

Greenscape Environmental Ltd

MARSHALL

ECOLOGICAL APPRAISAL

**CONERY LANE FARM
CONERY LANE
BRONINGTON
WHITCHURCH
SY13 3EZ**

JULY 2019

2233 1907R

Report by Ben Jones BSc (hons) MSc

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The report should be read in its entirety.

Questions arising from the survey report should be directed to the author of this report who will be pleased to clarify any technical issues raised.

Whilst the surveyors make every reasonable effort, Greenscape Environmental Ltd cannot guarantee that all protected species have been identified and survey results are definitive. Many species are cryptic and transitional in habit.

Reports are considered valid for one year for planning purposes after which time further survey information may be required.

Greenscape Environmental Ltd can provide advice and support for recommendations and planning conditions.

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1 Summary

1.1 Purpose of the Report

Greenscape Environmental Ltd was commissioned by Simon Marshall to undertake an Ecological Appraisal of land at Conery Lane Farm to provide supporting information for a planning application for the creation of a manège.

The survey report has three principal aims:

- to provide an initial appraisal of the ecological value of the site in local context
- to provide details supporting further surveys that may be required
- to identify potential ecological constraints relating to the development and recommend measures to avoid, reduce or manage negative effects and to provide a net ecological gain

1.2 Methodology

The appraisal of the site included a desk study of the area and a phase 1 environmental appraisal undertaken at the site, OS grid reference SJ49893953 on 2nd July 2019 by B Jones.

1.3 Key Issues

Four designated sites were found within the vicinity of the site. Given the scale of the development no negative impact is expected.

Records of protected species within 2km include water vole, otter, buzzard, merlin, and rhododendron. Of particular concern for this site was great crested newts.

The site extends to 0.05ha and comprises a well-grazed horse paddock of low ecological value. The proposed manège area does not include any existing hedgerows.

Ponds within 250m have been taken into consideration. Where possible the ponds were assessed for their potential to support great crested newts and are considered low value. Due to the close proximity to site, however, a precautionary method statement for newts will be followed.

1.4 Impacts and Mitigation Measures

It is considered the development can proceed without the loss of habitat of significant value and without the loss of favourable conservation status of any protected species. As there is no evidence of protected species within and around the development site, there is no requirement to address the three tests under Regulation 55 of the Conservation of Habitats and Species Regulations (2017).

The precautionary method statement for great crested newts will be followed to ensure no negative impact on the species.

There are no other ecological constraints to the development as currently proposed.

2 Introduction

This report has been compiled by Ben Jones BSc (hons) MSc who has 4 years' experience conducting ecological appraisals. It has been reviewed in line with Greenscape's Quality Management System.

For details of surveyors and licences please see Appendix A.

2.1 Project Background

Greenscape Environmental Ltd was commissioned by Simon Marshall to conduct a survey to determine the presence of protected species and potential for the damage or destruction of habitats of ecological value, as part of the planning application for the development of land at Conery Lane Farm, Bronington.

The project involves the creation of a manége.

2.2 Purpose of the Report

The aim of this survey is to locate and describe, as far as reasonably practicable, evidence of wildlife, including all protected and Biodiversity Action Plan (BAP) priority species, which may be disturbed or lost in the event of development.

The purpose of the report is to:

1. Identify the key ecological constraints to the proposed development
2. Inform planning to allow significant ecological effects to be minimised or avoided wherever possible
3. Allow any necessary mitigation or compensation measures to be developed following the Mitigation Hierarchy
4. Identify any additional surveys that may be required to inform the ecological assessment
5. Identify the opportunities offered by a project to deliver ecological enhancement

2.3 Planning Policy and Legislation

This section provides a brief summary of the key national and local planning policies and legislation with an intention to identify those to be of most relevance to ecology and provide context to the surveys conducted. Survey findings were considered in line with the following.

The Conservation of Habitats and Species Regulations (2017) – as listed in:

- Schedule 2. European protected species of animals
- Schedule 5. European protected species of plants

The Wildlife and Countryside Act (1981) – as listed in:

- Schedule 1. Birds protected by special penalties at all times
- Schedule 5. Protected animals
- Schedule 8. Protected plants

Countryside and Rights of Way Act (2000)

The Protection of Badgers Act 1992

Natural Environment and Rural Communities Act 2006 (NERC 2006)

Section 7 of the Environment Act (Wales) 2016

ODPM Circular 06/2005: Biodiversity and Geological Conservation-Statutory obligations and their impact within the Planning System

Wrexham Unitary Development Plan – EC6 Biodiversity Conservation

2.4 Site Context and Location

The site is located to the east of Bronington, OS grid reference SJ49893953. It is set in a rural environment surrounded by open fields and the rest of Conery Lane Farm. There is low connectivity to the surrounding countryside via hedgerows which may provide foraging or commuting opportunities for bats, birds or great crested newts.

