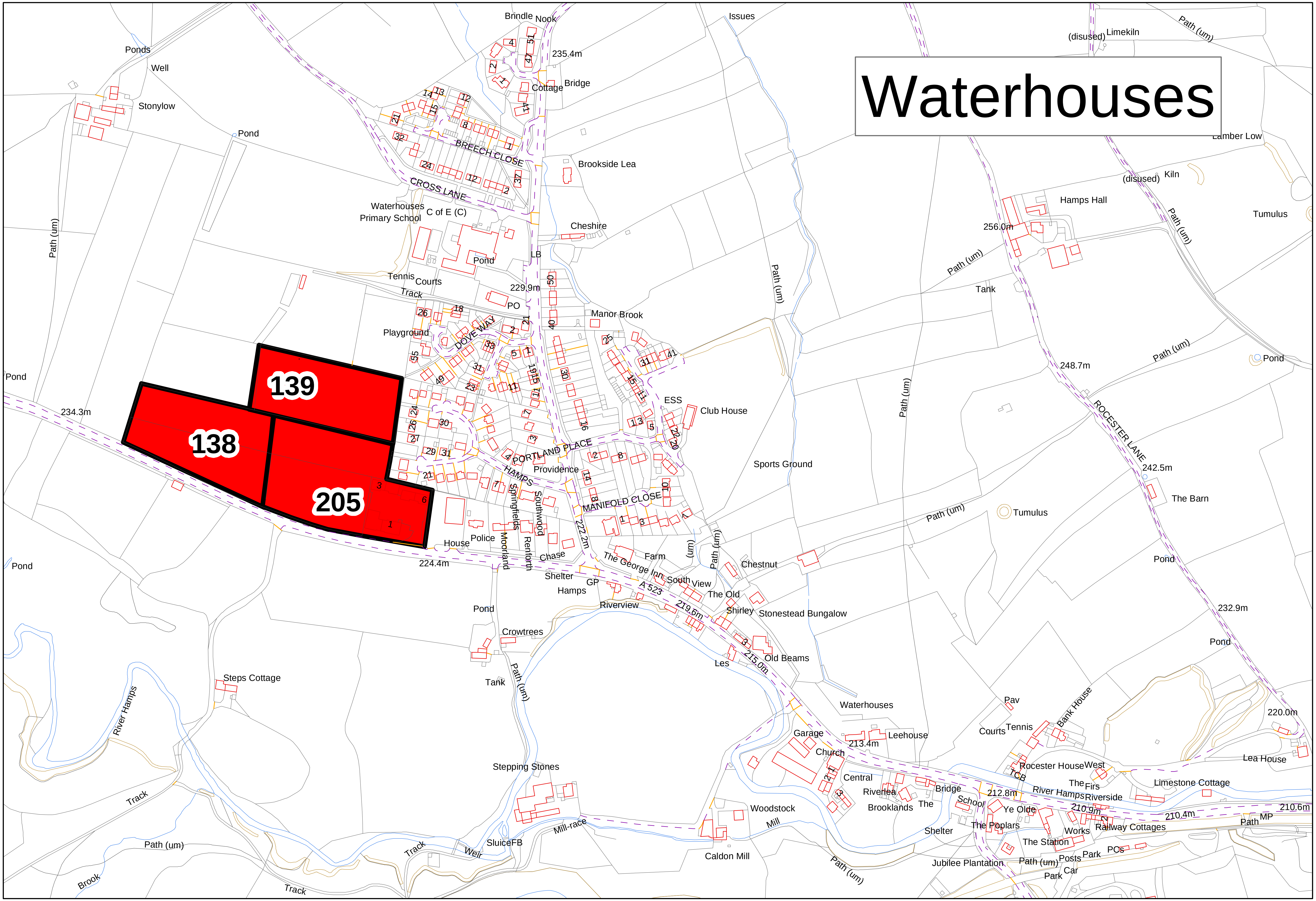


Scale 1: 3500

Site label numbers denote Site FID reference numbers used in Study.

FID 138

Table of Contents

FID 138

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 138 O.S grid reference SK 0754350605.

