PRELIMINARY ECOLOGICAL APPRAISAL

LAND ADJACENT TO TRAVELLER'S REST, LEEK ROAD LEEKBROOK, STAFFORDSHIRE

MAY 2018

Commissioned By

Sammons Architectural Ltd

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Project Details & Quality Assurance

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1. NON-TECHNICAL SUMMARY

Eyebright Ecology Ltd was commissioned by Sammons Architectural Ltd to undertake an ecology survey of land adjacent to Traveller's Rest, Leekbrook, Staffordshire.

The site is proposed for outline planning consent for residential development (plans currently in development).

An 'Extended' Phase I Habitat Survey was undertaken on 29 May 2018 by an experienced ecologist who is a full member of CIEEM.

The site comprised a large field of moderately species-rich semi-improved grassland which appeared to be managed for hay. There were small patches of scattered scrub, bracken and several mature silver birch trees.

There was one statutory designated site within 2 km. Ladder's Edge Country Park Local Nature Reserve (LNR) is located approximately 1.64 km to the north-west of the site, and is unlikely to be affected by the proposed development.

In addition, there were 17 non-statutory sites within 2 km of the site. The nearest non-statutory site is Cheddleton Heath LWS, which comprises an area of mixed moorland and woodland which is adjacent to the southern boundary of the site.

There were no buildings or suitable trees on site for roosting bats. There were two overhanging trees which had features which could potentially be used by roosting bats. The site may be used by foraging bats as part of their wider foraging territory, particularly along the southern boundary which is bordered by woodland edge.

Ground nesting birds could use the grassland for breeding, although there was no evidence of this during the walkover, and frequent disturbance from management (e.g. hay cutting, muck spreading etc) may deter birds from breeding within the grassland.

Due to lack of recent or local records, lack of suitable habitat features and frequent disturbance, the site was assessed to be of low potential to support common reptiles.

The grassland on site provides potential terrestrial habitat for amphibians including great crested newts, if populations occurred nearby. The nearest record of great crested newts was 900 m from the site. The nearest pond was around 420 m away, the other side of the busy A520 which is likely to form a significant barrier if newts were present in the pond. Given these factors, it is concluded that the site is unlikely to support great crested newts.

The site was unlikely to be of significant value to invertebrates.

No invasive species were noted on site.

The site may provide occasional foraging habitat for brown hare and hedgehog.

Further pre-works surveys and precautionary mitigation measures are summarised in the following table, to ensure the development complies with protected species legislation and protects retained habitats.

Habitats / Species	**Recommendations**	**Timing**
Cheddleton Heath LWS	Provision of enhanced buffer strip or Public Open Space along south of site, to protect the woodland edge and minimise disturbance to the LWS.	Design Stage & Post construction
Bats	Bat activity transects depending on extent of proposals. Bat dusk / dawn surveys of overhanging trees if likely to be affected by works (including post-construction light spill). Retention of a dark 'buffer' zone along the southern edge of the site to allow bats to forage and commute along the woodland edge.	April to September May to August Post-construction
Birds	Works to commence outside of the bird breeding season (which runs from March to August). If this is not possible grassland should be subject to a check by an ecologist immediately prior to works starting.	Works to start between September and February or subject to pre-commencement ecologist check.
Hedgehogs	Cover excavations or provide ramp to allow mammals such as hedgehogs to escape.	During construction

	Garden fences should have a gap of 15 cm at bottom to allow hedgehogs to pass between gardens (if not a continuous gap, a gap 10 cm wide x 15 cm high, should be cut into the bottom of the fence every 5 m)	Post-construction
General biodiversity	Design of development to incorporate retained 'buffer strips' or Public Open Space in south of site. Sensitive and infrequent cutting of retained grassland to encourage wild flowers. Provision of habitat features of value to a range of wildlife, including bug hotels, log piles, tree planting, fruit trees.	Pre-construction Post construction

2. INTRODUCTION

2.1 Background & Objectives

Eyebright Ecology Ltd was commissioned by Sammons Architectural Ltd to undertake an ecology survey of land adjacent to the Traveller's Rest, Leek Road, Leekbrook, Staffordshire, ST13 7DS (Approximate OS Grid Reference: SJ982535), hereafter referred to as 'the site'.