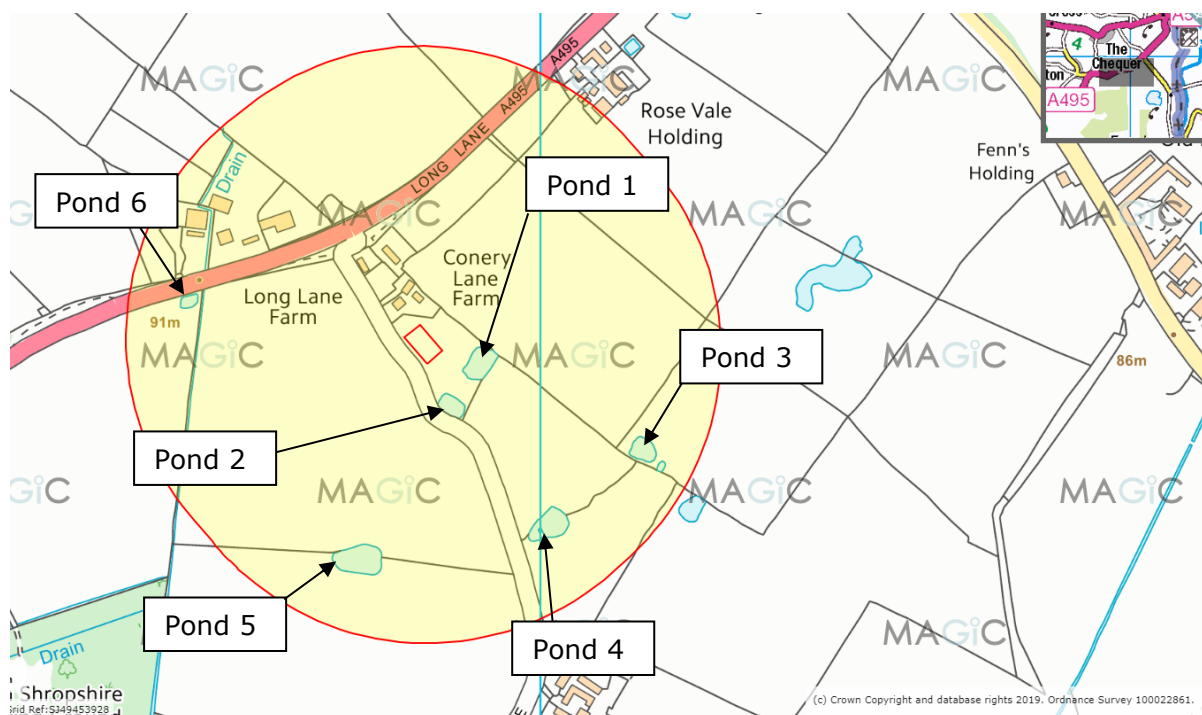


Figure 2.1. An OS map showing the site (centre, highlighted) with a 250m buffer

Scrutiny of the OS map (Fig 2.1) and a walk around the locality showed there are 6 ponds within 250m of the site.

2.4.1 Date and Survey Conditions

The phase 1 ecological appraisal was undertaken at the site on 2nd July 2019 by B Jones. The conditions on the survey dates were optimal for the type of survey conducted.

Table 2.1: Survey date and conditions

Date	Time	Temp °C	Condition
02/07/19	5:45	13	Clearing sky, dewy underfoot, no wind

3 Methodology

Broad methodologies for data collection and interpretation were informed by guidance outlined in CIEEM (2017) Guidelines for Preliminary Ecological Appraisal.

3.1 Desk Study

The desk study provides contextual information such as the site's proximity to designated areas and known records of protected/notable species. This assists with the evaluation of the ecological value of the site. This was undertaken in July 2019.

This level of desk study is considered adequately proportionate to the development proposals, the low complexity of the site and its surrounding landscape context.

3.2 Field Survey

3.2.1 Habitats

The level of survey is aimed to identify field signs of, or habitats with the potential to support protected species and therefore assist in the determination for detailed phase 2 surveys.

3.3 Species Survey

Badgers surveys were conducted using guidance from Scottish Natural Heritage commissioned Report No. 096 (2003).

The assessment of aquatic habitat for great crested newts is based on the Habitat Suitability Index (HSI).

The terrestrial habitats at the application site were surveyed and assessed regarding their suitability and potential value in supporting great crested newts.

3.4 Constraints of the Survey

All developable areas were accessible for this survey, though two of the nearby ponds were on land not owned by the client and access was not gained. It was conducted at an optimal time of the year for the assessment of flora and fauna. Standard techniques were followed, as outlined in Appendix B.