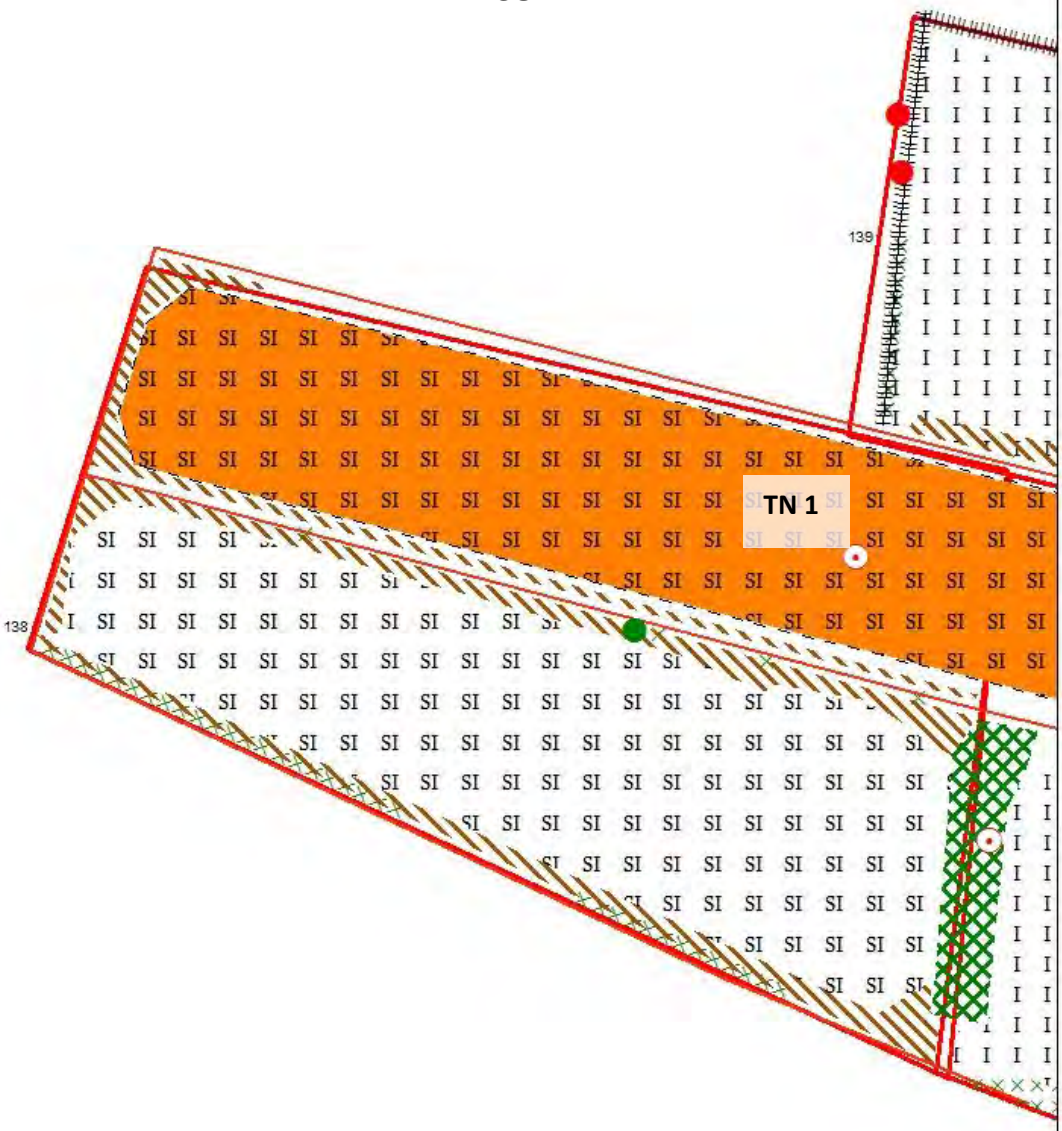
FID 138 is located west of Waterhouses village in the Staffordshire Moorlands District, surrounded by agricultural land.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 138



