt eDNA Survey

Land at Kiln Lane, Leek Staffordshire

June 2019

Notice to readers

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Non-technical summary

Absolute Ecology LLP were commissioned to undertake a Preliminary Ecological Appraisal of. Land at Kiln Lane, Leek Staffordshire, Grid reference SJ 97206 56856. The Preliminary Ecological Appraisal was undertaken on the 14th June 2019 by an experienced and licensed ecologist who is a member of the Chartered Institute of Ecology & Environmental Management (CIEEM).

The survey area is situated in an urban location, within the town of Leek. The site is immediately bounded by residential properties to the south and east, a minor road/track to the

The application site consisted of grazed semi-improved grassland with no other habitats recorded with the site boundary.

There are two statutory sites located within 2km of the site boundary, and twelve non-statutory sites. All sites are well removed and isolated from the proposed development site by areas of residential housing, roads (minor and major) and watercourses. No adverse impacts, direct or indirect are envisaged as a result of the sites development.

An eDNA sample of the adjacent pond was conducted and tested the results of this has shown a Negative result and it is there for concluded that no impact would occur towards Great Crested Newts.

Taking into consideration the desk study and site survey findings, this report concludes that the proposed development has the potential to produce impacts upon ecological receptors and that these required consideration during the construction phase:

- Nesting birds any of the adjacent hedgerow that maybe effected should take into account the possible of nesting birds if the adjacent hedgerow is disturbed between March & September (Seasons can vary which needs to be taken into account for example a milder weather in February may start nesting earlier) then she should be avoided if not a inspection by a experienced ecologist should be conducted.
- Although no badger activity was observed on the site at the time of the survey, activity patterns of this species can change over a short time. It is recommended that a check for badgers is undertaken immediately prior to works commencing. Badger surveys can be undertaken at any time of year.

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1.0 Introduction

Background

1.1 Absolute Ecology LLP was commissioned to undertake a Preliminary Ecological Assessment of a site known as Land at Kiln Lane, Leek Staffordshire, Grid reference SJ 97206 56856

1.2 The Assessment was undertaken on the 14th June 2019 by Matthew James Haydock an experienced ecologist who is a full member of the Chartered Institute of Ecology & Environmental Management (CIEEM) whom has been involved in many projects including designing and undertaking ecological habitat surveys and site nature conservation evaluations; writing and implementing site management plans; acting in an advisory capacity to provide recommendations for ecological protection, enhancement and mitigation measures; protected species surveys under Natural England licence for survey and development; undertaking ecological impact assessment, appropriate assessment. Matthew has a National Diploma in Ecology and Landscape Studies and holds a higher National Diploma in Environmental Management.

1.3 The scope of this appraisal has been determined in line with the proportional approach to ecological survey, assessment and subsequent recommendations for avoidance and mitigation of impacts, which is encouraged in the emerging 'BS 42020: Biodiversity – Code of practice for planning and development'. This report has been prepared with due consideration for various best-practice guidance and methodologies including those of the Chartered Institute of Ecology and Environmental Management (CIEEM, 2012) and the emerging BS 42020.

1.4 Unless the client indicates to the contrary, information on the species found to be present on the site will be passed to the county biological records centre to update records held for the area.

1.5 The Current plans are for the erection of a dwelling within the improved grassland.

Site Description

1.6 The survey area is situated on the western outskirts of Leek running along Kiln lane. The immediate landscape consists of agricultural land, farms and residential dwellings. The River lies 300 meters to the north. The application site consists of grazed semi-improved grassland with no other habitats recorded with the site boundary.

Figure 1: Shows the proposed dwelling.



2.0 Methodology

Desk Study

2.1 In order to compile background information on the site and immediate surroundings the Staffordshire Ecological Records Centre (SERC) was contacted.

2.2 Information requested was as follows:-

- Records of protected species within the 2 km of the site.
- Records of rare or notable species within the 2 km of the site.
- Non-statutory site designations on or within 2 km of the site.

2.3 Additionally, MAGIC (Multi-Agency Geographic Information for the Countryside, 2010) was used to establish whether any of the following were present:-

- Statutory site designations on or within 2km of the site.
- Statutory sites designated for bats within 5 km of the site.

Habitat Survey

2.4 The site was visited on the 14th June 2019 and was surveyed in accordance with the Joint Nature Conservation Committee (JNCC) Phase I Habitat Survey methodology (JNCC, 2007). This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential that might warrant further study.

2.5 The observable higher plant species in each habitat type within the site, and their abundance, were recorded using the DAFOR scale:

D Dominant

A Abundant

F Frequent

O Occasional

R Rare

Fauna

2.6 Habitats present on the site were searched for obvious signs of faunal activity, *e.g.* presence of badger setts, mammal tracks or herpetofauna under refugia. Any buildings and mature trees on site were visually examined from the ground to identify features with the potential to support roosting bats.

Habitat Suitability Index (Great crested Newt)

2.7 The HSI is a measure of habitat quality using a numerical index between 0 and 1 derived from an assessment of variables known to influence the presence of Great Crested Newts (Oldham et al. 2000). It is used to assess whether a water body warrants detailed surveys to establish presence or absence of newts and aids in the assessment of impacts and the design of mitigation measures. Since January 2008 it has been a requirement to include the results of HSI assessments in European Protected Species (EPS) licence applications.