4 Site Description

4.1 Field Survey-Phase 1 Description and Observations

A map showing phase 1 habitat codes is not considered necessary for this site due to its lack of complexity and size.

The site comprises a well-grazed pasture field. Species found in the development area include common grasses such as rye grass (*Lolium perenne*), smaller cat's tail (*Phleum bertolonii*), rough meadowgrass (*Poa trivialis*) and Yorkshire fog (*Holcus lanatus*). Other species in the grassland include broad-leaved dock (*Rumex obtusifolius*), meadow buttercup (*Ranunculus acris*) and common sorrel (*Rumex acetosa*). The sward is kept short (<10cm) by continual horse grazing.



Figure 4.1. Pasture to be developed

The development area has no formal boundary and is contained entirely within the field. The roadside boundary to the west of site will be close to the manège boundary however and consists of an intact hedgerow dominated by blackthorn (*Prunus spinosa*) and interspersed with elder (*Sambucus nigra*), hazel (*Corylus avellana*) and hawthorn (*Crataegus monogyna*).



Figure 4.2. Nearby hedge

No evidence of badgers was found on the site or within 30m of the boundaries.

4.1.1 Surrounds

The pasture is bounded to the west by a small tarmac lane leading to further dwellings and farms to the south. This will remain unaffected by the development.



Figure 4.3. Neighbouring track

To the south of the development area is a series of more pastures with a small walkway along the side. These will also remain unaffected and will continue to support horses as at present.



Figure 4.4. Neighbouring pasture

To the north of the development area is the access track into the field. This is a crushed stone track of no value to amphibians. It will remain the same and continue to be used as at present.



Figure 4.5. Access track

4.1.2 Open Water

Ponds within 250m have been taken into consideration. Where possible, each of these ponds was assessed using the Habitat Suitability Index (HSI). The results from the HSI calculations and justifications for each value can be seen in Appendix E.

Ponds 5 and 6 were on land not owned by the client and access was not possible.

All accessible ponds were checked for evidence of breeding newts such as eggs, and none were found. No efts or newts were caught while netting the ponds.

Table 4.1: Ponds within 250m

Pond Number	OS Grid Reference	Distance from Site	HSI Score
1.	SJ49943952	15m	0.63
2.	SJ49913948	20m	0.52
3.	SJ50093944	180m	0.63
4.	SJ50003937	155m	0.56
5.	SJ49833934	175m	No Access
6.	SJ49683957	205m	No Access

5 Evaluation of Results

5.1 Potential Impacts on Designated Sites and Recorded Species

5.1.1 Designated Areas

Figure C.1 shows that the nearest SSSI is approximately 700m away. This is Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses and is part of a series of open water and peatlands. No potential impacts on this are expected from the small scale and low impact of a manège development.

5.2 Habitats on Site

Table 5.1: Summary of habitats on site

Habitat type	Is the habitat capable of supporting protected species	Impact without consideration
Grassland	Well-grazed, no value to protected species	No negative impact

The entire site falls within a well-grazed pasture. There are no tussocks or habitat piles that might provide shelter for small animals. The site is of low to negligible value for protected species.

5.3 Ecologically Important Species

Table 5.2: Summary of protected species on site with recommendations

Species	Observations	Impact without consideration	Recommendations
Mammals			
Badgers	No evidence found around site	No negative impact	No action required
Herpetofauna			
Great Crested Newts	7 ponds within 250m. Nearest pond within 30m.	No negative impact	Work to follow strict method statement

Although no great crested newts are recorded in the area according to the NBN, two ponds lie within 40m of the site so the potential for the site to support great crested newts was also considered.

Full records from the desk study can be found in Appendix C.

5.3.1 Other Mammals

Badgers

Badgers and their setts are specifically protected under the Protection of Badgers Act 1992. The act was primarily brought into force to prevent the deliberate injury to or death of badgers. Some aspects of the act affect developers. It is important that developers are aware of any badger setts located on the land they intend to develop.

All personnel working on sites where there are badgers should be aware of the Protection of Badgers Act 1992. Under this legislation it is an offence to:

- Damage a badger sett or any part of it.
- Destroy a badger sett.

- Obstruct access to, or any entrance of a badger sett.
- Causing a dog to enter a badger sett.
- Disturbing a badger when it is occupying a badger sett.

A badger sett is defined by the Act as "any structure or place, which displays signs indicating current (within the last 12 months) use by a badger". No evidence of badger was found on or around this site and so no further consideration is necessary.

5.3.2 Amphibian and Reptiles

All species of amphibians receive a measure of protection under legislation.

The Wildlife and Countryside Act 1981 has been amended by the Countryside and Rights of Way Act (CROW) 2000. This applies to England and Wales only. The key relevant fact is:

- Section 9(4) is amended to create an additional offence of reckless damage to, destruction of, or obstruction of access to, any structure or place used for shelter or protection; and reckless disturbance while occupying such a structure or place.