Scale 1:1588

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 138 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SAC	Peak District Dales
SSSI	Cauldon Railway Cutting
SSSI	Hamps and Manifold Valleys
SSSI/ WTNR	Brownend Quarry
SSSI	Caldon Dales
SSSI	Caldon Low
BAS	Winkhill (north of)
BAS	Redmoorlee Farm (south of)
BAS	Cauldon (west of)
BAS	Three Stones (south-west of)
SBI	Middlehills Farm (west of)
SBI	Willow House (south-west of)
SBI	Little Broomyshaw Farm (North of)
SBI	Little Broomyshaw Farm
SBI	Caldon Dale (grassland surrounding)
SBI	Middlefields Farm (east of), Milk Hill
SBI	Moorend Strip
SBI	Honeyholes Spoil
SBI	Yew Tree Verges
SBI	Stoneylow Farm (north-east of)
SBI	The Casey
SBI	Cotton Grange (east of)
SBI	Milk Hill
SBI	Back Lane (south of)
SBI	Rooks Flat (north of)
SBI	California (south east of)
SBI	Wallbank Grange Farm (west of)
SBI	Wallbank Grange Farm (north east of)
SBI	Limestone View Farm (west of)
SBI	Broomyshaw (east of)
RIGS	Lee House Quarry, east
RIGS	Lee House Quarry, west
RIGS	Ironpits, Hamps Valley

SAC – Special Area of Conservation, AWI – listed in Ancient Woodland Inventory, BAS – Biodiversity Alert Site, SBI – Site of Biological Importance, SSSI – Site of Special Scientific Interest, RIGS – Regionally Important Geological Site, WTNR – Wildlife Trust Nature Reserve

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A caddis fly
	A flowering plant
	Barn Owl
	Barn Swallow
	Brindled beauty
	Brown Hare
	Brown long eared bat
	Brown/Sea Trout
	Buff ermine
	Cinnabar
	Common Bullfinch
	Common Carder-bee
	Common Cudweed
	Common Pipistrelle
	Common Redstart
	Common snipe
	Common toad
	Dark-leaved Hawkweed
	Dark brocade
	Dingy Skipper
	Early mining bee
	English Sticky Eyebright
	Eurasian curlew
	Freshwater white clawed crayfish
	Ghost moth
	Good king Henry
	Great crested newt
	Greater Butterfly-orchid
	Insect - Beetle
	Iron blue Mayfly
	Jacob's ladder

	Knot grass
	Large Red-tailed Bumble Bee
	Latticed Heath
	Lichen
	Linnet
	Little kneeling eyebright
	Monk's rhubarb
	Narrow leaved bitter cress
	Pale St. John's wort
	Pipistrelle
	Polecat
	Powdered quaker
	Red kite
	Red wasp
	Rustic
	Shaded broad bar
	Sky Lark
	Small blue
	Small Heath
	Small phoenix
	Small square spot
	Smooth cat's ear
	Soprano Pipistrelle
	Tall Hawkweed
	Tree Bumble Bee
	West European Hedgehog
	White-tailed Bumble Bee
	White ermine
INV	American Mink
	Signal Crayfish
E/ UK PS	A Bat
	Barn Owl
	Bluebell
	Brown long eared bat
	Common Pipistrelle
	Eurasian Badger
	Freshwater white clawed crayfish
	Great crested newt
	Myotis Bat Species
	Pipistrelle
	Pipistrelle Bat Species

	Polecat
	Red kite
	Soprano Pipistrelle
	Spiked speedwell agg.

BAP – Biodiversity Action Plan Species, INV – Invasive weed species,
E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Semi-improved species rich neutral grassland
- Scattered scrub
- Tall ruderal vegetation
- Semi-improved species poor improved grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
SNG	0.48	37
SI	0.57	44
TR	0.16	13
DS	0.01	1
OTHER	0.06	5
TOTALS	1.29	100

SNG – Semi-improved species rich neutral grassland, SI – Species poor semi-improved grassland, TR- Tall ruderal vegetation, DS – Dense scrub

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Red fescue *Festuca rubra,* jointed rush *Juncus articulatus,* creeping buttercup *Ranunculus repens,* cock's foot *Dactylis glomerata*, common nettle *Urtica dioica*, meadow buttercup *Ranunculus acris*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* snowberry *Symphoricarpos albus,* ash *Fraxinus excelsior,* bramble *Rubus fruticosus agg,*

4.3.3 Invasive weeds

No species listed in Schedule 9 of the Wildlife and Countryside Act 1981 were recorded on site at the time of survey.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds could nest in areas of scattered trees and hedgerows from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SK0758850615	Requires botanical survey

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Semi-improved species rich neutral grassland			x		
Semi-improved species poor grassland				x	
Tall ruderal vegetation					x
Species poor grassland					x
Overall site importance			x		
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by species rich and species poor grasslands, and a main road to the south which are fairly well connected to the wider countryside with a number of networks of tall ruderal vegetation and is adjacent to FID 139 to the north and FID205 to the east.

