absolute ecology LLP wildlife surveys

Preliminary Ecological Appraisal including Great Crested Newt Scoping Survey

Land at Kiln Lane, Leek Staffordshire

October 2015

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 26th October 2015 by an experienced and licensed ecologist who is a member of the Chartered Institute of Ecology & Environmental Management (CIEEM).

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:

- Lighting
- Nesting Birds

It is considered that these factors can be fully mitigated for within the scope of the existing development proposals. Therefore no further evaluation is necessary in order to achieve planning determination. Full details and suggested mitigation can be found within the 'Development Constraints and Recommendations' section of this report.

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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 26th October 2015 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 an agricultural shed/warehouse on this site measuring 18.2 by 12.1 there will also be no access track created causing land intake.

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. A majority of the surrounding area is used for agriculture and sheep grazing with extensive amounts of interconnecting hedgerows and trees along field boundaries.



Figure 1: Shows red rectangle indicating proposed agricultural shed.

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 26th October 2015 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.

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 no statutory designated site within 2 km of the site.

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

- Abbey Wood Ancient Replanted Woodland
- Abbey Wood Ancient Replanted Woodland
- Abbey Wood Ancient & Semi-Natural Woodland
- Abbey Wood Ancient Replanted Woodland
- BALLINGTON WOOD Ancient & Semi-Natural Woodland
- COWHAY WOOD Ancient & Semi-Natural Woodland
- COWHAY WOOD Ancient & Semi-Natural Woodland
- COWHAY WOOD Ancient Replanted Woodland
- COWHAY WOOD Ancient Replanted Woodland
- Longsdon Wood Ancient & Semi-Natural Woodland
- LONGSDON WOOD2 Ancient & Semi-Natural Woodland
- WEST WOOD Ancient & Semi-Natural Woodland

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

- Ladderedge Country Park Local Nature Reserve
- Brough Park Fields Local Nature Reserve
- Harpers Gate Local Wildlife Site (SBI)
- Longsdon Wood & Cowhay Wood Local Wildlife Site
- Foker Grange Retained BAS
- Birchall Meadow Biodiversity Alert Site
- Ladydale Wood Pasture Local Wildlife Site
- Ballington Wood Local Wildlife Site
- Brough Park Fields Country Park Local Wildlife Site
- Ball Haye Green Disused Tip Local Wildlife Site
- Back Hills and Abbey Woods Local Wildlife Site
- Ladydale Local Wildlife Site
- Stare Wood Local Wildlife Site

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

Triturus	cristatus Great Crested Newt	amphibian
Accipiter gentilis	Northern Goshawk	bird
Alcedo atthis	Common Kingfisher	bird
Anas acuta	Northern Pintail	bird
Botaurus stellaris	Great Bittern	bird
Bucephala clangula	Common Goldeneye	bird
Charadrius dubius	Little Plover	bird
Crex crex	Corn Crake	bird
Falco columbarius	Merlin	bird
Falco peregrinus	Peregrine Falcon	bird
Falco subbuteo	Eurasian Hobby	bird
Fringilla montifringilla	Brambling	bird
Limosa limosa	Black-tailed Godwit	bird
Milvus milvus	Red Kite	bird

Pandion haliaetus	Osprey	bird
Turdus iliacus	Redwing	bird
Turdus pilaris	Fieldfare	bird
Tyto alba	Barn Owl	bird
Austropotamobius pallipes	Freshwater White-clawed Crayfish	crustacean
Hyacinthoides non-scripta	Bluebell	flowering plant
Arvicola amphibius	European Water Vole	mammal
Lutra lutra	European Otter	mammal
Meles meles	Eurasian Badger	mammal
Mustela putorius	Polecat	mammal
Myotis	Myotis Bat species	mammal - bat
Myotis daubentonii	Daubenton's Bat	mammal - bat
Myotis mystacinus	Whiskered Bat	mammal - bat
Myotis nattereri	Natterer's Bat	mammal - bat
Nyctalus noctula	Noctule Bat	mammal - bat
Pipistrellus pygmaeus	Soprano Pipistrelle	mammal - bat
Plecotus auritus	Brown Long-eared Bat	mammal - bat
Anguis fragilis	Slow-worm	reptile
Natrix natrix	Grass Snake	reptile
Zootoca vivipara	Common Lizard	reptile

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

4.6 The body of the site was comprised of semi-improved grassland which is used for livestock grazing. The main sward was comprised of Perennial ryegrass (*Lolium perenne*), creeping thistle (*Cirsium arvense*), common daisy (*Bellis perennis*), White Clover (Trifolium repens).