This means that any application for planning permission has to offer mitigation to the planners to alleviate any potential damage (i.e. provide reasonable avoidance).

Great Crested Newts

Great crested newts are protected under the Conservation of Habitats and Species Regulations 2017 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- Deliberately capture or kill any wild animal of a European Protected Species.
- Deliberately disturb any such animal.
- Deliberately take or destroy eggs of any such wild animal.
- Damage or destroy a breeding site or resting place of such a wild animal.
- Keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of an European Protected Species, or any part of, or anything derived from such a wild animal or plant.

Great crested newts are listed as a priority species on the UK BAP and Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine, or to both.

Work can be conducted under derogation licence from Natural Resources Wales providing suitable compensation and mitigation is provided and the "three tests" can be met. These are:

1. Regulation 55(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety" or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.
2. Regulation 55(9)(a) States: the appropriate authority (Natural Resources Wales) shall not grant a licence unless they are satisfied "that there is no satisfactory alternative"
3. Regulation 55(9)(b) states that the appropriate authority shall not grant a licence unless they are satisfied "that the action licensed will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in its natural range."

Two ponds scoring Average and Below Average on the HSI (Ponds 1 and 2 respectively) are within 50m of the development area.

The rapid risk assessment from Natural England has been used to assess the potential impact from the development.

Table 5.3: Rapid Risk Assessment tool results

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.3
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
Maximum:		0.3
Rapid risk assessment result:	AMBER: OFFENCE LIKELY	

Though the rapid risk assessment shows that an offence is likely, this is a generic assessment and a site-specific evaluation must be taken into consideration. Firstly, the assessment tool assumes a breeding population, of which there is currently no evidence. Secondly, the site is a well-grazed grassland of very limited value to great crested newts.

There are hedges and trees within a similar distance from the pond that would provide excellent habitat for newts compared to the short sward grassland. None of the hedges or trees are to be affected by the development as the existing field access will remain the same.

Neither of the nearby ponds will be directly affected by the development.

As the only habitat to be affected is already of very low value, working to a method statement will be sufficient to create a scenario in which the risk to individual newts is negated.

6 Impacts and Mitigation Measures

To reduce or minimise negative impact on biodiversity, the following recommendations have been made.

6.1 Newts

6.1.1 Reasonable Avoidance Measures

Pre-construction Phase

1. The site will be kept under current grazing pressure prior to construction. This will reduce the potential for newts to cross the land and reduce the potential for the terrestrial features to improve. All plants will be kept short (<10cm) to ensure there is no shelter for great crested newts on the site.

Site set up

2. Soil and vegetation will be stripped prior to setting up the site compound to ensure the compound contains no vegetation which could potentially attract great crested newts.
3. Any cabins and equipment will be located on firm compacted ground, preferably a stone or concrete base.
4. Contractors are advised not to handle newts at any time.

Construction phase

5. The Site Foreman will be responsible for ensuring all contractors are aware of the potential to find newts and that they are familiar with the appearance of newts. If in doubt the ecologist will be contacted.
6. Contractors are advised NOT to handle newts at any time.
7. Any plants around the site will be kept short to stop the development of a long sward suitable for the terrestrial habitat for newts.
8. All work will be conducted during daylight hours as newts are least likely to move during this time.
9. Trenches will be dug and filled in on the day created or will be covered over with close fitting boards at the end of each working day and checked the following morning. This is particularly important when newts are most active, between March and November.
10. If necessary, a ramp will be placed in trenches to allow newts and small mammals to escape.
11. Any heavy machinery will be stored on an area of hardstanding to avoid refugia being created.
12. Stored material will be raised on pallets to reduce the potential they might act as a temporary resting place. This reduces the potential for damage or destruction of individual newts
13. All waste will be placed straight into skips to reduce the potential of creating refugia.

14. If a newt is found, then work will stop immediately, and the ecologist contacted for advice.
15. Great crested newts will not be handled or moved without express permission from Natural England as this would constitute an offence.

Personnel awareness and emergency procedures

16. A copy of this document will be on site at all times during construction work.
17. If any great crested newts are found on site at any time, the consultant will be contacted immediately for advice.
18. If a great crested newt is found on site, all construction activities should be stopped immediately until the consultant has advised how to proceed.
19. If a great crested newt is found on site the animal should not be handled or moved from its resting place and any sheltering material should be carefully replaced. If there is immediate danger of injury (e.g. if the newt is found on a road) then the animal will be placed in a clean lidded bucket and stored in a cool but frost-free place for the ecologist to attend to.

7 Concluding Remarks

The survey has focused on habitats to be damaged or destroyed as part of this development and the potential for disturbance or damage of protected species.