An outline planning application is proposed for residential development. Plans are currently in development.

The survey was undertaken on 29 May 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).

A full Ecological Impact Assessment has not been undertaken as detailed plans are not yet available. A preliminary ecological appraisal has been completed, and a general assessment of impacts is included, based on the assumption that the majority of habitats within the site will be affected by potential development.

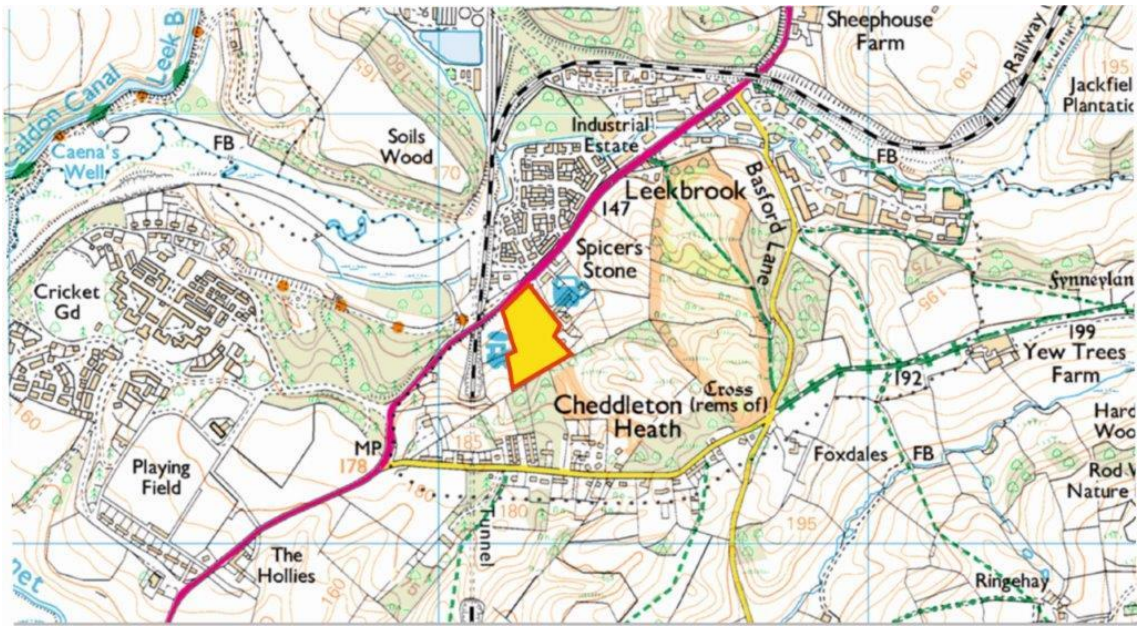
The objective of this report is to update the client with any known or potential protected or rare species that may be using the site, and to outline recommendations on how to proceed with the works in a legal and ecologically sensitive manner.

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 a large grassland field used for hay and/or grazing, which is bordered by the A520 Leek Road to the north, woodland to the south, residential houses to the east and grassland fields to the west. The surrounding countryside is predominantly woodland, moorland and agricultural grassland. The site lies on the southern edge of the rural village of Leekbrook, approximately 2.7 km south of the market town of Leek.

Figure 1: Site Location Map (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

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, being adjacent to Leekbrook, falls within the SS6b Smaller Villages Strategy, which aims to allow appropriate development which enhances community vitality or meets a local social or economic need of the settlement. Any development would be strictly controlled and would be of a size and nature to meet local needs.

4. METHODOLOGY

4.1 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/).

