ECOLOGICAL IMPACT ASSESSMENT

LAND AT PROSPECT HOUSE FARM,
SUTHERLAND ROAD, LONGSDON

APRIL 2018

Commissioned By

Sammons Architectural Ltd

On Behalf of

Mr & Mrs Carter

Eyebright Ecology Ltd.

Registered Office: 86 Shropshire Street, Market Drayton, Shropshire, TF9 3DG

07903 113497 / e.weir@eyebrightecology.co.uk

www.eyebrightecology.co.uk

Project Details & Quality Assurance

Project Name	Prospect House Farm, Sutherland Road, Longsdon		
Project Number	C178		
Document Name	Ecological Assessment Report		
Version	**Date of Issue**	**Prepared By**	**Reviewed By**
00	11/04/18	Eleanor Weir	Dave Allen

Notice To The Reader

This report has been prepared by Eyebright Ecology with all reasonable skill, care and diligence, within the terms of the contract with the client. The actions of the surveyor on site, and during the production of the report were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management (www.cieem.org.uk).

This report has been prepared for the exclusive use of the client and unless otherwise agreed in writing by Eyebright Ecology, no other party may use, reproduce, make use of or rely on the contents of the report. No liability is accepted by Eyebright Ecology for any use of this report, other than for the purposes for which it was originally prepared and provided. Reference to sections or particular paragraphs of this document taken out of context may lead to misrepresentation.

The results of the survey and assessment work undertaken by Eyebright Ecology are representative at the time of surveying. Every endeavour has been made to identify the presence of protected species on site, where this falls within the agreed scope of works.

The flora and fauna detailed within this report are those noted during the field survey and from anecdotal evidence. It should not be viewed as a complete list of flora and fauna species that may frequent or exist on site at other times of the year.

Up to date standard methodologies have been used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site.

Eyebright Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.

Eyebright Ecology has not independently verified information or data collected from third parties. Eyebright Ecology assumes no liability for any loss resulting from errors, omissions or misrepresentation made by others.

This Report is © Eyebright Ecology Ltd 2018

Contents

1. NON-TECHNICAL SUMMARY 5

2. INTRODUCTION 7

2.1 Background & Objectives 7

2.2 Site Character & Location 7

3. RELEVANT LEGISLATION & PLANNING POLICY 9

3.1 Habitat Regulations 9

3.2 Wildlife & Countryside Act 9

3.3 Protection of Badgers Act 10

3.4 Hedgerow Regulations 10

3.5 Natural Environment & Rural Communities Act 10

3.6 Biodiversity and Biodiversity Action Plans 10

3.7 National Planning Policy Framework (NPPF) 10

3.8 Local Planning Policy 10

4. METHODOLOGY 12

4.1 Ecological Baseline 12

4.2 Survey Constraints 13

4.3 Evaluation of ecological features 14

4.4 Assessment of effects 14

4.5 Mitigation measures 14

4.6 Residual effects 14

5. ECOLOGICAL BASELINE 15

5.1 Designated Sites for Nature Conservation 15

5.2 Habitats 15

5.3 Protected and Notable Species 16

5.4 Evaluation of ecological features 19

6. ASSESSMENT OF POTENTIAL IMPACTS, MITIGATION, COMPENSATION & ENHANCEMENT 21

6.1 Overview of Proposed Works 21
6.2 Assessment of Impacts, Mitigation, Compensation & Enhancement 21
7. SUMMARY & CONCLUSIONS 26
7.1 Construction Phase (Short Term) Effects 26
7.2 Post-construction (Medium to Long-term) Effects 26
7.3 Cumulative Effects 26
7.4 Summary of Mitigation Measures & Timing 26
8. REFERENCES 28
APPENDIX 1: FIGURES 30
APPENDIX 2: Target Notes 31
APPENDIX 3: Botanical Species List 32
APPENDIX 4: Photographs 33
APPENDIX 5: Definition of Terms 36

1. NON-TECHNICAL SUMMARY

Eyebright Ecology Ltd was commissioned by Sammons Architectural Ltd to undertake an Ecological Impact Assessment of land at Prospect House Farm, Sutherland Road, Longsdon, Staffordshire.

The site is proposed for a single dwelling (bungalow and garage).

An 'Extended' Phase I Habitat Survey was undertaken on 4 April 2018 by an experienced ecologist who is a full member of CIEEM.

The site comprised part of a field of species-poor semi-improved grassland which was heavily grazed by horses. There was a small patch of bramble scrub, introduced shrubs, a single young ash tree and the site was bounded by dry stone walls and post and rail wooden fencing.

There were no designated sites which were close enough to the site to be affected by the proposed development.

The habitats on site were found to be of limited potential for nesting birds, amphibians and reptiles, foraging bats and badgers. No evidence of any protected species were found during the walkover. No further protected species surveys are considered necessary.

The proposed development will cause loss of up to 0.12 ha of semi-improved grassland, and replacement with a building and garden, and approx. 32 m of new native hedgerow. The small patch of bramble scrub and a small section of dry stone wall will be removed to form the access.

It was found that the residual effects of development after mitigation were neutral to positive.

Precautionary mitigation measures are summarised in the following table, to ensure the development complies with protected species legislation and protects retained habitats.