The site comprises a well-grazed area of semi-improved grassland pasture. It is of very low value to any protected species. The site falls entirely within the pasture field and therefore has no formal boundaries – all existing field boundaries are outside the developable areas and will remain unaffected by the development.

There are 6 ponds within 250m, two of which were not accessible at the time of survey. The remaining four scored Below Average to Average on the HSI assessment. As the land is of such poor quality for newts in their terrestrial phase, a method statement has been provided that will allow the development to proceed in such a way as the risk to individual newts is minimal.

No evidence of any protected species was found on site.

The method statements provided in this report will be followed, and works will be done at a suitable time of year. This will result in there being no further ecological constraints to the development.

Appendices

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- B** **Detailed Methodology**
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A Details of Surveyors

Table A.1: Surveyor experience and licences

Name	Membership of associations/ experience	Licenses
Peta Marshall BSc(hons)MA	Principal Consultant MCIEEM PIEMA Peta has a degree in Applied Biology and has been working in commercial environmental assessment for over 10 years. She has 10+ years' experience surveying for protected species. As a member of the CIEEM she is bound by professional conduct.	Holder of survey licenses for bats and newts in England and Wales. Registered Consultant for Low Impact Class Licence for Bats <u>England:</u> Bats - 2015-12200-CLS-CLS BMCL - RC084 GCN - 2015-18939-CLS-CLS Dormice - 2017-29225-CLS-CLS <u>Wales:</u> Bats - 77554:OTH:CSAB:2017 GCN - 77574:OTH:SA:2017
Logan Maggs BSc(hons)	Lead Consultant Logan has a degree in Conservation and Land Management. He has 10 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.	Holder of survey licenses for bats and newts in England and Wales. <u>England:</u> Bats - 2016-24901-CLS-CLS GCN - 2017-29218-CLS-CLS <u>Wales:</u> Bats - 75748:OTH:CSAB:2017 Newts - 79665:OTH:SA:2018
Ben Jones BSc(hons) MSc	Lead Consultant Ben has a degree in Marine and Freshwater biology and a Master's degree in "Managing the Environment". He has 4 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.	Holder of survey licenses for bats and newts in England and Wales. <u>England:</u> Bats - 2017-29112-CLS-CLS GCN - 2016-25209-CLS-CLS <u>Wales:</u> Bats - S085098/1 GCN - 78716:OTH:SA:2018
Brian Marshall	Technical Director FIEMA CEnv PEA Consultant with over 35 years in the Environmental Sector	

B Detailed Methodology

Desk Study

Table A: Data sources

Organisation/Resource	Information Assessed
Freely available online species datasets (NBN Atlas)	Protected/UK BAP Species records (2km)
MAGIC website	International statutory designations (1km) • Special Protection areas (SPA) • Special Areas of Conservation (SAC) • RAMSAR sites National statutory designations (1km) • Sites of Special Scientific Interest (SSSI) • National Nature Reserves (NNR) EPS Licenses for protected species (2km)

The National Biodiversity Network (NBN) Atlas was checked for commercially available records to identify the protected species that have formally been recorded in the area. This was considered proportionate to the size of the development, as the development is a small scale development of very low impact.

A search on Multi Agency Geographic Information for the Countryside (Magic Maps) determined nearby designated areas. The map is presented in Appendix C.

Field Survey

The level of survey is aimed to identify field signs of or habitats with the potential to support protected species and therefore assist in the determination for detailed phase 2 surveys.

Determination of Ecological Value is based on the general criteria provided by IEEM (IEEM 2006).

Table B.1 Criteria of ecological values

Ecological Value	Description and Examples
High	Habitats or features that have high importance for nature conservation, such as statutory designated nature conservation sites of international or national importance or sites maintaining viable populations of species of international or national importance (e.g. Red Data Book species; European protected species).
Medium	Sites designated at a county or district level, e.g. Local Wildlife Site (LWS), ancient woodland site, ecologically 'important' hedgerows or ecological features that are notable within the context of a region, county or district (e.g. a viable area of a Priority Habitat on the county BAP or a site that supports a viable population of a county BAP species).
Low	Sites of nature conservation value within the context of a parish or neighbourhood, low-grade common habitats, such as arable fields and improved grasslands and sites supporting common, widespread species.

Species Surveys

Badgers

Surveys were conducted using guidance from Scottish Natural Heritage commissioned Report No 096 (2003).

Daytime surveys for badgers involved looking for:

- Scrapings where badgers have dug for food or used as latrines.
- Signs of a sett, including signs of use such as presence of badger hair
- Tracks and prints.

Amphibians and Reptiles

The assessment of aquatic habitat is based on the Habitat Suitability Index (HSI) and is applied according to guidance set out by the Oldham 2000, superseded by ARG in 2010, ARG UK Advice note 5. The HSI is a quantitative method of assessing the potential quality of a body of water in terms of its ability to sustain a population of great crested newts.