The site itself consists of semi-improved species rich/ poor grassland (81%), whereby species such as great burnet *Sanguisorba officnalis*, jointed rush, sedge *Carex species*, meadow buttercup, red fescue, meadow foxtail *Alopecurus pratensis* and tufted vetch *Viccia cracca* are present in various frequencies. The southerly part of the site has more red fescue and Yorkshire fog *Holcus lanatus* than the aforementioned less common herbs.

The remaining habitats include species poor tall ruderal vegetation and dense snowberry scrub.

The site has a regional biodiversity value within the matrix as the semi-improved species rich grassland habitat is fairly uncommon within the locality, though has fairly poor connectivity to the wider countryside.

Despite a number of European and UK protected species being recorded within 2km the site is unlikely to support many of them.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Floral survey

As the site has some fairly good floral diversity it is recommended that another survey be carried at a more appropriate time in June/ July at the height of the grassland season, to fully ascertain whether the site supports rare or endangered flora and a more diverse floral assemblage.

Vegetation removal

It is recommended that the site be kept from being developed as there is an assemblage of flora that is uncommon in the locality. Birds could also breed within the dense scrub.

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If vegetation and scrub is to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has little potential to support protected species apart from foraging bats and badger and is fairly poorly connected to the wider countryside. However, the site is afforded a regional importance due to the relative rarity of semi-improved species rich grasslands.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Floral survey at a more appropriate time of the year
- Vegetation removal at the appropriate time of year

FID 139

Table of Contents

FID 139

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 139 O.S grid reference SK0766550656.

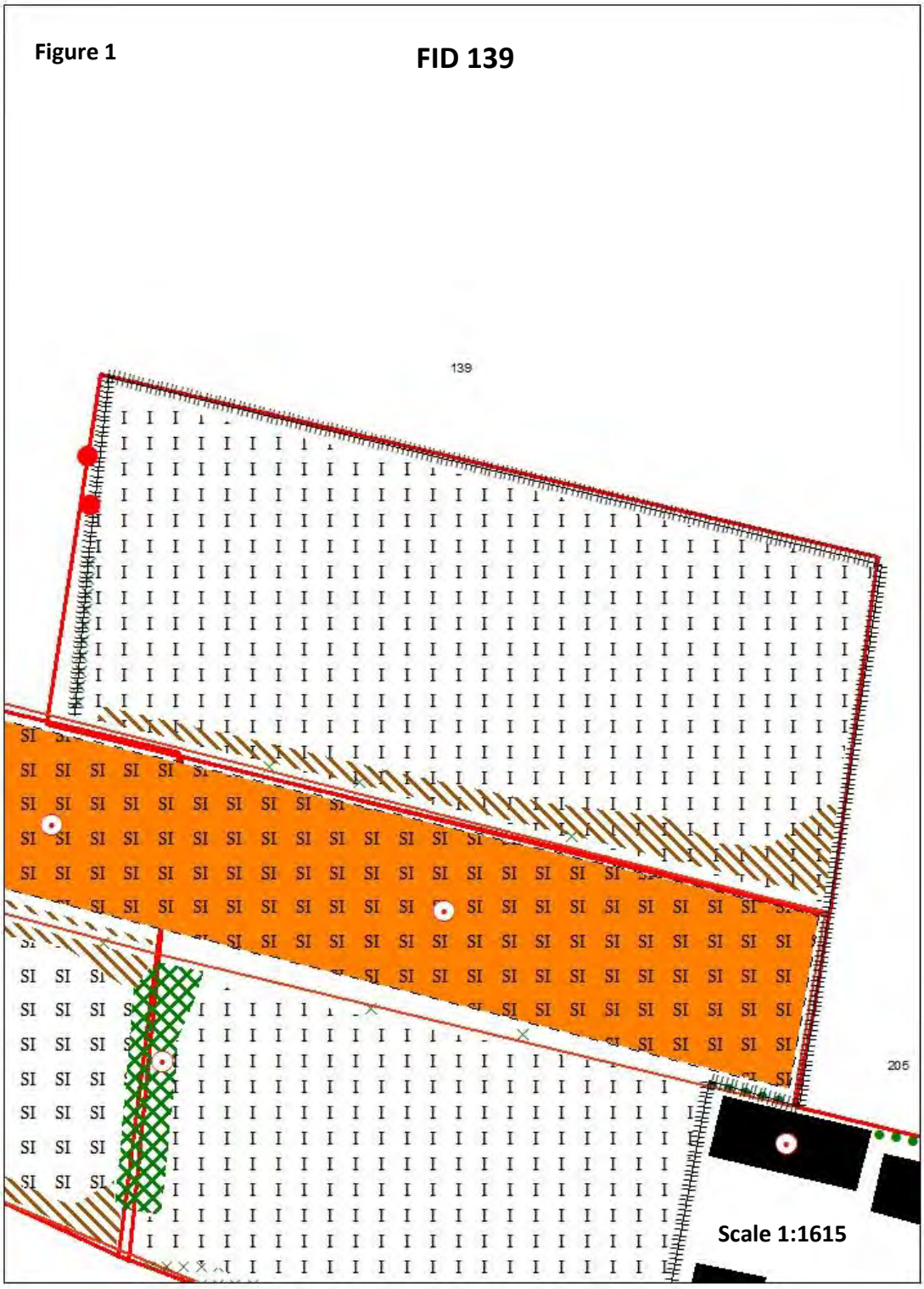
FID 139 is located west of Waterhouses village in the Staffordshire Moorlands District, surrounded by agricultural land.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 139