Species	**Recommended Mitigation Measures**	**Timing**
Amphibians & Reptiles	Maintain grazing or management of field until construction commences Careful dismantling of dry stone wall by hand outside of the hibernation period Move any amphibians found to a safe undisturbed location Stop work immediately in the unlikely event that a great crested newt is found; seek advice from a licensed consultant. Licence may be required from	Until construction March to October

	Natural England in this case.	
Birds	Vegetation removal (scrub and any other shrubs or trees) to be undertaken outside of the bird breeding season. If this is not possible it should be subject to a check by an ecologist immediately prior to removal. Remove brash from site immediately	September to February
Badgers	Cover excavations during construction, or provide a ramp to allow mammals such as badger to escape.	During construction
Hedgehogs	Check of scrub before removal Remove brash from site immediately. Cover excavations or provide ramp to allow mammals such as hedgehogs to escape.	During construction
General habitats	Appropriate fencing to protect retained shrubs and trees and to avoid root compaction or damage.	During construction

2. INTRODUCTION

2.1 Background & Objectives

Eyebright Ecology Ltd was commissioned by Sammons Architectural Ltd to undertake an Ecological Impact Assessment of land at Prospect House Farm, Sutherland Road, Longsdon, Staffordshire (Approximate OS Grid Reference: SJ962539), hereafter referred to as 'the site'.

A planning application is proposed for construction of a single dwelling which comprises a bungalow, garage and garden.

The survey was undertaken on 4 April 2018 by Eleanor Weir, an experienced and licensed ecologist who has worked as a professional ecological consultant for 16 years, and who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The objective of this Ecological Impact Assessment is to:

- Describe the existing ecological baseline and evaluate all potentially significant impacts associated with the proposed development;
- Set out any mitigation required to ensure the works comply with the relevant legislation and to address any potentially significant ecological effects;
- Provide an assessment of any residual effects (after mitigation has been applied) and to identify any appropriate compensation and enhancement measures or post-construction monitoring that may be necessary.

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.

2.2 Site Character & Location

The site comprised part of a horse-grazed field in the rural village of Longsdon in Staffordshire Moorlands. The immediate surrounding countryside included woodland, a canal and scattered houses.

Figure 1: Site boundary in red (OS Licence 100056180)



3. RELEVANT LEGISLATION & PLANNING POLICY

Protected Species and Habitats Legislation

3.1 Habitat Regulations

The Conservation of Habitats and Species Regulations 2010 make it an offence to deliberately capture, kill or disturb any wild animal listed in Schedule 2. It is also an offence to damage or destroy a breeding site or resting place of such an animal, even if the animal is not present at the time. In UK, European Protected Species that may be relevant to this site include:

- All species of bats
- Great crested newt

Special Areas of Conservation (SAC) sites are also designated under the Habitats Directive, due to the presence of habitats and/or species which are important for conservation at a European level.

3.2 Wildlife & Countryside Act

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act.
- Plant or otherwise cause to grow in the wild any invasive plant listed under Schedule 9 of the Act.

Species potentially relevant to this site which are listed under Schedule 5 include common reptiles (adder, grass snake, slow worm and common lizard) which are partially protected against killing or injuring and bats and great crested newts which have full protection.

Sites of Special Scientific Interest (SSSI) are also designated under this Act.

3.3 Protection of Badgers Act

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

3.4 Hedgerow Regulations

The Hedgerow Regulations 1997 (as amended) makes it illegal to remove or destroy 'important' hedgerows without Local Planning Authority permission (either through planning or a Hedgerow Removal Notice). Hedgerows that are at least 20 metres long, more than 30 years old and contain certain botanical species need to be assessed for 'importance' using a number of criteria set out in the Regulations.

3.5 Natural Environment & Rural Communities Act

The NERC 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

3.6 Biodiversity and Biodiversity Action Plans

Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services is the current government strategy for maintaining and increasing biodiversity in UK. As a response to this, Local Biodiversity Action Plans set targets which aim to conserve priority species and habitats relevant to each county.

National and Local Planning Policy

3.7 National Planning Policy Framework (NPPF)

The NPPF 2012 replaces Planning Policy Statements (e.g. PPS9) and sets out current government policy on biodiversity and nature conservation. Planners are required to set criteria based policies against which proposals for development which may affect legally protected species will be judged. The NPPF promotes sustainable development by ensuring that developments take account of the role and value of biodiversity with emphasis on maintaining ecological networks at a landscape level.

3.8 Local Planning Policy

The Staffordshire Moorlands Local Plan 2016 - 2031 is currently being updated and due to be published later in 2018.

The Staffordshire Moorlands Core Strategy (Adopted March 2014) replaces the saved policies of the former Staffordshire Moorlands Local Plan. The site falls within the SS7 Churnett Valley Area Strategy, which is an area identified for sustainable tourism and rural regeneration. The strategy includes support for measures which remediate and restore derelict land, buildings and features including the appropriate redevelopment of sites, and actions which protect and enhance biodiversity in the valley. Any development should be of a scale and nature and of a high

standard of design to which conserves and enhances the heritage, landscape and biodiversity of the area, and demonstrates strong sustainable development and environmental management principles.

4. METHODOLOGY

4.1 Ecological Baseline

The ecological baseline was determined through desk study and field survey.

Desk Study

Statutory internationally, nationally and locally designated sites within 2 km of the site were identified using Natural England's MAGIC website (http://www.magic.gov.uk/) on 8 April 2018.

Staffordshire Ecological Records Ltd (SER) was consulted and records of protected sites and species within 2 km of the site were provided on 4 April 2018.