The terrestrial habitats at the application site were surveyed and assessed for their suitability and potential value for the support of GCN. The general topography, ground conditions and presence or absence of vegetation were recorded. A refugia search was conducted for amphibians and reptiles by looking under any logs, large stones and other debris.

Egg searches were conducted by checking aquatic vegetation for folded leaves. Where possible, these leaves were unfolded to check for the presence of an egg. This is a destructive search, and so if a great crested newt egg was found the search was considered complete and no more leaves unfolded.

C Desktop Study

Designated Sites

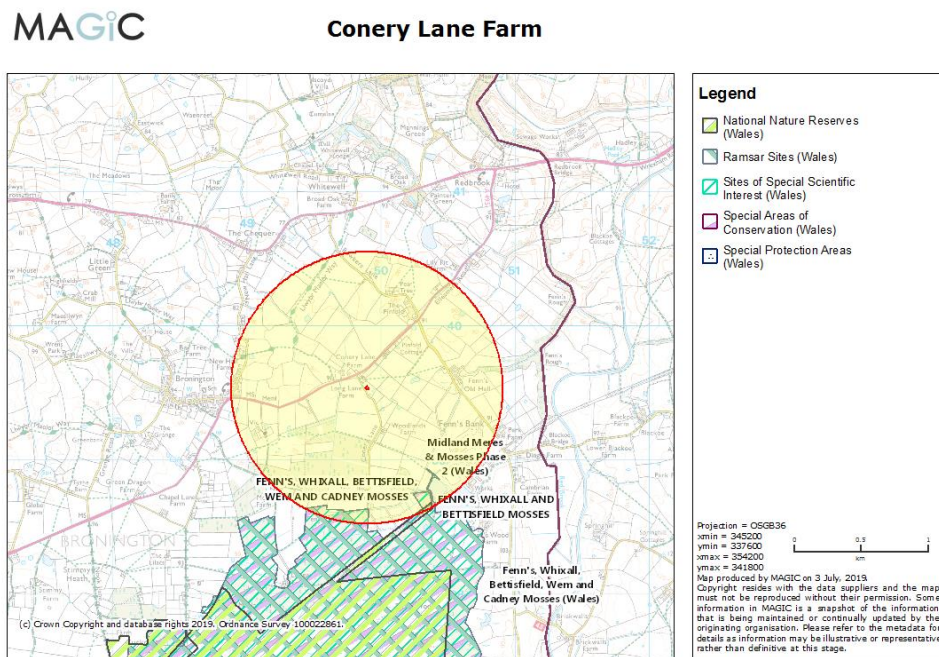


Figure C.1: Designated sites within 1km of Conery Lane Farm, Bronington

The map from Natural England presented in Figure C.1 indicates that the site is within 1km of a designated area.

Table C.1: Table of designated sites

Type of Designation	Name of Site	Site Ref	Reason for Designation	Features	Distance & Direction
Statutory - SSSI	Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses	n/a	Biological and geological	Part of a series of open water and peatland sites	700m southeast
Statutory - Ramsar	Midland Meres & Mosses Phase 2 (Wales)	UK11080	Biological and geological	Area of water bodies and wetlands	700m southeast
Statutory - SAC	Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses (Wales)	UK0012912	Biological	Area of water bodies and wetlands	700m southeast
Statutory - NNR	Fenn's, Whixall and Bettisfield Mosses	n/a	Biological	Raised bog	1km southeast

Records

A desk search was conducted focussing on the area within 2km of the site. Unless stated otherwise, all records were provided to the NBN Atlas under the Creative Commons licence: CC-BY, or the Open Government licence: OGL. The following species have official records in that area:

Other mammals:

Water vole (*Arvicola amphibius*)

Otter (*Lutra lutra*)

The nearest records of water vole are approximately 1.5km to the southeast, near Fenn's Bank, and are from 2008. The nearest records of otter are approximately 1.7km to the southeast and are from 2002.

Other mammal data was provided to the NBN Atlas by the England Otter Survey Database, the Wales Otter Survey Database and the SEDN.

Birds

Buzzard (*Buteo buteo*)

Merlin (*Falco columbarius*)

The nearest records of buzzard are approximately 1.3km to the south, in a woodland, and are from 2018. The nearest records of merlin are approximately 1.9km to the south, in an open field, and are from 2017.