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 139 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
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Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SAC	Peak District Dales
SSSI	Cauldon Railway Cutting
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BAS	Cauldon (west of)
BAS	Three Stones (south-west of)
SBI	Middlehills Farm (west of)
SBI	Willow House (south-west of)
SBI	Little Broomyshaw Farm (North of)
SBI	Little Broomyshaw Farm
SBI	Caldon Dale (grassland surrounding)
SBI	Middlefields Farm (east of), Milk Hill
SBI	Moorend Strip
SBI	Honeyholes Spoil
SBI	Yew Tree Verges
SBI	Stoneylow Farm (north-east of)
SBI	The Casey
SBI	Cotton Grange (east of)
SBI	Milk Hill
SBI	Back Lane (south of)
SBI	Rooks Flat (north of)
SBI	California (south east of)
SBI	Wallbank Grange Farm (west of)
SBI	Wallbank Grange Farm (north east of)
SBI	Limestone View Farm (west of)
SBI	Broomyshaw (east of)
RIGS	Lee House Quarry, east
RIGS	Lee House Quarry, west
RIGS	Ironpits, Hamps Valley

SAC – Special Area of Conservation, AWI – listed in Ancient Woodland Inventory, BAS – Biodiversity Alert Site, SBI – Site of Biological Importance, SSSI – Site of Special Scientific Interest, RIGS – Regionally Important Geological Site, WTNR – Wildlife Trust Nature Reserve

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A caddis fly
	A flowering plant
	Barn Owl
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	Brown long eared bat
	Brown/Sea Trout
	Buff ermine
	Cinnabar
	Common Bullfinch
	Common Carder-bee
	Common Cudweed
	Common Pipistrelle
	Common Redstart
	Common snipe
	Common toad
	Dark-leaved Hawkweed
	Dark brocade
	Dingy Skipper
	Early mining bee
	English Sticky Eyebright
	Eurasian curlew
	Freshwater white clawed crayfish
	Ghost moth
	Good king Henry
	Great crested newt
	Greater Butterfly-orchid
	Insect - Beetle
	Iron blue Mayfly
	Jacob's ladder

	Knot grass
	Large Red-tailed Bumble Bee
	Latticed Heath
	Lichen
	Linnet
	Little kneeling eyebright
	Monk's rhubarb
	Narrow leaved bitter cress
	Pale St. John's wort
	Pipistrelle
	Polecat
	Powdered quaker
	Red kite
	Red wasp
	Rustic
	Shaded broad bar
	Sky Lark
	Small blue
	Small Heath
	Small phoenix
	Small square spot
	Smooth cat's ear
	Soprano Pipistrelle
	Tall Hawkweed
	Tree Bumble Bee
	West European Hedgehog
	White-tailed Bumble Bee
	White ermine
INV	American Mink
	Signal Crayfish
E/ UK PS	A Bat
	Barn Owl
	Bluebell
	Brown long eared bat
	Common Pipistrelle
	Eurasian Badger
	Freshwater white clawed crayfish
	Great crested newt
	Myotis Bat Species
	Pipistrelle
	Pipistrelle Bat Species

	Polecat
	Red kite
	Soprano Pipistrelle
	Spiked speedwell agg.