Ordnance survey maps (1:25,000) and aerial images of the site (www.streetmap.co.uk and www.maps.google.co.uk) were examined online on 4 April 2018.

Field Survey

An 'Extended' Phase I Habitat Survey was undertaken following standard methodology (JNCC 2010)[1]. The habitat types within the site were identified and mapped, and evidence or potential for protected species was noted. Plants which were visible were identified and their abundance classified using the 'DAFOR' scheme, whereby; D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare.

The Extended Phase I Habitat survey was undertaken on 4 April 2018. Weather conditions during the survey were cold (6°C) and cloudy with heavy showers.

During the 'Extended' Phase I survey, the site was inspected for any field signs of protected species or species of conservation concern (see Table 1). In addition, the habitats on, and immediately adjacent to the site were assessed for their potential to support such species. Invasive fauna and flora species were also noted and mapped.

[1] *Handbook for Phase I Habitat Survey – A technique for environmental audit.* Joint Nature Conservancy Council, 2010 (revised reprint).

Table 1: Protected fauna species potentially relevant to site habitats and field signs

Species	Habitats / Features	Field signs (in addition to sightings of individual animals)
Bats	Roost sites: Trees, buildings and other structures (e.g. mines, caves, bridges etc) Foraging areas: Waterbodies and wetland areas, river and stream corridors, grassland, parkland, woodland/edges, hedgerows and gardens Commuting routes: Hedgerows, water courses and other linear features	At potential roost sites – droppings, staining from urine, feeding remains, individual bats
Badger	Setts can occur in most urban and rural habitats, often found in woodland, along hedgerows and fields	Sett entrances, day nests, well-worn pathways, latrines, snuffle holes, hairs, prints.
Birds	Trees, scrub, grassland, hedgerows, buildings	Nests, droppings below nest sites, pellets
Reptiles	Rough grassland, logpiles, rubble, hedgebanks, wetland	Sloughed skins
Great crested newt	Ponds within 500 metres of site. Terrestrial habitat includes rough grassland, scrub, woodland, hedgerows, log and rubble piles, stone walls, animal burrows.	No field signs – presence is only confirmed by individual animals and eggs within pond.
Invertebrates	Although all habitats will support an assemblage of invertebrates, certain sites may support particularly diverse invertebrate fauna, or rare species. Sites with a mosaic of habitats, wetland habitats and semi-natural ancient habitat types may be particularly important. Brownfield sites such as old industrial workings and quarries may also support diverse or rare invertebrates.	Few field signs although certain species (e.g. ground-nesting wasps) may have burrows.

4.2 Survey Constraints

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.

Field Survey

The survey was undertaken in April, when some botanical species are not yet visible. However, an assessment of the likely status of the grassland could be carried out, by searching for vegetative leaves, dead flower spikes and by the diversity and type of grasses and other herbs that were visible. Given this, it is considered that the survey was satisfactory.

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 two years.

4.3 Evaluation of ecological features

The importance of the ecological features identified was evaluated using criteria for habitats and species following CIEEM guidelines (2016). This classifies ecological importance using a geographic scale from 'Sub-Parish' (low) to 'International' (high) (see Appendix 5).

4.4 Assessment of effects

An assessment of the ecological effects of the development was undertaken following CIEEM (2016) guidelines. Effects identified at Sub-Parish level and below were not considered 'Significant'.

The effect timescale was given as:

- Short-term: 0-3 years.
- Medium term 3-10 years.
- Long term: 10 years +.

4.5 Mitigation measures

Mitigation, compensation and enhancement measures for the construction and post-construction phases of the development were identified.

4.6 Residual effects

Effects that were predicted to occur after mitigation were also assessed using the above method.

5. ECOLOGICAL BASELINE

5.1 Designated Sites for Nature Conservation

There are no protected sites within or adjacent to the site boundary.

There is one statutory site within 2 km of the site.

Ladderedge Country Park Local Nature Reserve (LNR) lies approximately 1 km to the north-east of the site, and comprises 30 hectares of meadows and woodland along with marsh, ponds and stream.

In addition, there are 18 non-statutory sites within 2 km of the site which are a mixture of Local Wildlife Sites (LWS) and retained Biodiversity Alert Sites (BAS).

The nearest non-statutory site is Horse Bridge (east of) which is 180 m to the south, and includes scrub and broad-leaved woodland, marshy grassland and swamp along the canal embankment.

The next nearest non-statutory site is Horse Bridge Local Wildlife Site (LWS), which is 200 m to the south and includes part of the Leek Branch Canal, embankment, pasture and a pool.

There are seven woodlands listed on the Ancient Woodland Inventory within 2 km, the nearest being Hollinhay Wood which lies approximately 460 m to the east of the site.

5.2 Habitats

Site overview

The site comprised part of a field which had a gentle south-facing slope and was enclosed by a dry stone wall and fencing. The field was regularly grazed by horses, with some compaction and poaching, and a very short sward.

The habitats and target notes are mapped on Figure 2 (Appendix 1), with target notes in Appendix 2 and a species list in Appendix 3. Photographs are shown in Appendix 4.