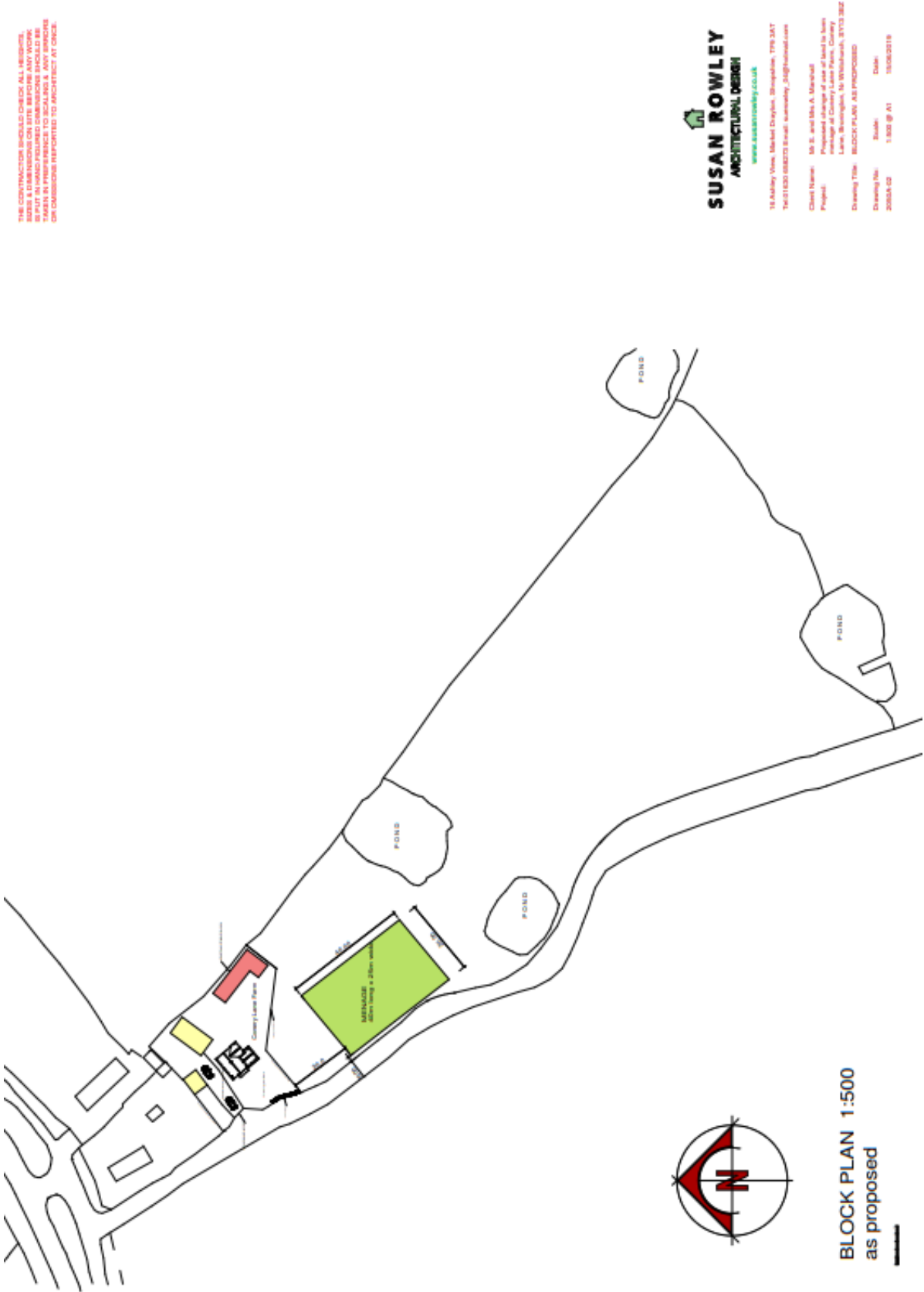
Bird species data was provided to the NBN Atlas by iRecord Surveys.

Amphibians

No commercially available records exist in the area for amphibians on the NBN Atlas.

Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses SSSI is within 2km to the south, this area is known to support large populations of great crested newts.

D Site Plans



E HSI Scores

Table E.1: HSI score and justification for Pond 1

Pond 1 Grid reference: SJ49943952		
Geographic Location	1	Zone A
Pond Area	0.95	The pond is approximately 550m ²
Permanence	0.9	The pond never dries, though water levels do drop significantly
Water Quality	0.33	Low invertebrate diversity, few submerged plants
Shade	0.7	There was estimated to be 75% shading of the area within 1m of the perimeter
Waterfowl	0.67	Waterfowl present but little indication of impact on pond vegetation.
Fish	0.67	No evidence of fish but local conditions suggest they may be present
Pond Count	1	There are 14 ponds within a 1km radius not separated by significant barriers
Terrestrial Habitat	0.33	Habitat with poor structure (e.g. amenity grassland, improved pasture and arable that offers limited opportunities for foraging and shelter (<25% of 250m ²)
Macrophytes	0.35	There was very little floating or emergent vegetation in this pond, cover was estimated to be <10%
HSI Score	0.63 - Average	