MAGIC was searched for presence of European Protected Species licences within 2 km of the site.

Staffordshire Ecological Records Ltd (SER) was consulted and a request was made for records of designated sites and protected or rare species within 2 km of the site.

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.

4.2 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 29 May 2018. Weather conditions during the survey were mild, still, sunny and dry.

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
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.

4.3 Survey Constraints

Desk Study

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

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.

5. RESULTS

5.1 Designated Sites for Nature Conservation

The desk study found one statutory designated site within 2 km of the site.

Ladder's Edge Country Park Local Nature Reserve (LNR) is located approximately 1.64 km to the north-west of the site, and comprises 23 hectares of unimproved meadows, marsh, woodland and pools. The LNR supports breeding populations of great crested newts *Triturus cristatus*.

In addition, there are 17 non-statutory sites (a mixture of Local Wildlife Sites (LWS) and Biodiversity Alert Sites (BAS), mostly private) within 2 km of the site. There were 7 ancient woodlands listed on the Ancient Woodland Inventory within 2 km of the site.

The nearest non-statutory site is Cheddleton Heath LWS, which comprises an area of mixed moorland with developing scrub. The south-eastern corner of the site borders Cheddleton Heath LWS, although this part of the LWS is wooded.

The next nearest non-statutory site is Soils Wood LWS, 250 m to the north of the site, which is an ancient woodland comprising mature birch woodland with a small area of acid grassland. Soils Wood envelopes Leekbrook Meadow BAS, a hay meadow with varying species-richness.

The other 14 non-statutory sites which are scattered between 500 m – 2 km away from the site, include woodland, marsh, grassland, scrub, dismantled railway, heath and acid grassland.

5.2 Habitats

Site overview

The site comprised a large grassland field, which was an area of approximately 2.14 ha. The field comprised moderately species-rich semi-improved grassland, and the site was bounded by a dry stone wall along the north boundary with Leek Road and barbed wire fencing along the other boundaries. The southern edge was bounded by the edge of mature woodland. The field was fairly flat in the northern half, whilst the southern half was undulating.

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-rich semi-improved neutral grassland

The grassland (Target Note 1) was moderately species-rich, particularly around the east, south and western edges which frequently contained at least 14 vascular species per m^2 (the northern 'flat' half of the site was slightly less diverse). The sward was 20 - 40 cms long at the time of survey, with lack of thatching, and evidence of light muck spreading indicating that the grassland is managed and regularly cut for hay or haylage. Grasses were dominant, and included abundant sweet vernal-grass *Anthoxanthum odoratum*, frequent soft-brome *Bromus hordeaceus*, rough-

stemmed meadow-grass *Poa trivialis*, Yorkshire fog *Holcus lanatus* and cock's-foot *Dactylis glomerata* as well as occasional meadow foxtail *Alopecurus pratensis* and perennial rye-grass *Lolium perenne*. Herbs were frequent within the sward, and diverse and abundant in places (particularly the southern slopes and west, south and east edges of the field). Herbs included frequently occurring common sorrel *Rumex acetosa*, meadow vetchling *Lathyrus pratensis*, bush vetch *Vicia sepium*, and common hogweed *Heracleum sphondylium* (hogweed occurred mainly in the less diverse north of the site), occasional ribwort plantain *Plantago lanceolata*, pignut *Conopodium majus*, meadow buttercup *Ranunculus acris*, red clover *Trifolium pratense*, tufted vetch *Vicia cracca*, and greater birds-foot-trefoil *Lotus pedunculatus* and rarely occurring hedge bedstraw *Galium mollugo*, common ragwort *Jacobaea vulgaris*, field wood-rush *Luzula campestris*, red campion *Silene dioica* and curled dock *Rumex crispus*. The south and south-west edges included frequent bluebell *Hyacinthoides non-scripta* and occasional bilberry *Vaccinium myrtillus*, locally abundant tormentil *Potentilla erecta* and bracken *Pteridium aquilinum*, indicating a more acidic soil and species which may have spread from the nearby woodland and heathland.