2.8 To calculate the HSI of the water body ecologists first record the following variables before applying the HSI calculation to these: pond size; surface area; water depth; water quality; % shade, % macrophyte cover; presence of fish and waterfowl; number of water bodies within 1 km of survey water body; quality of terrestrial habitat surrounding ponds; and type of marginal/aquatic vegetation (Oldham et al. 2000).

2.9 Once the HSI score is obtained it can be used to define water body suitability for Great Crested Newts in the following way (National Amphibian Recording Scheme, 2008):

Table 1: HSI Scores

<0.5	Poor
0.5 – 0.59	Below Average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

2.10 Water bodies scoring less than 0.5, those over 500 m away from the intended works or with significant barriers to dispersal between these and the intended works were deemed as not requiring further surveys.

eDNA Protocol

In accordance with the specified methodology, field surveys followed a strict protocol to prevent contamination of the samples; this entailed:

1. Gloves were worn at all times during the sampling process, and gloves were replaced between sample collection from the waterbody and pipetting into the sterile sub-sample tubes.
2. Samples were collected without entering the water, i.e. the surveyor stood only on the waterbody bank or muddy waterbody edges. This prevented disturbance of the substrate to limit cross-contamination. The field sampling protocol consisted of the following steps: 20 samples were taken from single waterbody. The location of sub-samples were spaced as evenly as possible around the waterbody margin. Subsamples generally targeted areas with potential egg laying substrate (e.g. vegetation) and open water areas which newts may be using for displaying. Prior to sampling the water column was mixed by

gently using a ladle to stir through the entire water column, whilst avoiding disturbing the sediment on the bed of the waterbody. Sampling of very shallow water was avoided where possible (less than 5-10 cm deep).

3. Once 20 samples had been taken, the sample bag was closed securely and shaken for 10 seconds. This mixed any DNA across the whole water sample.
4. A new pair of gloves were put on to keep the next stage as uncontaminated as possible.
5. Using a clear plastic pipette c15mL of water was taken from the bag and pipetted into a sterile tube containing 35mL of ethanol to preserve the eDNA sample (i.e. the tube was filled to the 50 mL mark).
6. The tube was shaken vigorously for 10 seconds to mix the sample and preservative. This is essential to prevent DNA degradation and was also repeated for each of the six conical tubes. Before taking each sample, the water in the bag was shaken to homogenise the sample, as DNA material constantly sinks to the bottom.
7. The box of preserved sub-samples was then returned at ambient temperature immediately for analysis by Sure Screen. The samples were then returned to the laboratory (Sure Screen) for the eDNA analysis to be completed.

Valuation of Ecological Features

2.11 The value of areas of habitat and plant communities has been measured against published criteria where available. Biodiversity Action Plans (BAPs) have been searched to identify whether action has been taken to protect all areas of a particular habitat and to identify current factors causing loss and decline of particular habitats. The presence of injurious and legally controlled weeds has also been taken into account.

2.12 When assigning a level of value to a species, its distribution and status (including a consideration of trends based on available historic records) has been taken into account. Other factors influencing the value of a species are: legal protection, rarity and Species Action Plans (SAPs). Guidance, where it is available, for the identification of populations of sufficient size for them to be considered of national or international importance has also been taken into account.

Survey Constraints

2.13 Data Search

Desk study data provides information on recorded species in the area and can be helpful for targeting survey. However, it is possible that protected species that have not been identified within the data search may occur on or adjacent to the site.

2.14 Field survey

Habitats within 30m of the site boundary were inspected as far as access allowed. Ponds up to 500m from the site were viewed where there was public access, or access could be gained.

Fauna species present may not always leave field signs and in addition, species may take up residence on site subsequent to the survey. If no development takes place within 12 months of

this survey report, the findings should be reviewed and may need updating, and a full survey should be repeated within three years

Nomenclature

2.15 The English name only of flora and fauna species is given in the main text of this report; however, scientific names are used for invertebrates where no English name is available. Vascular plants and charophytes follow the nomenclature of The Botanical Society for the British Isles (BSBI) 2007 database (BSBI, 2011) with all other flora and fauna following the Nameserver facility of the National Biodiversity Network Species Dictionary (http://www.nhm.ac.uk/nbn/), which is managed by the Natural History Museum.

3.0 Legislation

3.1 The United Kingdom Biodiversity Action Plan (BAP) 1994 sets out a strategy for implementing the Convention on Biological Diversity, which was signed by the United Kingdom at the Rio de Janeiro Earth Summit in 1992. The published report contains action plans for the United Kingdom's most threatened species and habitat plans for the most vulnerable areas.

3.2 The Local BAP sets out the county's part in the UK biodiversity planning process, in the form of local habitat and species action plans. Local BAPs are intended to focus resources, to conserve and enhance biodiversity, by taking account of national and local priorities.