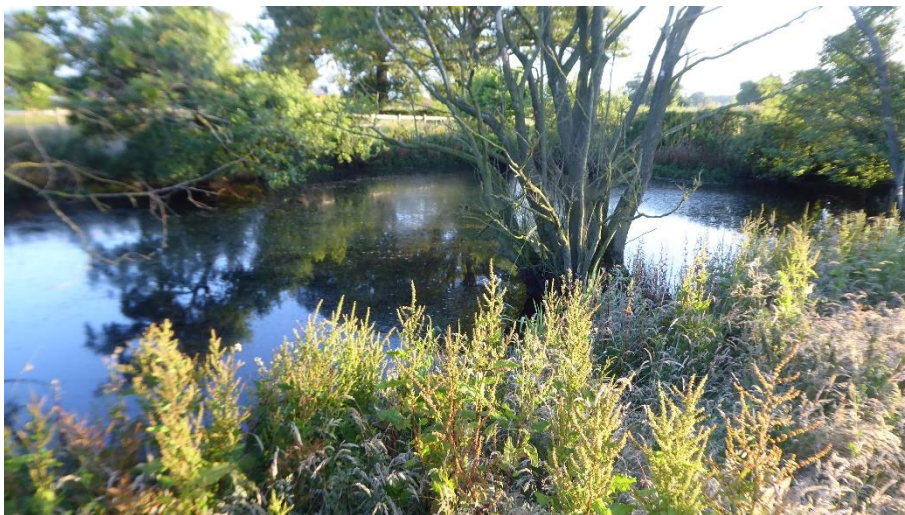


Figure E.1. Pond 1

Table E.2: HSI score and justification for Pond 2

Pond 2 Grid reference: SJ49913948		
Geographic Location	1	Zone A
Pond Area	0.5	The pond was approximately 250m ²
Permanence	0.9	The pond never dries, though water levels do drop significantly
Water Quality	0.33	Low invertebrate diversity, few submerged plants
Shade	0.2	There was estimated to be 100% shading of the area within 1m of the perimeter
Waterfowl	0.67	Waterfowl present but little indication of impact on pond vegetation.
Fish	0.67	No evidence of fish but local conditions suggest they may be present
Pond Count	1	There are 14 ponds within a 1km radius not separated by significant barriers
Terrestrial Habitat	0.33	Habitat with poor structure (e.g. amenity grassland, improved pasture and arable that offers limited opportunities for foraging and shelter (<25% of 250m ²))
Macrophytes	0.35	There was very little floating or emergent vegetation in this pond, cover was estimated to be <10%
HSI Score	0.52 – Below Average	

**Figure E.2. Pond 2**

Table E.3: HSI score and justification for Pond 3

Pond 2 Grid reference: SJ50093944		
Geographic Location	1	Zone A
Pond Area	0.6	The pond was approximately 300m ²
Permanence	0.9	The pond never dries, though water levels do drop significantly
Water Quality	0.33	Low invertebrate diversity, few submerged plants
Shade	1	There was estimated to be 40% shading of the area within 1m of the perimeter
Waterfowl	0.67	Waterfowl present but little indication of impact on pond vegetation.
Fish	0.67	No evidence of fish but local conditions suggest they may be present
Pond Count	1	There are 14 ponds within a 1km radius not separated by significant barriers
Terrestrial Habitat	0.33	Habitat with poor structure (e.g. amenity grassland, improved pasture and arable that offers limited opportunities for foraging and shelter (<25% of 250m ²)
Macrophytes	0.35	There was very little floating or emergent vegetation in this pond, cover was estimated to be <10%
HSI Score	0.63 – Average	

**Figure E.3. Pond 3**

Table E.4: HSI score and justification for Pond 4

Pond 2 Grid reference: SJ50003937		
Geographic Location	1	Zone A
Pond Area	1	The pond was approximately 600m ²
Permanence	0.9	The pond never dries, though water levels do drop significantly
Water Quality	0.33	Low invertebrate diversity, few submerged plants
Shade	0.2	There was estimated to be 100% shading of the area within 1m of the perimeter
Waterfowl	0.67	Waterfowl present but little indication of impact on pond vegetation.
Fish	0.67	No evidence of fish but local conditions suggest they may be present
Pond Count	1	There are 14 ponds within a 1km radius not separated by significant barriers
Terrestrial Habitat	0.33	Habitat with poor structure (e.g. amenity grassland, improved pasture and arable that offers limited opportunities for foraging and shelter (<25% of 250m ²))
Macrophytes	0.35	There was very little floating or emergent vegetation in this pond, cover was estimated to be <10%
HSI Score	0.56 – Below Average	

**Figure E.4. Pond 4**

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