A full species list is included in Appendix 3.

Scattered broadleaf trees

There were several mature silver birch *Betula pendula* trees in the south-western corner of the site.

Scrub

There was a continuous strip of bramble scrub *Rubus fruticosus* agg. along part of the western boundary of the site. There were also two hawthorn bushes along the south-western slope, and scattered blackthorn *Prunus spinosa* scrub along the north-western boundary. There was a small clump of wild raspberry *Rubus idaeus* in the south of the field.

Bracken

The south-western corner of the field was a steep slope with a covering of bracken.

Wall

The northern boundary along Leek Road comprised a tall dry stone wall. There was also a low dry stone wall along part of the western boundary.

Fence

The east, south and west boundaries were marked by a barbed wire fence.

Adjacent Habitats

The site was bordered by mature woodland to the south (Target Note 2), with a wooded section of Cheddleton Heath bordering the south-eastern corner of the site. To the west of the site were further grassland fields which were not grazed at the time of the survey.

To the east of the site was a small track leading to several houses. A disused public house (The Traveller's Rest) was adjacent to the north-east corner of the site.

Leek Road (A520), a relatively busy highway, was bordering the north edge of the site.

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 a number of plant records within 2 km of the site, including bluebell, little kneeling eyebright *Euphrasia confusa*, heath dog violet *Viola canina* and wild pansy *Viola tricolor*.

Bluebell was present on site, along the southern and western edges of the site (Target Note 4).

No other notable or invasive plant species were found on site during the walkover.

Invertebrates

SER returned numerous records of invertebrates of principle concern within 2 km of the site, including a variety of butterflies, moths, flies, bees and beetles, many of which relate to nature reserves in the area.

The closest recorded invertebrate (160 m away from site boundary) was *Saperda scalaris*, a rare longhorn beetle, whose larvae live in dead branches. There were only several healthy silver birch on site, with no standing dead wood, so it is unlikely there is a population of this species on site.

Few 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 given the limited diversity of habitats and structures on site, lack of rare habitat types and management.

Amphibians

SER returned ten records of great crested newt *Triturus cristatus* within 2 km of the site, six of which related to population counts at Ladderedge Country Park. The nearest great crested newt record was 900 m to the north of the site and dated from 2017.

The MAGIC website was searched for any European Protected Species licences for great crested newt within 2 km of the site. The search found there did not appear to be any licensed mitigation projects for great crested newts in the vicinity of the site.

A search of the Ordnance Survey maps and aerial maps showed one pond which was approximately 420 m to the north-west, just below the River Churnet. Between this pond and the

site, there was a railway and the fairly busy A520, which are likely to provide a moderate barrier to movement if a population of great crested newts was associated with the pond.

There were also a number of records of common toad *Bufo bufo*, all of which were over 1.5 km from the site. There were no 'toad crossings' registered with Froglife within 2 km.

No amphibians were noted on site during the walkover, and although grassland can provide suitable terrestrial habitat for amphibians, the lack of any ponds within 250 m and the barriers between the nearest pond (420 m away) and the site suggest it is unlikely that great crested newts or other amphibians would occur regularly on site.

Reptiles

SER returned numerous historical records of adder *Vipera berus*, common lizard *Zootoca vivipara* and slow worm *Anguis fragilis* within 2 km of the site, mostly pre-dating 1977. The nearest record was of common lizard on Cheddleton Heath (250 m from site), although this dated from 1982. The most recent record was in 1992 and related to an adder at Deep Hayes Country Park (1.8 km from site).

No reptiles were noted on site during the walkover, and there were few notable habitat features for basking, sheltering or hibernating reptiles. Along with lack of diverse or dense habitat structure, lack of recent or local records of reptiles and regular disturbance of the site (grass/hay cutting), the site is considered to be of low potential to support a population of reptiles.