Species-poor semi-improved neutral grassland

Overall the grassland was species-poor, ranging from an estimated 4 to 8 species per m^2. There was a greater diversity and density of herbs in the northern half of the field, which was noticeably drier underfoot than the south half (Target Note 2). The sward was very short (2 – 5 cm) due to regular grazing by horses. Grasses included abundant rough-stemmed meadow-grass *Poa trivialis*, frequent perennial rye-grass *Lolium perenne* and Yorkshire fog *Holcus lanatus*, and occasional cock's-foot *Dactylis glomerata*. In the wetter areas the sward included occasional mosses and sedges *Carex* spp. Herbs were dominated by abundant creeping buttercup *Ranunculus repens*, occasional meadow buttercup *Ranunculus acris* and broad-leaved dock *Rumex obtusifolius*. In the drier areas in the north part of the field, there was also frequent ribwort plantain *Plantago lanceolata*, occasional field wood-rush *Luzula campestris*, and rarely occurring black knapweed *Centaurea nigra*, daisy *Bellis perennis* and self-heal *Prunella vulgaris*. It is

considered likely that the grassland is degraded due to horse grazing and could revert to a more species and flower-rich sward if grazing was reduced.

Scattered broadleaf trees

There was one semi-mature ash *Fraxinus excelsior* on the south-east corner of the site (Target Note 1).

Scrub

There was a small amount of scattered bramble scrub *Rubus fruticosus* agg. along the eastern boundary (Target Note 3).

Introduced shrub

There were some bushes of ornamental laurel *Laurus* sp. and dogwood *Cornus* sp. growing along the southern boundary (Target Note 2).

Wall

The north and east boundaries were enclosed by a dry stone wall.

Fence

The southern boundary comprised a wooden post and rail fence.

Adjacent Habitats

The remainder of the grazed semi-improved grassland field was adjacent to the site, as well as residential houses and gardens.

Approximately 100 m to the east of Sutherland Road, was a large area of broadleaved woodland. To the south around 190 m away was the Caldon Canal. However these habitats are likely to be too far from the site to be affected by the scale of the proposed development.

5.3 Protected and Notable Species

The following descriptions include records of protected and notable species from Staffordshire Ecological Record (SER) as well as an assessment of potential or evidence of protected species on site.

Plants

SER returned 40 records of plants within 2 km of the site, including bluebell *Hyacinthoides non-scripta,* Dyer's greenweed *Genista tinctoria*, greater butterfly orchid *Platanthera chlorantha*, floating water plantain *Luronium natans* and little kneeling eyebright *Euphrasia confusa*.

No notable or invasive plant species were found on site during the walkover, and it is considered unlikely that they would occur on site with the existing grazing and management.

Invertebrates

SER returned 65 records of invertebrates of principle concern within 2 km of the site, including a variety of moths, butterflies, bees and beetles. There were also 6 records of white-clawed crayfish *Austropotamobius pallipes* in the Caldon canal and River Churnet.

No invertebrates were noted on site during the walkover, and it is considered unlikely that there would be any notable or diverse communities of terrestrial invertebrates occurring on site with the existing grazing and management. There was no habitat on site which could support aquatic invertebrates such as white-clawed crayfish.

Amphibians

SER returned several records of common toad *Bufo bufo* and great crested newt *Triturus cristatus* within 2 km of the site. The nearest record of great crested newt was approximately 1 km to the north-east. The nearest ponds were approximately 330 m to the north-west and 330 m to the south.

No amphibians were noted on site during the walkover, and with the current management of the site, the short grazed grassland is likely to be of low value for amphibians during their terrestrial phase due to lack of cover and frequent disturbance.

Reptiles

SER returned a number of historical records of slow worm *Anguis fragilis*, adder *Vipera beris* and common lizard *Zootoca vivipara* within 2 km of the site. The majority of records were pre-1986 but there was a record of adder from 1995 in Deep Hayes Country Park, around 635 m away from the site.

No reptiles were noted on site during the walkover, and with the current management of the site, the site is likely to be of low value for reptiles due to lack of cover or other habitat features and frequent disturbance.

Birds

SER returned numerous bird records within 2 km of the site. Species which may be relevant to the habitats present on site or surrounding are shown in Table 2.

Table 2: Records of potentially relevant bird species within 2 km.

Species	Scientific name	Special protection	Status in UK[2]	Biodiversity Action Plan (BAP) Species
Barn owl	Tyto alba	Schedule 1	Green	Staffordshire BAP
Brambling	Fringilla montifringilla	Schedule 1	Green	
Dunnock	Prunella modularis		Amber List	
Fieldfare	Turdus pilaris	Schedule 1	Red List	
House sparrow	Passer domesticus		Red List	Staffordshire BAP
Redwing	Turdus iliacus	Schedule 1	Red List	
Song thrush	Turdus philomelos		Red List	

No birds were noted on site during the walkover. There was a small amount of scattered scrub and introduced shrubs on site which could provide nesting habitat in future. The site may support foraging birds, such as fieldfare and corvids, but is currently unlikely to be of value to barn owl since the sward is too short to support mammal prey.

Bats

SER provided 40 records of bats within 2 km of the site, including 31 records of common pipistrelle *Pipistrellus pipistrellus*, 2 records of soprano pipistrelle *Pipistrellus pygmaeus*, 3 records of brown long-eared bat, and several records of noctule *Nyctalus noctula* and *Myotis sp*.

The nearest bat record was from 2014 for a grounded juvenile pipistrelle bat, 143 m to the east.

The MAGIC website was searched for any licensed mitigation projects within 2 km of the site. Although none were shown on the interactive map, the author is involved with an existing mitigation licence for brown long-eared and common pipistrelle at a residential site approximately 345 m to the south-east.