3.3 Schedule 1 Part 1 of The Wildlife and Countryside Act 1981 (and amendments) – this lists birds protected by special penalties at all times. It prohibits intentional killing/injuring, taking, possessing, disturbing and selling (including parts and derivatives, eggs, nests, *etc.* as applicable) as well as damaging, destroying or disturbing nests in current use or dependent young, *etc.*

3.4 Schedule 5 of The Wildlife and Countryside Act 1981 (and amendments) – this prohibits deliberate killing, injuring, taking, possessing, disturbing and selling (including parts and derivatives) as well as damaging, destroying or obstructing any structure or place of refuge of listed fauna, such as Dormouse, Otter and bat species.

3.5 The Conservation of Habitats and Species Regulations 2010, consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994, in respect of England and Wales. It is illegal to kill, disturb, destroy eggs, breeding sites or resting places, to pick, collect, take cuttings, uproot or destroy in the wild as well as keep, transport, sell/exchange and offer for sale/exchange species listed.

3.6 The Countryside and Rights of Way Act 2000 – this increases protection given by The Wildlife and Countryside Act 1981 (and amendments). The offence to intentionally damage any structure or place that a wild animal listed in Schedule 5 of the Act uses for shelter or protection or deliberately disturbing any such animal while in such a structure or place is extended so that the offence also covers reckless damage or disturbance. The CRoW Act also places a duty on Ministers and Government Departments to have regard for the purpose of conserving biological diversity in accordance with the Convention on Biological Diversity.

3.7 The Protection of Badgers Act 1992 - this Act makes it illegal to wilfully kill, injure or take any Badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy or obstruct access to any part of a Badger sett.

3.8 The Natural Environment and Rural Communities Act, 2006 - as well as creating Natural England, this act gives all public authorities the duty to have regard for conserving biodiversity within the commission of their duties. This includes a duty to restore and enhance as well as maintain biodiversity. The act also strengthens protection for Sites of Special Scientific Interest (SSSI) and makes authorities liable for allowing damage to such sites or their features.

4.0 Results

Desk Study

4.1 There is two statutory designated site within 2 km of the site.

SiteID	Grid Ref.	Site Name	Status
95/64/99	SJ969549	Ladderedge Country Park	Local Nature Reserve
95/87/32	SJ983572	Brough Park Fields	Local Nature Reserve

4.2 There are Twelve Staffordshire Ancient Woodland Inventory 2km of the site

Grid Ref.	Site Name	Status
SJ9837958346	Abbey Wood	Ancient & Semi-Natural Woodland
SJ9822658173	Abbey Wood	Ancient Replanted Woodland
SJ9865358171	Abbey Wood	Ancient Replanted Woodland
SJ9872958328	Abbey Wood	Ancient Replanted Woodland
SJ9897155439	BALLINGTON WOOD	Ancient & Semi-Natural Woodland
SJ9600856021	COWHAY WOOD	Ancient & Semi-Natural Woodland
SJ9601656785	COWHAY WOOD	Ancient & Semi-Natural Woodland
SJ9601056296	COWHAY WOOD	Ancient Replanted Woodland
	COWHAY WOOD	Ancient Replanted Woodland
SJ9630355646	Longsdon Wood	Ancient & Semi-Natural Woodland
SJ9668955134	LONGSDON WOOD2	Ancient & Semi-Natural Woodland
SJ9643256154	WEST WOOD	Ancient & Semi-Natural Woodland

4.3 There are thirteen non-statutory sites within 2 km of the site.

SiteID	Grid Ref.	Site Name	Status	Abstract
95/57/46	SJ954576	Harpers Gate	Local Wildlife Site (SBI)	An area of wet fen meadow with flushes.
95/65/55	SJ965555	Longsdon Wood & Cowhay Wood	Local Wildlife Site	The site consists of a linear strip of secondary broadleaved woodland 2.2km long running from north to south. Maturing oaks are a predominant feature of the wood, with more locally frequent silver birch, rowan, and beech.
95/66/42	SJ964562	West Wood	Local Wildlife Site	A diverse broad-leaved woodland used for clay pigeon shooting and noted on Natural England's Ancient Woodland Inventory with a number of woodland indicator species present in the ground flora such as Bluebell and Wood Anemone.
95/67/17	SJ961577	Foker Grange	Retained BAS	diverse well drained grassland with scattered scrub.
95/85/13	SJ981553	Birchall Meadow	Biodiversity Alert Site	Approximately one hectare of species-rich semi-improved neutral grassland. There is a small area of bare ground situated along the entire eastern border with another small area along the north-east border of the site.
95/85/89	SJ988559	Ladydale Wood Pasture	Local Wildlife Site	A hillside of semi-improved neutral grassland rising towards the north-east, with a scattering of broad-leaved trees. The southern and eastern areas of the site contain marshy grassland, and there are several marshy areas further up the hillside.
95/85/96	SJ989556	Ballington Wood	Local Wildlife Site	Ballington Wood is cited in the woodland inventory as ancient semi-natural woodland. This is relevant to some sections of the wood however, some areas, predominantly the northern section, has been replanted with coniferous and mixed stands.
95/87/32	SJ983572	Brough Park Fields Country Park	Local Wildlife Site	The site covers an area of approximately 8.27 hectares, and comprises mainly of unimproved and semi-improved neutral grassland, with a large area of poor semi-improved grassland located to the east of the site.
95/87/74	SJ987574	Ball Haye Green Disused Tip	Local Wildlife Site	A disused tip supporting a variety of vegetation types including marshy grassland, species-rich semi-improved neutral grassland, species-poor semi-improved neutral grassland, broad-leaved semi-natural woodland and scrub.
95/88/37	SJ983587	Back Hills and Abbey Woods	Local Wildlife Site	Abbey wood with a diverse wetland flora was surveyed in 2005 and Backhills Wood with wet and dry ancient woodland indicator species looked at in 1999. Rank grassland, south-east of Backhills takes up the area between the two woodlands.
95/95/18	SJ991558	Ladydale	Local Wildlife Site	An area of poor semi-improved grassland with a large proportion of semi-improved neutral grassland. The Lady o' th' Dale Well runs through the north and northwestern woodland area, and flows along the entire southern border of the site.
95/97/19	SJ991579	Stare Wood	Local Wildlife Site	An area of deciduous woodland on steep, north-facing slopes. The tree-cover is dominated by silver birch and pedunculate oak.