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 Priority Species
Brambling	Fringilla montifringilla	Schedule 1	Green	

[2] BTO Birds of Conservation Concern 4 (2015): Red List species have suffered severe recent population declines, Amber List species are in moderate population decline.

Fieldfare	Turdus pilaris	Schedule 1	Red List	
Redwing	Turdus iliacus	Schedule 1	Red List	
Skylark	Alauda arvensis		Red List	Staffordshire BAP Priority Species
Song thrush	Turdus philomelos		Red List	

Carrion crow *Corvus corone* and pheasant *Phasianus colchicus* were observed on site during the walkover.

There were no trees or hedgerows on site that could provide nesting habitat. The grassland has potential to support ground nesting birds such as skylark, although frequent management (hay/grass cutting, rolling etc) is likely to reduce the potential for ground-nesting birds to be present, and there was no evidence seen during the walkover. The grassland may support foraging birds, such as pheasant, blackbird and song thrush.

Bats

SER provided numerous bat records within 2 km of the site, which were mostly records of common pipistrelle *Pipistrellus pipistrellus*, and fewer records of soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus,* Daubenton's bat *Myotis daubentonii* and whiskered / Brandt's bat *Myotis mystacinus* / *M. brandtii*.

The nearest bat record was from 1994 for a male common pipistrelle bat in Leekbrook, and 2006 for common pipistrelle along the A420 (bat detector record). There were no roost records in the near vicinity.

The MAGIC website was searched for any European Protected Species licences for bats within 2 km of the site. This listed a licensed mitigation project for brown long-eared bats at 1 km to the north-east, which was for destruction of a breeding site and was dated 2013 - 2015.

There were no buildings on the site. There were several mature silver birch trees in the south-west corner, but they were intact and in good health, with were no features noted that were suitable for roosting bats. There was a pedunculate oak tree overhanging the site from the adjacent woodland (Target Note 3), which did have a split branch and peeling bark. There was also an ash tree overhanging from the adjacent field (Target Note 5), which had possible branch cavities and a split branch.

The grassland may provide foraging habitat for bats as part of their wider territory. In particular, bats often forage along woodland edge, so the southern boundary may be attractive to foraging bats. In context with the surrounding countryside however, it is considered unlikely that the site represents a significant resource for bats due to the abundance of similar grassland in the locality,

as well as a prevalence of higher quality habitats such as heath, wet grassland, river corridor and woodland.

Hazel Dormouse

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

There was no habitat suitable for dormouse within the site.

Other Notable Mammals

SER returned several records of polecat *Mustela putorius* within 2 km of the site, including a RTA on A520. The records were all over 1.2 km away.

There were also a number of records of hedgehog *Erinaceus europaeus* within 2 km of the site, including a RTA in Leekbrook in 2009. Although no evidence of hedgehog was observed on site, it is possible that this species could occasionally forage or commute through the site.

There were numerous records of brown hare *Lepus europaeus* within 2 km of the site, the nearest being around 500 m away in Leekbrook Meadow. The grassland on site could provide foraging and breeding habitat for brown hare, although none were noted during the survey.

6.0 DISCUSSION & RECOMMENDATIONS

6.1 Summary of Findings

The site was a large meadow on the edge of the village of Leekbrook. The grassland was moderately species-rich, with apparent management for hay. There were small patches of scattered scrub, bracken and several mature silver birch trees.

There was one statutory designated site within 2 km. Ladder's Edge Country Park Local Nature Reserve (LNR) which was located approximately 1.64 km to the north-west of the site, and is therefore unlikely to be affected by the proposals. In addition, there were 17 non-statutory sites (a mixture of Local Wildlife Sites (LWS) and Biodiversity Alert Sites (BAS), mostly private) within 2 km of the site. There were 7 ancient woodlands listed on the Ancient Woodland Inventory within 2 km of the site.