[2] BTO Birds of Conservation Concern 3 (2009): Red List species have suffered severe recent population declines, Amber List species are in moderate population decline.

There were no buildings on the site. There was one small ash tree but it was too young to have developed features that were suitable for roosting bats. It is therefore unlikely that the site supports roosting bats.

The site may provide some foraging habitat to bats as part of their wider territory. However, the site is not very sheltered and lacks diversity of habitat structure or plant diversity, and is therefore likely to support limited invertebrate prey. Furthermore, there is an abundance of higher quality foraging habitat in the surrounding area including abundant woodland, canal and river corridors. It is therefore unlikely that the site represents a significant foraging resource for bats.

Badger

SER returned a number of confidential records of badger *Meles meles* within 2 km of the site, which mostly related Road Traffic Accidents (RTAs). There were also several sett records which were over 500 m from the site.

No evidence of badger was found on site. It is considered low potential for badgers to create a sett on site in future due to lack of cover, and wet ground. Badgers could occasionally forage or commute through the site in future.

Hazel Dormouse

There were no records of hazel dormouse within 2 km of the site.

The site did not have any connected habitat suitable for supporting hazel dormouse, and this species is discounted from the assessment.

Otter and Water Vole

SER returned several records of otter *Lutra lutra* and water vole *Arvicola amphibius* within 2 km of the site, mainly along the Caldon canal, River Churnett and Endon Brook.

There was no habitat on site which was suitable for supporting otter or water vole, and the nearest waterbody (Caldon canal at 190 metres away) was considered to be too far from the site to be affected by the development. These species are discounted from the assessment.

Other mammal species

There were records of hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus* and polecat *Mustela putorius* within 2 km of the site.

The lack of cover or foraging habitat on site suggests the site is likely to have low potential to support brown hare or polecat. Hedgehog may occasionally forage or commute through the site if present in the locality.

5.4 Evaluation of ecological features

An evaluation of the ecological features within and adjacent to the survey area is provided in Table 3 below.

Table 3: Evaluation of ecological features

Ecological feature	Ecological importance	Reason
Designated sites of nature conservation		
Local Nature Reserves (LNR)	District	LNR's are statutory designated sites of local importance.
Local Wildlife Sites (LWS) / Biodiversity Alert Sites (BAS)	Parish	Local Wildlife Sites and Biodiversity Alert Sites are non-statutory sites designated for areas of habitat with local value.
Habitats within the survey area		
Poor semi-improved grassland	Sub-Parish	Common and widespread habitat of low biodiversity importance.
Introduced shrub	Sub-Parish	Common non-natural habitat.
Scattered broadleaf tree	Sub-Parish	Young tree on site which is a common habitat of limited biodiversity importance.
Scattered Scrub	Sub-Parish	Common and widespread habitat of limited biodiversity value.
Adjacent habitats		
Poor semi-improved grassland	Sub-Parish	Common and widespread habitat of low biodiversity importance
Residential gardens	Sub-Parish	Common, widespread habitats of limited biodiversity importance
Protected and notable species		
Plants	Sub-Parish	The presence of notable plant species was considered unlikely.
Invertebrates	Sub-Parish	The presence of notable invertebrate species was considered unlikely.
Amphibians	Sub-Parish	Poor semi-improved grassland which is horse grazed provided limited terrestrial habitat for common amphibians.
Reptiles	Sub-Parish	Current management (grazing) of site reduces likelihood of reptiles being present
Birds	Sub-Parish	Scrub and introduced shrubs could support a small number of common and widespread nesting bird species.
Badgers	Sub-Parish	No badger setts recorded and no evidence of badger activity was recorded. Badgers could occasionally forage through the site in future.
Bats	Sub-Parish	Bats associated with the nearby Caldon canal and woodland may occasionally forage and commute through the site.
Hazel dormouse	Negligible	There was no suitable habitat on site for this species. However, site isolated in landscape by watercourses. Therefore, presence unlikely.
Otter & Water Vole	Negligible	There was no suitable habitat on site for these species. It is considered that the site is too far away from the nearest watercourse (Caldon canal) for the development to cause any impacts.
Hedgehog	Sub-Parish	The grassland and scrub within the site and adjacent gardens could support foraging hedgehogs if populations were present in the locality.

6. ASSESSMENT OF POTENTIAL IMPACTS, MITIGATION, COMPENSATION & ENHANCEMENT

6.1 Overview of Proposed Works

The site is proposed for construction of a single dwelling. This will cause loss or change to approximately 0.12 ha of grassland and removal of part of a dry stone wall to create access. There will be temporary and minor increase in traffic and noise during construction. Post-construction there will be a slight increase in light levels from domestic use and human disturbance on site.

6.2 Assessment of Impacts, Mitigation, Compensation & Enhancement

The following table provides an assessment of the potential impacts of the development on each ecological feature, as well as proposals for mitigation, compensation and enhancement.