Individual Trees

4.7 Immediately adjacent on the western boundary were individual semi mature trees. These included Hawthorne *(Crataegus monogyna)*.

Fauna

Bats

4.8 SERC provided several records of several bat species within 2km of the site. There are no buildings on site. There are no trees on site and none of the trees adjacent would be effected 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.

4.9 The site provides good foraging habitat for a range of bat species. The adjacent tree line are likely to be used by foraging bats as well as for navigational flight lines.

Badgers

4.10 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

4.11 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

4.12 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 and Woodpigeon.

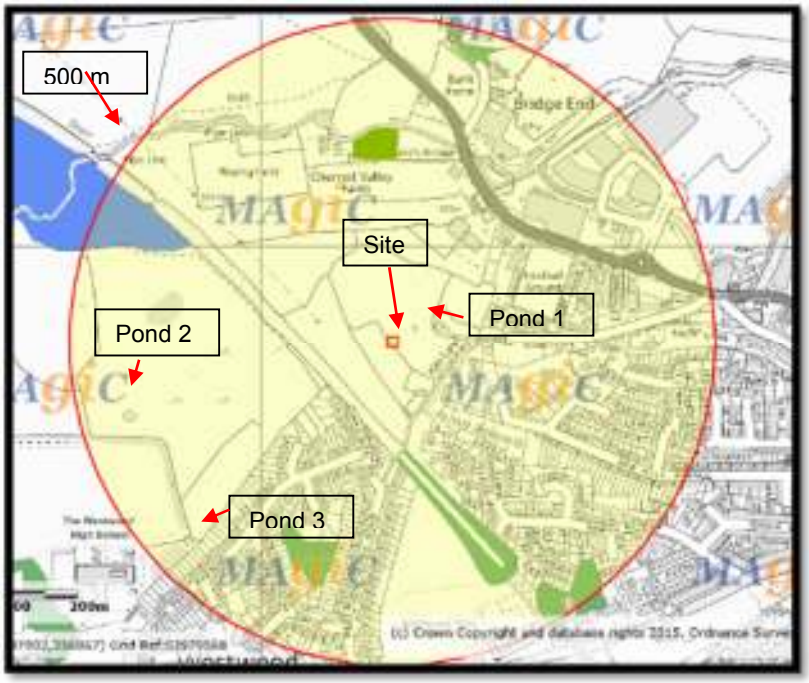
4.13 The site as a whole provides foraging for a range of bird species. There is no cover for ground nesting birds. The adjacent trees provide nesting opportunities but these will not be effected by the development.

Reptiles

4.14 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. There were no potential refugia on site available for inspection. It is considered that no impact would occur to reptiles.

Amphibians

4.15 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. The small waterbody approximately 35m to the east. The waterbody were classified as poor (0.47 respectively) via the Habitat Suitability Index. 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 railway line which lie between these ponds 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.



Pond Locations within 500 meters



Pond 1 adjacent to proposed agricultural shed.

Invertebrates

4.16 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 no statutory designated site within 2 km of the site.

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

- Abbey Wood Ancient Replanted Woodland
- Abbey Wood Ancient Replanted Woodland
- Abbey Wood Ancient & Semi-Natural Woodland
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5.4 There are thirteen non-statutory sites within 2 km of the site.

- Ladderedge Country Park Local Nature Reserve
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- Ball Haye Green Disused Tip Local Wildlife Site
- Back Hills and Abbey Woods Local Wildlife Site
- Ladydale Local Wildlife Site
- Stare Wood Local Wildlife Site

The River Churnet lies approximately 300 m north of the development site separated by the agricultural fields and given the size of the proposed agricultural building it is considered that the impact on the Churnet River would be negligible.

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

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

Potential Impacts of Works

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

5.6.1 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.

5.6.2 If the adjacent trees are removed 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

5.7 The following are general recommendations that are likely to be a minimum requirement for any future development of the site. To prevent potential delays, it would be prudent to undertake the recommended surveys well in advance of any master-planning and certainly before any planning application is made.

Bats

5.8 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

5.9 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

5.10 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.

5.11 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.

5.12 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.