4.4 SERC (Staffordshire Ecological Records Centre) provided the following records for protected and notable species within 2km of the site boundary:

Bats – Eight species of bat recorded within the search. All bat species are European and UK protected.

Birds – 19 species of bird have been recorded within 2km of the site, 24 species of bird recorded all either European or UK protected and 26 UKBAP species.

Mammal – Five EU and/or UK protected species of mammal and five UKBAP species of mammal. Including Ferret, Water Vole, Otter & Badger.

Amphibian – One EU and UK protected species of amphibian recorded, great crested newt *(Triturus cristatus).*

Reptiles – Two species of reptile recorded within the search area, grass snake *(Natrix Helvetica)*, Slow-worm (Anguis fragilis)

Flowering plants – one UK protected plant species, bluebell *(Hyacinthoides non-scripta).*

Invertebrates – Five UK or European protected invertebrate species have been recorded and 32 UKBAP species recorded within the search area.

Habitats

4.5 The following habitats or vegetation types were identified on the site during the course of the habitat survey.

- Semi-improved grassland

Semi-improved grassland (B)

4.6 The body of the site was comprised of semi-improved grassland which is used for livestock for grazing this was evident in 2015 by sheep and 2019 by horses. The main sward was comprised of Perennial ryegrass (*Lolium perenne*) **Dominant**, creeping thistle (*Cirsium arvense*) **Occasional**, common daisy (*Bellis perennis*) **Occasional**, White Clover *(Trifolium repens)* **Dominant***,* Creeping Buttercup *(Ranunculus repens)* **Frequent***.*



Plate 1: Showing location of proposed location of new dwelling.

Fauna

Bats

4.7 SERC provided several records of several bat species within 2km of the site. There are no buildings. There are no trees on site and none of the trees adjacent would be affected and that they appeared to offer no features suitable for roosting bats such as rot holes, or cracked or split limbs although a small number had a dense covering of Ivy.

4.8 The site provides potential foraging habitat for a range of bat species. The adjacent hedgerow is defunct and gappy.

Badgers

4.9 SERC provided records of Badger within 2km of the site. The majority of the site provides optimal foraging habitat for Badgers in the form of semi-improved grassland. No evidence of Badger activity, such as setts, hairs, dung pits, latrines or snuffle marks, was discovered during the survey.

Dormice

4.10 There are no records of Dormice occurring within 2km of the site. The potential for the site to support Dormice is low. The site provided limited habitat and none of the trees adjacent are to be effected, and it is considered that Dormice are likely to be absent from the site.

Birds

4.11 Records of bird species were provided by SERC. The following were all either observed or heard on site during the survey: Wren, Magpie, Blackbird, Blue Tit, Great Tit, Tree Sparrow, Pied Wagtail with buzzard and sparrow hawk passing through the site..

4.12 The site as a whole provides foraging for a range of bird species. There is no cover for ground nesting birds. The adjacent trees provide nesting opportunities, but these will not be effected by the development.