Table 4: Impact Assessment

Ecological Feature	**Potential Impacts from Proposed Development**	**Effect on Feature without mitigation**	**Proposed Mitigation, Compensation & Enhancement Measures**	**Residual Effects (After Mitigation has been Applied)**
Designated Sites				
LWS & BAS	No Impacts due to distance from site	No effects	None Required	No effects
Habitats				
Species-poor semi-improved grassland and scattered scrub	Construction of single dwelling and creation of garden would result in loss or damage of up to	Negative, long-term effect at sub parish level.	The footprint of the dwelling will take up less than half of the development site; the remainder of the site will become garden, much of which is likely to be lawn (amenity grassland) and may support a good range of the existing species in the grassland once established.	Negative, short-term effect at the sub-parish level. Neutral to positive effect in the medium term once new habitats have

Ecological Feature	Potential Impacts from Proposed Development	Effect on Feature without mitigation	Proposed Mitigation, Compensation & Enhancement Measures	Residual Effects (After Mitigation has been Applied)
	0.12 ha of semi-improved grassland and approx. 5 m^2 of bramble scrub		A new native species-rich hedgerow approximately 32 m long is proposed to be planted along the eastern boundary which, when established, will provide valuable habitat for wildlife and boost biodiversity on the site.	become established.
Habitats Adjacent To Site				
Semi-improved grassland, residential gardens	Potential disturbance during construction. Potential damage of shrubs and trees being retained on the boundaries e.g. through compaction to roots or accidental vehicle manoeuvres.	Negative, long-term effect at sub parish level.	Use of appropriate fencing to ensure root protection zone is maintained for retained trees and shrubs on the boundary and shrubs and trees in adjacent garden.	Neutral effect.
Species				
Notable Plants	No notable plants identified so unlikely to be impacted by development proposals	N/A	N/A	N/A

Ecological Feature	Potential Impacts from Proposed Development	Effect on Feature without mitigation	Proposed Mitigation, Compensation & Enhancement Measures	Residual Effects (After Mitigation has been Applied)
Invertebrates	Loss of species-poor semi-improved grassland and scrub	Slight negative, long-term effect at sub-parish level.	Depending on future management, the new garden may provide more diversity of flowering plants and varied structures which may attract a greater diversity of common and widespread invertebrates such as bees, moths and butterflies. The new hedgerow will provide habitat for a range of common invertebrates in future.	Neutral to positive effect at sub-parish level in the long-term.
Amphibians & Reptiles	Potential injury to individual amphibians and reptiles in the unlikely event that they are present in the habitats on site during construction. Potential loss of sheltering and foraging habitat.	Negative, unlikely short-term effect at sub parish level. Negative, long-term effect at sub-parish level.	Maintain horse grazing or similar management of the grassland until construction is due to begin, to avoid the field developing into more attractive terrestrial habitat for amphibians and reptiles. Whilst it is considered low risk for great crested newts to be on site due to the distance of ponds from the site (330 m away), a precautionary approach should be taken when dismantling the dry stone wall (avoid dismantling in winter, dismantle by hand, move any common amphibians found to adjacent undisturbed habitat, stop work in the unlikely event that a great crested newt is found and seek further advice from a licensed consultant). Garden is likely to provide equal or potentially better habitat for amphibians in future, particularly if a garden pond is installed. New hedgerow will provide potential new foraging and sheltering habitat for amphibians and reptiles if present in the locality.	Neutral to positive effect at sub-parish level in the long-term.
Birds	Destruction or damage of nests	Negative, short-term effect at	Clear bramble scrub outside of the bird breeding season which runs from March to August inclusive, or an ecologist	Neutral to positive effect at sub-parish level in the

Ecological Feature	Potential Impacts from Proposed Development	Effect on Feature without mitigation	Proposed Mitigation, Compensation & Enhancement Measures	Residual Effects (After Mitigation has been Applied)
	if present in scrub or introduced shrubs during construction. Noise disturbance during construction.	sub-parish level.	to check for active nests before vegetation clearance. Protect retained shrubs and tree on boundary of site using fencing to ensure no accidental damage in the event that an active nest was present. New hedgerow will increase potential nesting habitat on site, once established. The hedgerow is also likely to provide a foraging resource for birds.	long-term.
Badgers	Potential for badgers to fall into any open excavations during construction	Negative, unlikely, short-term effect at sub-parish level.	Ensure excavations are covered overnight, or provide a ramp to allow badgers and other mammals to escape.	Neutral effect.
Bats	Loss of low quality foraging habitat (Semi-improved grassland). Slight increase in light levels from dwelling on site.	Negative long-term effect at sub-parish level.	New garden and hedgerow are likely to be of equal or greater value to foraging bats in future. There is no additional street-lighting planned but there may be some minor light spill from windows or security lighting in future. Any outdoor security lighting should avoid illuminating the new hedgerow.	Neutral effect at sub-parish level in the long-term.
Hedgehog	Low risk of injuring hedgehog during scrub	Negative, unlikely short-term effect at	Remove scrub by hand, checking for hedgehogs underneath before using strimmers or other hand tools. Remove brash from site immediately (do not stack and	Neutral effect.

Ecological Feature	Potential Impacts from Proposed Development	Effect on Feature without mitigation	Proposed Mitigation, Compensation & Enhancement Measures	Residual Effects (After Mitigation has been Applied)
	removal	sub-parish level	burn). The garden boundaries will be the new hedgerow, existing and new post and rail fencing and existing dry stone walls which should not prevent hedgehog movement across the site.	

7. SUMMARY & CONCLUSIONS

7.1 Construction Phase (Short Term) Effects

There were no significant negative effects during the construction phase on designated sites of conservation value, due to the distance from the site.

All residual potential effects during the construction phase on notable or protected species were likely to be neutral or positive. Mitigation measures to be followed during construction will ensure compliance with relevant legislation and are summarised below.