6.0 References

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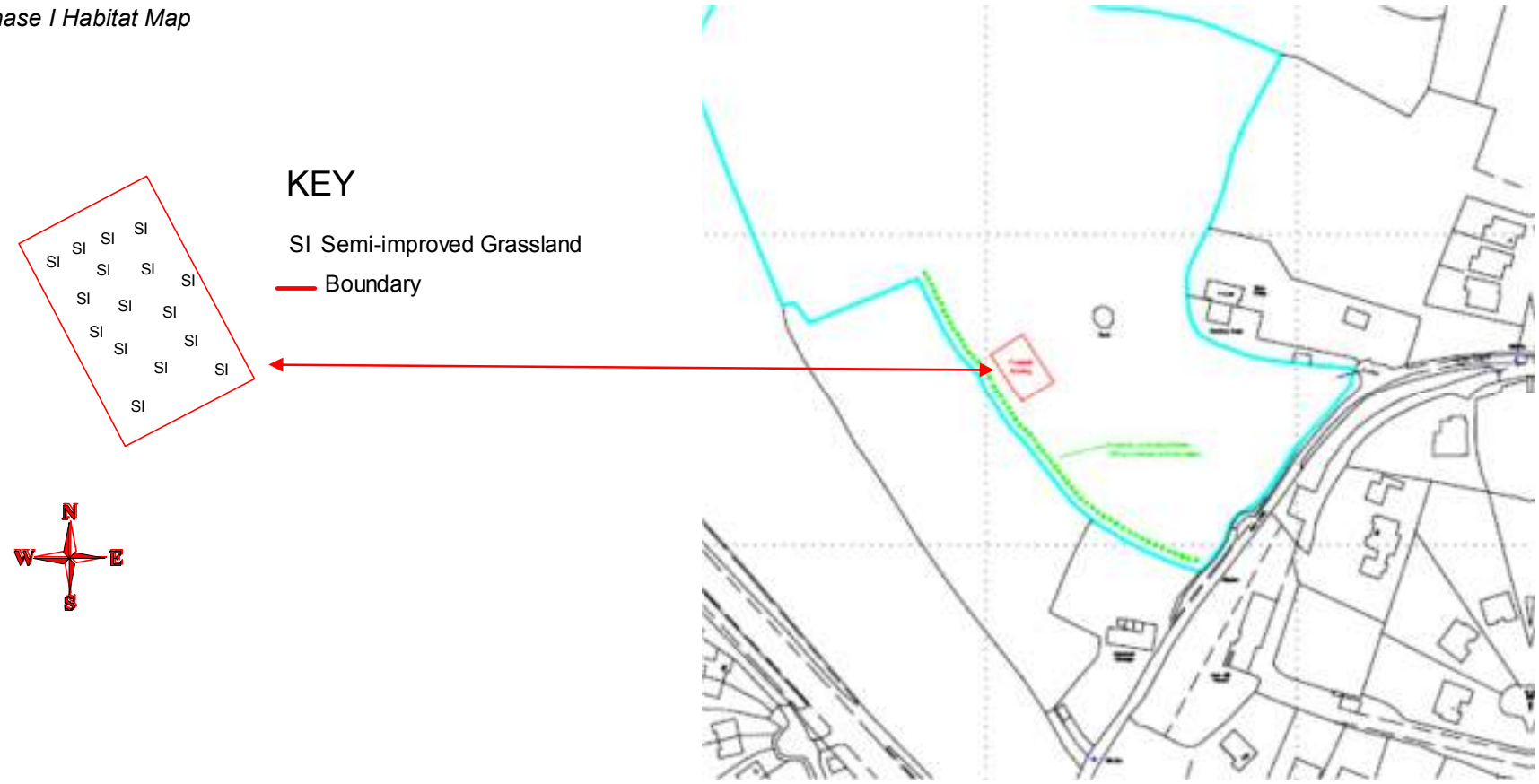
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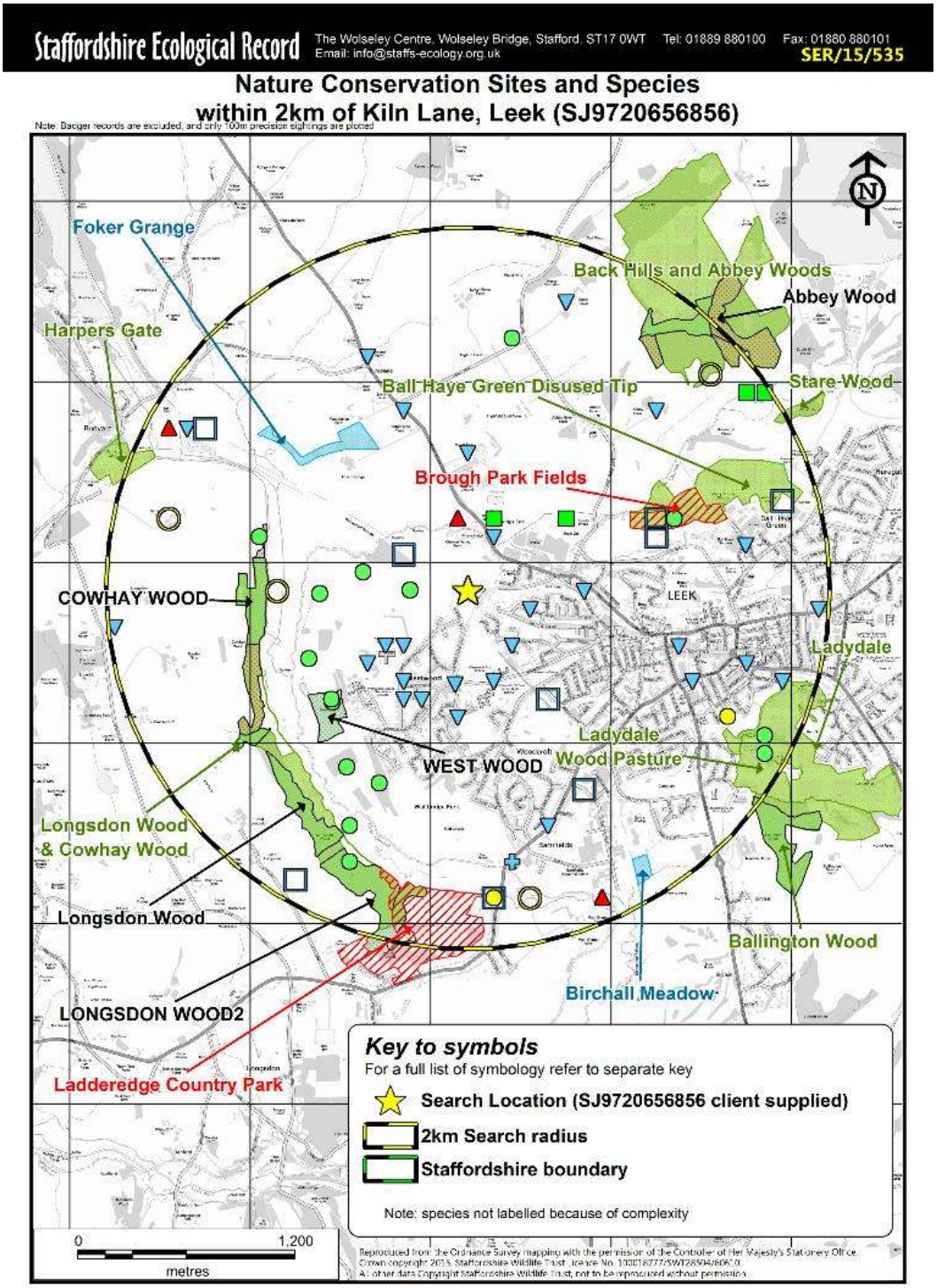
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7.0 Plans

Phase I Habitat Map



8.0 Pre-survey desk study results



Appendix I – Habitat Suitability Index

Pond 1

Pond ref	Pond 1
SI1 - Location	1
SI2 - Pond area	0.2
SI3 - Pond drying	0.1
SI4 - Water quality	0.67
SI4 - Shade	1
SI6 - Fowl	1
SI7 - Fish	1
SI8 - Ponds	0.3
SI9 - Terr'l habitat	0.33
SI10 - Macrophytes	0.4
HSI	0.47

Categorisation of HSI scores

Lee Brady has developed a system for using HSI scores to define pond suitability for great crested newts on a categorical scale: HSI Pond suitability

<0.5 = poor
0.5 – 0.59 = below average
0.6 – 0.69 = average
0.7 – 0.79 = good
> 0.8 = excellent