The nearest non-statutory site is Cheddleton Heath LWS, which comprises an area of mixed moorland with developing scrub. The south-eastern corner of the site borders Cheddleton Heath LWS, although this part of the LWS is wooded.

There were no buildings or suitable trees on site for roosting bats. There were two overhanging trees which had features which could potentially be used by roosting bats. The site may be used by foraging bats as part of their wider foraging territory, particularly along the southern boundary which is adjacent to woodland edge.

Ground nesting birds could use the grassland for breeding, although there was no evidence of this during the walkover, and the disturbance from management (hay cutting, muck spreading etc) may deter birds from breeding within the grassland.

Due to lack of local and recent records, lack of suitable habitat features and frequent disturbance, the site was assessed to be of low potential to support common reptiles.

The grassland on site provides potential terrestrial habitat for amphibians including great crested newts, if populations occurred nearby. The nearest record of great crested newts was 900 m from the site. The nearest pond was around 420 m away, the other side of the busy A520 which is likely to form a significant barrier if newts were present in the pond. Given these factors, it is concluded that the site is unlikely to support great crested newts.

The site was unlikely to be of significant value to invertebrates.

No invasive species were noted on site.

The site may provide occasional foraging habitat for brown hare and hedgehog.

6.2 Potential Impacts

The plans are not yet available, but the general proposal is for a residential housing development.

Protected Sites

It is not expected that development of the site would impact the majority of designated sites for nature conservation due to the distance from the site. The nearest Local Wildlife Site, Cheddleton Heath LWS, has an area of woodland which lies immediately adjacent to the site.

Potential impacts of a residential housing development on the adjacent LWS could include light spill, spread of non-native garden plants, cat predation on birds and mammals and potentially additional recreational pressure (e.g. dog walkers) within the Local Wildlife Site.

Bats

As there are no potential bat roosts on site, the proposed works would not directly impact roosting bats.

There are two trees which are off-site but have overhanging features that could potentially be used by roosting bats. These trees could be indirectly impacted by increased lighting from the development. If used by roosting bats, illumination of roosting features may cause bats to leave the roost.

The loss of grassland and replacement with gardens and houses is unlikely to be of significant impact to local foraging bat populations. However increase in light spill may deter some species which are light sensitive (e.g. brown long-eared bats), particularly along the southern woodland edge which is the area most likely to be used by commuting and foraging bats.

Birds

If ground nesting birds used the site in future (particularly if current management of the site ceased), works could potentially harm nesting birds and destroy active nests if carried out during the breeding season (generally running from March to August inclusive).

Reptiles

It is considered unlikely for reptiles to be present on site, and therefore unlikely that the proposed works would impact reptile populations. No further actions are considered necessary.

Great crested newts

There were no ponds on site, and the nearest pond was 420 m away. Although great crested newts can regularly disperse up to 500 m away from a breeding pond, there was a busy road (A520) between the pond and the site which is likely to provide a significant barrier even if a population was present in the pond.

It is therefore considered unlikely that removal of terrestrial habitat on site (grassland) would impact local great crested newt populations, even if present in the nearest pond.

Other mammals

The site may provide some foraging opportunities for brown hare and hedgehog, if present in the local vicinity. There is a small risk that individual hedgehogs could fall into excavations during works.

6.3 Recommendations

Cheddleton Heath LWS

Although this LWS is not due to be directly affected by the proposals, to reduce indirect impacts such as spread of garden non-native plants, light spill and cat predation, it is recommended that a 'buffer' zone of grassland is retained between the development and the edge of the woodland to the south. The southern part of the site could be set aside as 'Public Open Space' and specifically managed and enhanced for wildlife (See Biodiversity below) and public enjoyment.