Reptiles

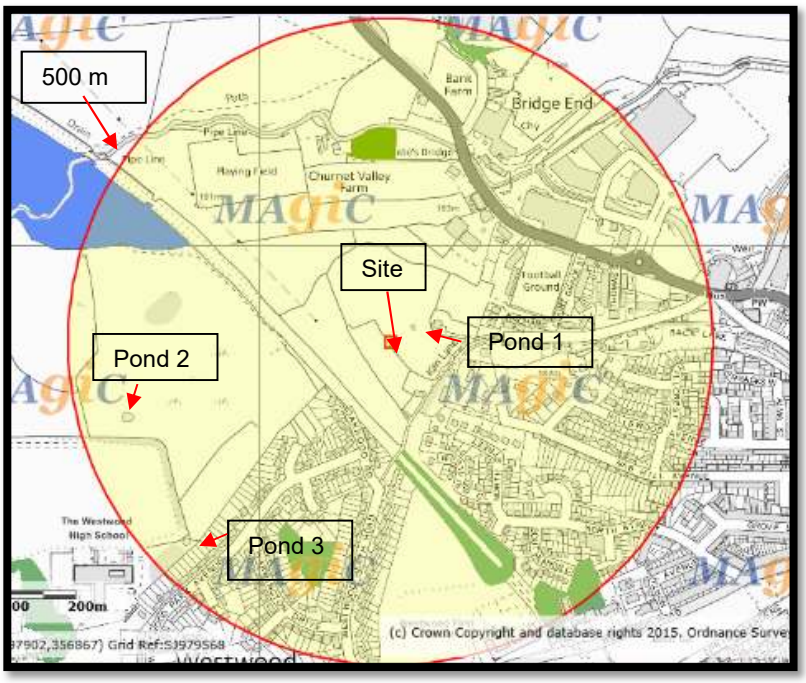
4.13 SERC provided records of Grass snake, Slow worm and Common lizard within 2km of the site. The site is generally unsuitable for reptiles as it lacks extensive areas of scrub and grassland with open basking areas typically associated with reptiles the grassland is highly disturbed by grazing and human activity. There were no potential refugia on site available for inspection or mammal holes such as warrens that reptiles may us for cover. It is considered that no impact would occur to reptiles.

Amphibians

4.14 SERC provided records of Great crested newt within 2km of the site. No standing water was present on site. Three water body's was located within 500m of the site. There is a small

waterbody approximately 35m to the east. The waterbody in 2015 was classified as poor (0.47 respectively) via the Habitat Suitability Index though given that 4 years since the last visit the waterbody has changed with water being abundant and with noticeable invertabrate in habiting the pond the HSI on this occasion was calculated at 0.63 and classed as average score please see below table. Subsequently an eDNA test was completed on this Pond and the results have shown a Negative result which indicates Great Crested Newts are not Present within the pond, please see below figure 1. Two other ponds are present within 500m of the site on OS maps both 490 meters to the west access was unattainable at the time of the survey, but it is considered that grazing pasture and the Site are considered to be poor quality connecting terrestrial habitat it is therefore considered to be unlikely that any populations of GCN which may reside in these ponds would range as far as the potential developments site. It is also considered given the size of the potential development and that site provides no habitat for species of amphibians in the terrestrial phase of their life cycle, the lack of suitable water bodies in the immediate surrounding area means the site is unlikely to be important for amphibians.

Figure 1: Ponds within 500 meters of the proposed development



Habitat Suitability Index Table showing average score

Pond ref	Pond 1
SI1 - Location	1
SI2 - Pond area	0.7
SI3 - Pond drying	0.5
SI4 - Water quality	0.8
SI4 - Shade	1
SI6 - Fowl	0.67
SI7 - Fish	1
SI8 - Ponds	0.5
SI9 - Terr'l habitat	0.5
SI10 - Macrophytes	0.2
HSI	0.63

Pond 1 adjacent to proposed development 2015



Pond 1 adjacent to proposed development 2019



Figure 1: Showing eDNA test result

SureScreen Scientifics

Folio No: E5558
Report No: 1
Order No: P1KL
Client: ABSOLUTE ECOLOGY
Contact: Helen Staton
Contact Details: helen@absoluteecology.co.uk, helen@absoluteecology.co.uk
Date: 26/06/2019

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS

Date sample received at Laboratory: 18/06/2019
Date Reported: 26/06/2019
Matters Affecting Results: None

RESULTS

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
1276	Kiln Lane Leek	-	Pass	Pass	Pass	Negative	0

SUMMARY

When Great Crested Newts (GCN); Triturus cristatus inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water, we can analyse these small environmental DNA (eDNA) traces to confirm GCN habitation, or establish GCN absence.

The water samples detailed below were submitted for eDNA analysis to the protocol stated in DEFRA WC1067 (Latest Amendments). Details on the sample submission form were used as the unique sample identity.

RESULTS INTERPRETATION

Lab Sample No.- When a kit is made it is given a unique sample number. When the pond samples have been taken and the kit has been received back in to the laboratory, this sample number is tracked throughout the laboratory.

Invertebrates

4.15 SERC provided records of a number of invertebrate species (mainly moths and butterflies) within 2km of site. None of the species mentioned are particularly associated with the flora or habitats found on site. The habitats on site are generally common and do not provide much potential for rare invertebrate species, although they are expected to support a number of more common species.

5.0 Development Constraints and Recommendations

5.1 The site is the subject of a possible planning application for an agricultural shed. Ecological constraints and recommendations with regard to any development are discussed below.

Designated Sites

5.2 There is two statutory designated site within 2 km of the site.

5.3 There are twelve non-statutory sites within 2 km of the site.

It is considered given the size of the development and the distance from non-statutory sites and Staffordshire Ancient Woodland that the proposed development would not have any impact on the sites identified above.