BAP – Biodiversity Action Plan Species, INV – Invasive weed species,
E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Scattered trees
- Tall ruderal vegetation
- Species poor improved grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
I	0.93	82	
TR	0.08	7	
OTHER	0.13	11	
BPT			2
TOTAL	1.14	100	2

TR- Tall ruderal vegetation, I – Improved grassland, BPT – Bat Potential Trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* Yorkshire fog *Holcus lanatus*, white clover *Trifolium repens,* rosebay willowherb *Chamerion angustifolium*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* ash *Fraxinus excelsior* , blackthorn *Prunus spinosa*, oak *Quercus sp*

4.3.3 Invasive weeds

No species listed in Schedule 9 of the Wildlife and Countryside Act 1981 were recorded on site at the time of survey.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds could nest in areas of scattered trees and scrub from March to August when birds in the UK normally breed.

5. Evaluation

Table 5

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Tall ruderal vegetation					x
Species poor grassland					x
Overall site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 5 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by allotments, species poor and species rich grasslands and domestic dwellings, which is fairly well connected to the wider countryside with a number of hedgerows, and adjacent to FID138 and FID205 to the south.

The site itself consists of species poor improved grassland (82%), with tall ruderal species such as rosebay willowherb and common nettle.

The site has a low biodiversity value within the matrix as the habitats present are species poor and common within the UK and the locality, even though they have fairly good connectivity. However, the presence of 2 oak trees with roosting bat potential elevates the site's ecological importance to district level (a roost has also been recorded within 120m).

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the 2 trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and vegetation is to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has little potential to support protected species apart from potentially roosting/ foraging bats and badger, and is fairly poorly connected to the wider countryside. Nevertheless the site is afforded district level ecological importance due to the bat roosting potential of these 2 trees.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Bat survey of the 2 trees with bat roosting potential
- Vegetation removal at the appropriate time of year