Bats

The extent of potential impacts on local bat populations largely depends on the proposals. If the majority of grassland is due to be removed, or there is likely to be a significant increase in lighting, particularly along the southern edge of the site which is bounded by woodland edge, it is recommended that regular bat activity transects are undertaken between April and September, and/or static recorders, to assess the level of bat activity on site, species present and to enable full assessment of the impacts of the proposals on foraging bats.

If there is due to be any impact on the overhanging ash and oak tree (see Target Notes 3 & 5) including tree surgery or potential light spill, dusk / dawn bat surveys should be undertaken to confirm presence or absence of roosting bats.

Birds

If any vegetation removal or ground works is planned to commence between March and August inclusive, a walkover by an ecologist should be undertaken prior to works starting, to check there are no ground-nesting birds present.

Hedgehogs

During works, excavations should be covered at night or ramps should be provided to provide an escape route for hedgehogs or other mammals which may fall in.

Any close-panel fencing within the development should incorporate 'hedgehog-friendly' access points which should be 15 cm x 15 cm at the bottom of each stretch of fence. Further information can be found here: https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/

General Biodiversity

The grassland is moderately species-rich, with a good range of flowering herbs and grasses. Ideally, biodiversity on site would be preserved by setting aside an area which could be managed and enhanced for wildlife. This may be in the form of 'buffer' strips around the margins of the site, or a larger open space which would be best set aside in the southern end of the site which abuts woodland and Cheddleton Heath LWS.

These areas could be provided as 'Public Open Space' for residents to enjoy, as well as being valuable for wildlife. Existing grassland could be retained and cut on a once yearly cycle in late summer / early autumn, to encourage flowering and seeding of native species. More regularly mown paths could be provided for people to walk through the area.

Provision of 'bug hotels', log and brash piles would be of benefit to a range of wildlife including invertebrates, birds, amphibians and mammals. These would be ideally placed along the boundary of the site with the woodland to the south, to provide shelter and foraging opportunities.

Although no trees are due to be removed from the site, planting trees provides valuable habitat for wildlife in future. If any tree planting is planned, either in retained open space, or within the landscaped areas of the development, it is recommended that native species are chosen which thrive in the locality and are ideally of local provenance. Alternatively (or in addition), fruit trees are an invaluable resource to both wildlife and local residents. Provision of apple, pear, cherry, damson or plum trees is encouraged as part of any landscaping.

Summary of Further Survey & Mitigation and Enhancement

Habitats / Species	**Recommendations**	**Timing**
Cheddleton Heath LWS	Provision of enhanced buffer strip or Public Open Space along south of site, to protect the woodland edge and minimise disturbance to the LWS.	Design Stage & Post construction
Bats	Bat activity transects depending on extent of proposals. Bat dusk / dawn surveys of overhanging trees if likely to be affected by works (including post-construction light spill). Retention of a dark 'buffer' zone along the southern edge of the site to allow bats to forage and commute along the woodland edge.	April to September May to August Post-construction
Birds	Works to commence outside of the bird breeding season (which runs from March to August). If this is not possible grassland should be subject to a check by an ecologist immediately prior to works starting.	Works to start between September and February or subject to pre-commencement ecologist check.
Hedgehogs	Cover excavations or provide ramp to allow mammals such as hedgehogs to escape. Garden fences should have a gap of 15 cm at bottom to allow hedgehogs to pass between gardens (if not a continuous gap, a gap 10 cm wide x 15 cm high, should be cut into the bottom of the fence every 5 m)	During construction Post-construction
General biodiversity	Design of development to incorporate retained 'buffer strips' or Public Open Space	Pre-construction

	in south of site. Sensitive and infrequent cutting of retained grassland to encourage wild flowers. Provision of habitat features of value to a range of wildlife, including bug hotels, log piles, tree planting, fruit trees.	Post construction