Habitats

5.4 Botanically, the site itself does not appear to have any rare species and it is not particularly diverse.

Potential Impacts of Works

5.5 If the commercial development is undertaken in the future, then potential impacts are likely to include the following:

5.5.1 Although no badger setts were observed on site, badger activity can change over a short time. If any setts are created on site prior to works, tunnels could be affected by ground works and vegetation removal and badgers could be harmed.

5.5.2 If the adjacent trees are removed or disturbed this may affect birds that use the site for breeding and foraging by causing a decrease in nesting sites and food resources. Loss of these habitats may directly harm nesting birds if carried out during the breeding season (March to August inclusive).

Recommendations

5.6 The following are general recommendations that are likely to be a minimum requirement for any future development of the site.

Bats

5.7 The habitats for foraging bats are limited within the site, and loss of grassland is unlikely to significantly impact local bat populations, particularly as the proposed shed shows limiting land in take. It is not considered that the trees adjacent would be impacted on but, If the adjacent trees are going to have increase in light spill, there may be significant impacts on commuting routes, particularly if there are roosts in existing buildings nearby. It is therefore recommended that any lighting design around the new development should be considered at an early stage. Light spill can affect the foraging and commuting strategy of many species and should be avoided onto nearby trees and hedges/shrubs, and should not exceed 200 lumens (150 watts). Any security lighting should be on a timer setting and faced down to prevent spillage onto nearby habitats. The height of any lighting columns around the development should not exceed eight metres to reduce further any ecological impact of light pollution. Low-pressure sodium lamps (SOX) fitted with hoods are recommended to direct light below the horizontal plane to minimize upward light spill.

Badgers

5.8 Although no badger activity was observed on the site at the time of the survey, activity patterns of this species can change over a short time. It is recommended that a check for badgers is undertaken immediately prior to works commencing. Badger surveys can be undertaken at any time of year.

Birds

5.9 Where possible, habitats suitable for nesting and foraging birds should be retained, enhanced or created within any new development. The hedgerow and woodland habitats within the site are likely to be the most valuable to nesting birds and should be retained as far as possible.

5.10 Nesting birds may be present in the trees, during the bird breeding season (March to August inclusive). If vegetation removal is planned during these months, a prior check for nesting birds should be undertaken by an ecologist. Any active nests that are found must not be moved until fledglings have dispersed.

5.11 It would be of conservation benefit to install a variety of nesting boxes for different bird species within the site in future (buildings and trees where suitable) to enhance the site for nesting birds and encourage bird diversity. Information on bird nesting boxes can be found at http://www.rspb.org.uk/advice/helpingbirds/nestboxes/. Enhancing existing hedgerows or planting new hedgerows and shrubs within any new development can benefit birds if a wide range of native species are used.

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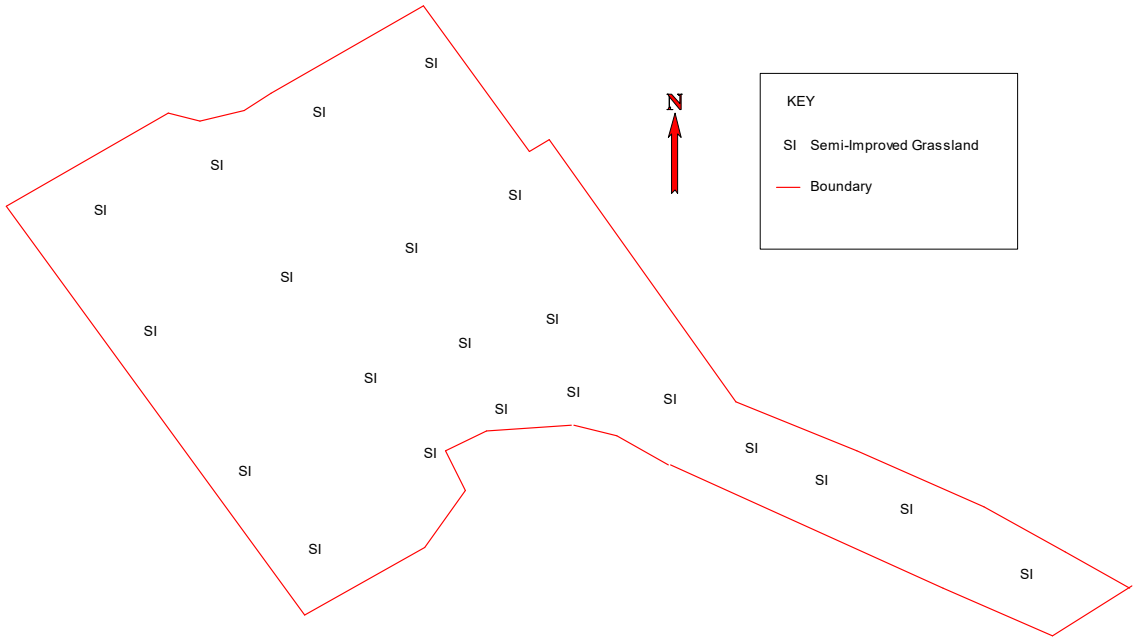
7.0 Plans