FID 205

Table of Contents

FID 205

1. Introduction

1.1 Background

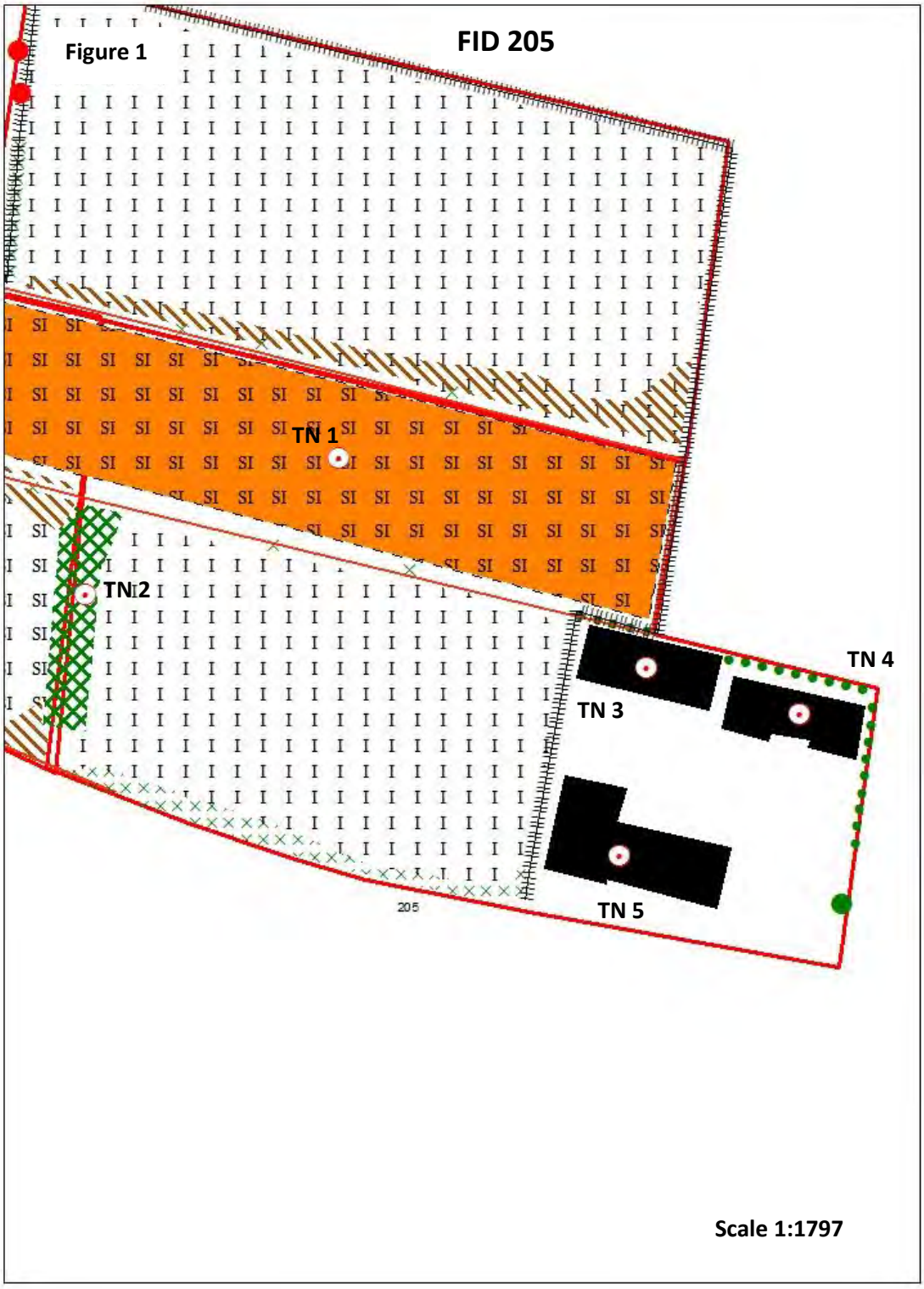
The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 205 O.S grid reference SK0768650548.

FID 205 is located west of Waterhouses village surrounded by agricultural land, commercial premises and houses.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 205 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SAC	Peak District Dales
SSSI	Cauldon Railway Cutting
SSSI	Hamps and Manifold Valleys
SSSI/ WTNR	Brownend Quarry
SSSI	Caldon Dales
SSSI	Caldon Low
BAS	Winkhill (north of)
BAS	Redmoorlee Farm (south of)
BAS	Cauldon (west of)
BAS	Three Stones (south-west of)
SBI	Middlehills Farm (west of)
SBI	Willow House (south-west of)
SBI	Little Broomyshaw Farm (North of)
SBI	Little Broomyshaw Farm
SBI	Caldon Dale (grassland surrounding)
SBI	Middlefields Farm (east of), Milk Hill
SBI	Moorend Strip
SBI	Honeyholes Spoil
SBI	Yew Tree Verges
SBI	Stoneylow Farm (north-east of)
SBI	The Casey
SBI	Cotton Grange (east of)
SBI	Milk Hill
SBI	Back Lane (south of)
SBI	Rooks Flat (north of)
SBI	California (south east of)
SBI	Wallbank Grange Farm (west of)
SBI	Wallbank Grange Farm (north east of)
SBI	Limestone View Farm (west of)
SBI	Broomyshaw (east of)
RIGS	Lee House Quarry, east
RIGS	Lee House Quarry, west
RIGS	Ironpits, Hamps Valley

SAC – Special Area of Conservation, AWI – listed in Ancient Woodland Inventory, BAS – Biodiversity Alert Site, SBI – Site of Biological Importance, SSSI – Site of Special Scientific Interest, RIGS – Regionally Important Geological Site, WTNR – Wildlife Trust Nature Reserve