7.2 Post-construction (Medium to Long-term) Effects

There were no significant negative effects post-construction on designated sites of conservation value, due to the distance from the site.

All residual potential effects post-construction on notable or protected species were likely to be neutral or positive.

7.3 Cumulative Effects

No cumulative effects have been identified.

7.4 Summary of Mitigation Measures & Timing

See Table 5 below.

Table 5: Mitigation Measures

Species	**Recommended Mitigation Measures**	**Timing**
Amphibians & Reptiles	Maintain grazing or management of field until construction commences Careful dismantling of dry stone wall by hand outside of the hibernation period Move any amphibians found to a safe undisturbed location Stop work immediately in the unlikely event that a great crested newt is found; seek advice from a licensed consultant. Licence may be required from Natural England in this case.	Until construction March to October
Birds	Vegetation removal (scrub and any other shrubs or trees) to be undertaken outside of the bird breeding season. If this is not possible it should be subject to a check by an ecologist immediately prior to removal. Remove brash from site immediately	September to February
Badgers	Cover excavations during construction, or provide a ramp to allow mammals such as badger to escape.	During construction
Hedgehogs	Check of scrub before removal Remove brash from site immediately. Cover excavations or provide ramp to allow mammals such as hedgehogs to escape.	During construction
General habitats	Appropriate fencing to protect retained shrubs and trees and to avoid root compaction or damage.	During construction

8. REFERENCES

Chartered Institute of Ecology and Environmental Management (2016*). Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater and Coastal*. CIEEM, Winchester.

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

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man.* British Birds 108, 708–746.

English Nature (2002) *Badgers and Development*. English Nature, Peterborough.

English Nature (2004) *Reptiles: Guidelines for Developers*. English Nature, Peterborough

Foster, J. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

Gent, T. & Gibson, S. (1998) *Herpetofauna Workers Manual*. Joint Nature Conservation Committee, Peterborough.

Harris, S, Cresswell P and Jefferies D. (1989). *Surveying Badgers.* Mammal Society.

Institute of Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment, E & F Spon, London.

JNCC (2010) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (Revised reprint). Joint Nature Conservancy Council, Peterborough.

Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

JNCC (1995) *The UK Biodiversity Action Plan*. Joint Nature Conservation Committee, Peterborough.

Rose, F. (1991). *The Wild Flower Key*. Frederick Warne, London.

Staffordshire Moorlands District Council (2014). *A Local Plan for The Future of Staffordshire Moorlands - Core Strategy Development Plan Document, Adopted March 2014.* Staffordshire Moorlands District Council, Leek.

Websites used:

Protected Sites: www.magic.gov.uk

Staffordshire Biodiversity Action Plan: http://www.sbap.org.uk/

UKBAP: http://jncc.defra.gov.uk/page-5155

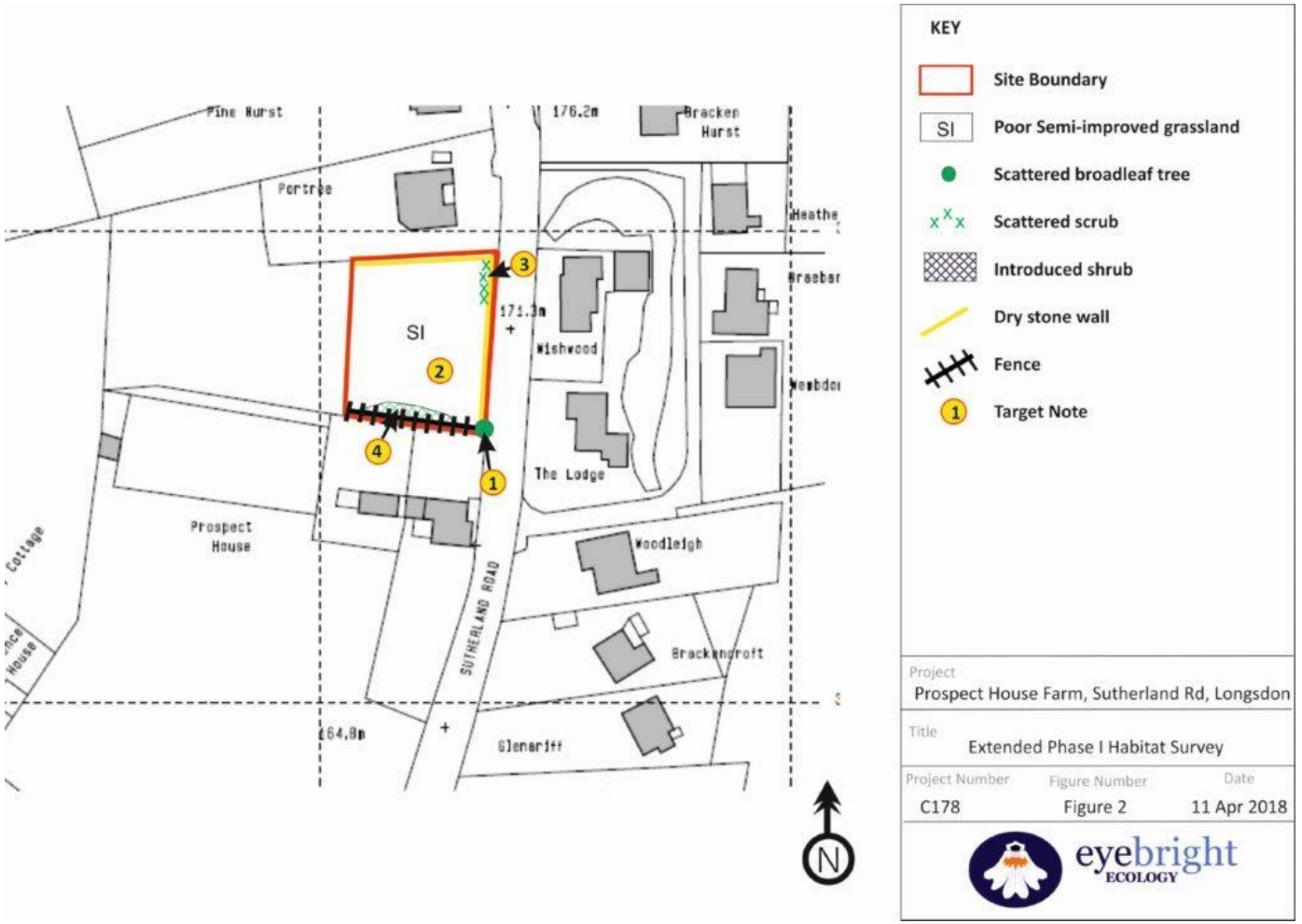
www.rspb.org.uk

www.streetmap.co.uk

www.maps.google.co.uk

APPENDIX 1: FIGURES

Figure 2: Extended Phase I Habitat Map



APPENDIX 2: Target Notes

Table 6: Target Notes (shown on Figure 2)

Number	Target Note
1	Small and young ash tree with negligible bat roosting potential
2	Semi-improved grassland field with very short sward, compaction and poaching due to regular horse grazing. Damp underfoot particularly south-east corner, there is a gentle south facing slope. Grasses included abundant rough stemmed meadow grass, frequent perennial rye-grass and Yorkshire fog, occasional cock's-foot. Herbs were dominated by creeping buttercup with occasional meadow buttercup and broadleaved dock. More diversity of herbs in north half of site (drier) which included rare to occasional black knapweed, ribwort plantain and daisy. Field woodrush and sedge species occurred occasionally.
3	Small patch of scattered bramble scrub (approximately 5 m x 1 m).
4	Introduced shrubs on boundary of site included laurel and dogwood.

APPENDIX 3: Botanical Species List

Table 7: Botanical species list with relative abundance within site and habitats

		DAFOR Code for Overall Site and Individual Habitats D = Dominant A = Abundant F = Frequent O = Occasional R = Rare				
English Name	**Scientific (Latin) Name**	**Overall (whole site)**	**Semi-Improved Grassland**	**Scrub**	**Introduced Shrubs**	**Scattered broadleaf tree**
Ash	Fraxinus excelsior	R				D
Bittercress sp.		R	R			
Black knapweed	Centaurea nigra	O	O			
Bramble	Rubus fruticosus agg.	R		D		
Broad-leaved dock	Rumex obtusifolius	O	O			
Cock's-foot	Dactylis glomerata	R	O			
Common daisy	Bellis perennis	R	R			
Creeping buttercup	Ranunculus repens	A	A			
Dogwood (ornamental)	Cornus species				A	
Field wood-rush	Luzula campestris	O	O			
Laurel	Laurus sp.				D	
Meadow buttercup	Ranunculus acris	O	O			
Meadow buttercup	Ranunculus acris	O	O			
Perennial rye-grass	Lolium perenne	F	F			
Ribwort plantain	Plantago lanceolate	O	F			
Rough-stemmed meadow-grass	Poa trivialis	A	A			
Sedge species	Carex spp.	R	R			
Self heal	Prunella vulgaris	R	R			
Yorkshire fog	Holcus lanatus	F	F			

APPENDIX 4: Photographs

Plate 1: Looking west across site from Sutherland Road. White line marks approximate development site boundary.



Plate 2: Looking over grassland towards south boundary with introduced shrubs



Plate 3: Looking from Sutherland Road towards north boundary with dry stone boundary wall and adjacent residential gardens to the north



Plate 4: Small patch of bramble scrub in north corner of site



Plate 5: Looking towards site from the remainder of the field (off-site to the west). White line marks the start of the approximate development boundary.



APPENDIX 5: Definition of Terms

Geographical Scale of Importance

Key evaluation categories are as follows:

- International value (internationally designated sites, or sites meeting criteria for international designation. Sites supporting populations of internationally important species);
- National value (UK / nationally designated sites (e.g. SSSIs) or sites meeting SSSI selection criteria. Sites containing viable areas of threatened Priority Habitat or supporting a viable population of Red Data Book species or supplying critical elements of their habitat requirements);
- Regional value (sites exceeding county-level designations but not meeting SSSI criteria. Sites containing viable areas of threatened habitats on the Regional BAP, supporting viable populations of species that are nationally scarce or included in the regional BAP due to rarity);
- County value (sites meeting criteria for county designations such as County Wildlife Sites. Site containing a viable area of a threatened habitat identified on the county BAP or supporting viable populations of county or metropolitan rarities e.g. county BAP or county 'Red Data Book' species);
- District value (Local Nature Reserves; other undesignated sites or features that are considered to appreciably enrich the habitat resource within the context of the Borough or District);
- Parish value (Local Wildlife Sites or Biological Alert Sites; other areas of habitat considered to appreciably enrich the habitat resource within the context of a parish or neighbourhood);
- Sub-Parish (ecological resource not meeting any of the above criteria).