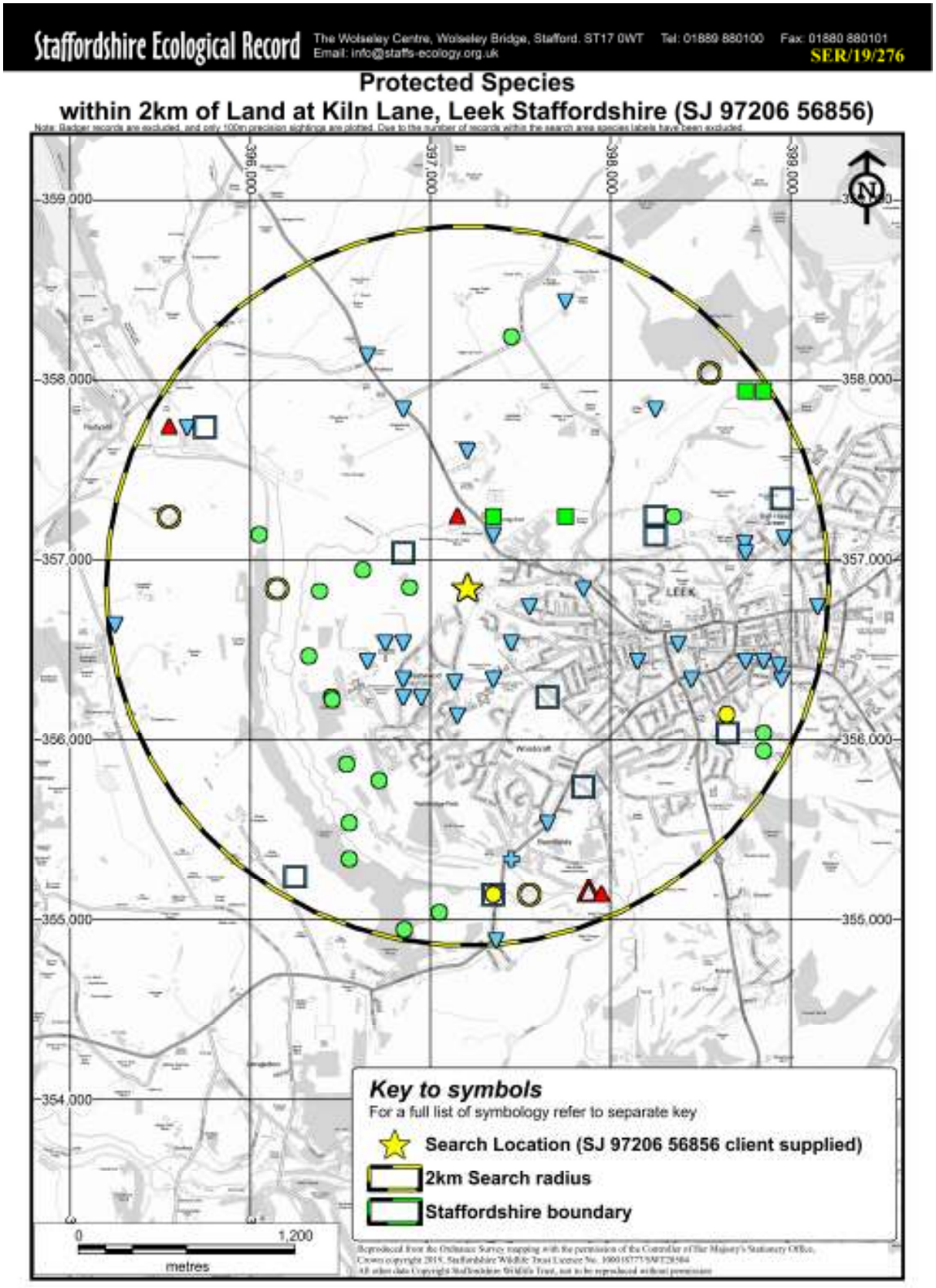
Phase I Habitat Map



Plan layout showing location of the proposed development.