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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	Semi-improved grassland, moderately species-rich particularly east, west and south margins. Sward length 20 – 40 cms. Some light muck spreading and likely cut for hay, but may be managed more traditionally (infrequent cutting) which would encourage flowering herbs.
2	Southern boundary bordered by broadleaved woodland to the south, part of which belongs to Cheddleton Heath LWS. Mature trees include oak, silver birch, alder, rowan with bluebells which have spread into the grassland southern edges of the site. Also bracken and bilberry along this side.
3	Mature oak on southern boundary (off site but overhangs), with split branch x 2, and peeling bark. Moderate potential to support roosting bats.
4	East-facing steep grassland bank which was rich in bluebells.
5	Ash tree in adjacent field which overhangs site. Split branch and possible branch cavity. Moderate potential for roosting bats.
6	

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)**					
Bilberry	Vaccinium myrtillus	R					
Bluebell	Hyacinthoides non-scripta	O					
Bramble	Rubus fruticosus agg.	R					
Bush vetch	Vicia sepium	F					
Cock's-foot	Dactylis glomerata	F					
Common hogweed	Heracleum sphondylium	F					
Common mouse-ear	Cerastium fontanum	O					
Common nettle	Urtica dioica	O					
Common ragwort	Jacobaea vulgaris	R					
Common sorrel	Rumex acetosa	F					
Cow parsley	Anthriscus sylvestris	R					
Creeping thistle	Cirsium arvense	R					
Curled dock	Rumex crispus	R					
Dandelion	Taraxacum officinale	R					
Field wood-rush	Luzula campestris	R					
Germander speedwell	Veronica chamaedrys	O					
Greater bird's-foot trefoil	Lotus pedunculatus	O					
Hawthorn	Crataegus monogyna	R					
Hedge bedstraw	Gallium mollugo	R					

Lesser trefoil	Trifolium dubium	O					
Meadow buttercup	Ranunculus acris	O					
Meadow foxtail	Alopecurus pratensis	O					
Meadow vetchling	Lathyrus pratensis	F					
Perennial ryegrass	Lolium perenne	O					
Pignut	Conopodium majus	O					
Red campion	Silene dioica	R					
Red clover	Trifolium pratense	O					
Ribwort plantain	Plantago lanceolata	O					
Rough-stemmed meadow-grass	Poa trivialis	F					
Soft brome	Bromus hordeaceus	F					
Sweet vernal grass	Anthoxanthum odoratum	A					
Tormentil	Potentilla erecta	LA					
Tufted vetch	Vicia cracca	O					
Wild raspberry	Rubus idaeus	R					
Yorkshire fog	Holcus lanatus	F					

APPENDIX 4: Photographs

Plate 1: Southerly view across site showing the grassland and southern woodland boundary



Plate 2: Northerly view across site, with A520 Leek Road bounding site to north



Plate 3: Oak on southern boundary (off-site) with splits and holes which could be used by roosting bats



Plate 4: LEFT: South-westerly corner of site with silver birch trees and bracken

RIGHT: Overhanging ash tree (TN5)

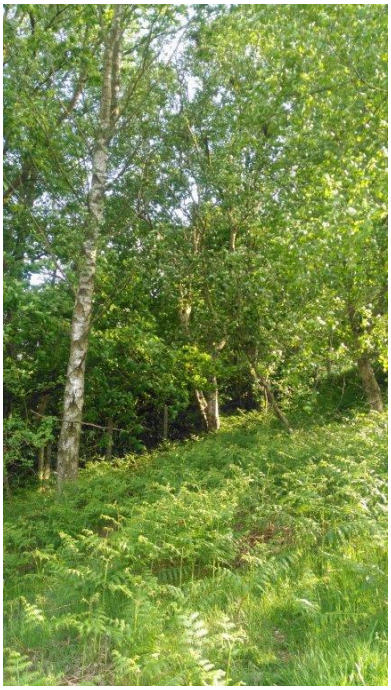




Plate 5: Mammal hole which should be monitored for use



Plate 6: Close up view of species-rich grassland (typical diversity along west, east and south margins)