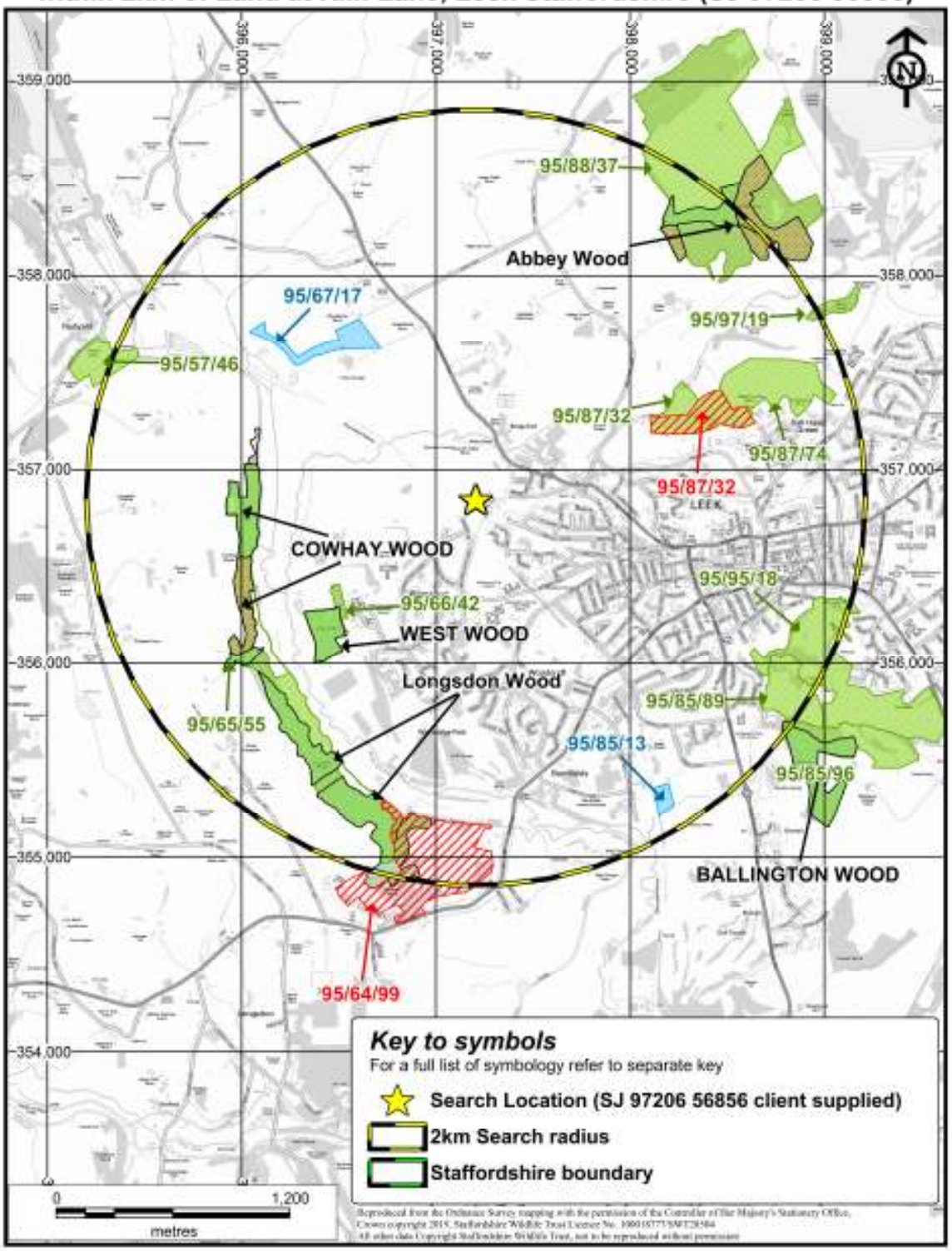
8.0 Pre-survey desk study results



Staffordshire Ecological Record The Wolseley Centre, Wolseley Bridge, Stafford. ST17 0WT Tel: 01889 880100 Fax: 01880 880101
Email: info@staffs-ecology.org.uk

SER/19/276

Nature Conservation Sites within 2km of Land at Kiln Lane, Leek Staffordshire (SJ 97206 56856)



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A legend to the map showing Nature Conservation Sites and Species

Introduction

These colours are used on the site alert mapping within the SWT GIS, but SER cannot guarantee the same colours are used in any other mapping system, particularly those based on ArcView.

Statutory Designations from Natural England's web-site

- National Nature Reserves — NNR (boundary not available owing to OS restrictions)
- Sites of Special Scientific Interest — SSSI (boundary not available owing to OS restrictions)
- Local Nature Reserves — LNR (boundary not available owing to OS restrictions)

Non-statutory Designations from the Staffordshire Grading System (1995 onwards)

- Site of Biological Importance (ex Grade 1 SBI) equivalent to "Local Wildlife Site"
- Biodiversity Alert Site (ex Grade 2 SBI)
- Proposed/potential Site of Biological Importance

Geological Sites

- Regionally Important Geological/geomorphological Site (= Local Geological Site)

Staffordshire Wildlife Trust Sites

- SWT Nature Reserves

Other Nature Reserves

- Royal Society for the Protection of Birds

Ancient Woodland Inventory

- Ancient & Semi-natural Woodland
- Ancient Replanted Woodland

Species Information

- Mammals excluding those listed below
- Otter (Lutra lutra)
- Badger (Meles meles) - not normally supplied
- Water Vole (Arvicola terrestris)
- All bat species
- All bird species
- Any other protected species (precise to 100m)
- All Protected Species Records (precise to 1km)
- Amphibians and reptiles excluding those below
- Great Crested Newt (Triturus cristatus)
- Native Crayfish (Austropotamobius pallipes)
- Flowering plants except those below
- Bluebell (Hyacinthoides non-scripta)
- Butterflies and Moths
- BAP Species Records (precise to 100m)
- BAP Species Records (precise to 1km)

Notes:

The Local Nature Reserve and other nature reserve boundaries can overlay the current grading when both layers are actively visible

Where there are multiple species records for the same grid reference the dot for one species may obscure the dots for other species - all species records will be displayed in the accompanying spreadsheet

Not all the above categories may be present on the accompanying map

Version 2.0 July 2011

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