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A caddis fly
	A flowering plant
	Barn Owl
	Barn Swallow
	Brindled beauty
	Brown Hare
	Brown long eared bat
	Brown/Sea Trout
	Buff ermine
	Cinnabar
	Common Bullfinch
	Common Carder-bee
	Common Cudweed
	Common Pipistrelle
	Common Redstart
	Common snipe
	Common toad
	Dark-leaved Hawkweed
	Dark brocade
	Dingy Skipper
	Early mining bee
	English Sticky Eyebright
	Eurasian curlew
	Freshwater white clawed crayfish
	Ghost moth
	Good king Henry
	Great crested newt
	Greater Butterfly-orchid
	Insect - Beetle
	Iron blue Mayfly
	Jacob's ladder

	Knot grass
	Large Red-tailed Bumble Bee
	Latticed Heath
	Lichen
	Linnet
	Little kneeling eyebright
	Monk's rhubarb
	Narrow leaved bitter cress
	Pale St. John's wort
	Pipistrelle
	Polecat
	Powdered quaker
	Red kite
	Red wasp
	Rustic
	Shaded broad bar
	Sky Lark
	Small blue
	Small Heath
	Small phoenix
	Small square spot
	Smooth cat's ear
	Soprano Pipistrelle
	Tall Hawkweed
	Tree Bumble Bee
	West European Hedgehog
	White-tailed Bumble Bee
	White ermine
INV	American Mink
	Signal Crayfish
E/ UK PS	A Bat
	Barn Owl
	Bluebell
	Brown long eared bat
	Common Pipistrelle
	Eurasian Badger
	Freshwater white clawed crayfish
	Great crested newt
	Myotis Bat Species
	Pipistrelle
	Pipistrelle Bat Species

	Polecat
	Red kite
	Soprano Pipistrelle
	Spiked speedwell agg.

BAP – Biodiversity Action Plan Species, INV – Invasive weed species,
E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Semi-improved species rich neutral grassland
- Scattered trees
- Buildings and hard standing
- Improved species poor improved grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	0.62	36
SNG	0.44	26
DS	0.03	2
OTHER	0.60	36
TOTALS	1.69	100

I – Improved grassland, SNG – Semi-improved species rich neutral grassland,
DS – Dense scrub

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Red fescue *Festuca rubra*, meadow foxtail *Alopecurus pratensis*, meadow buttercup *Ranunculus acris*, tufted vetch *Viccia cracca*, jointed rush *Juncus articulatus*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* sycamore *Acer pseudoplatanus,* bramble *Rubus fruticosus agg,* elder *Sambucus nigra*,

4.3.3 Invasive weeds

No species listed in Schedule 9 of the Wildlife and Countryside Act 1981 were recorded on site at the time of survey.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds could nest in areas of scattered trees and hedgerows from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SK0766150598	Requires botanical survey
2	SK0772850554	Does not require bat survey
3	SK0776050543	Does not require bat survey
4	SK0772650512	Requires bat survey

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Semi-improved species rich neutral grassland			x		
Improved species poor grassland					x
Dense scrub					x
Species poor grassland					x
Overall site importance			x		
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by species rich and species poor grasslands, and main road to the south which are fairly poorly connected to the wider countryside and is adjacent to FID 139 to the north and FID138 to the west.

The site itself consists of semi-improved species rich/ poor grassland (62%), whereby species such as great burnet *Sanguisorba officnalis*, jointed rush, sedge *Carex species*, meadow buttercup, red fescue, meadow foxtail and tufted vetch are present in various frequencies.

The remaining habitats include species poor tall ruderal vegetation and dense snowberry *Symphoricarpos albus* scrub.

The site has been given a regional value within the matrix as the semi-improved species rich grassland habitat is fairly uncommon within the locality. Although the site is not particularly florally diverse species such as great burnet are fairly uncommon, and the site being directly connected to similar species rich grassland elevates the site's ecological importance.

Despite numerous European and UK protected species being recorded within 2km the site is deemed potentially able to only support roosting/ foraging bats (roost recorded 75m away), badger and West European Hedgehog (recorded within 100m to the south east).

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Floral survey

As the site has some floral diversity it is recommended that another survey be carried out at a more appropriate time in June/ July at the height of the grassland flowering season, to fully ascertain whether the site supports rare or endangered flora and a more diverse floral assemblage.

Vegetation removal

It is recommended that the site be kept from being developed as there is an assemblage of flora that is uncommon in the locality, and birds could breed within the dense scrub.

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If vegetation and scrub is to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

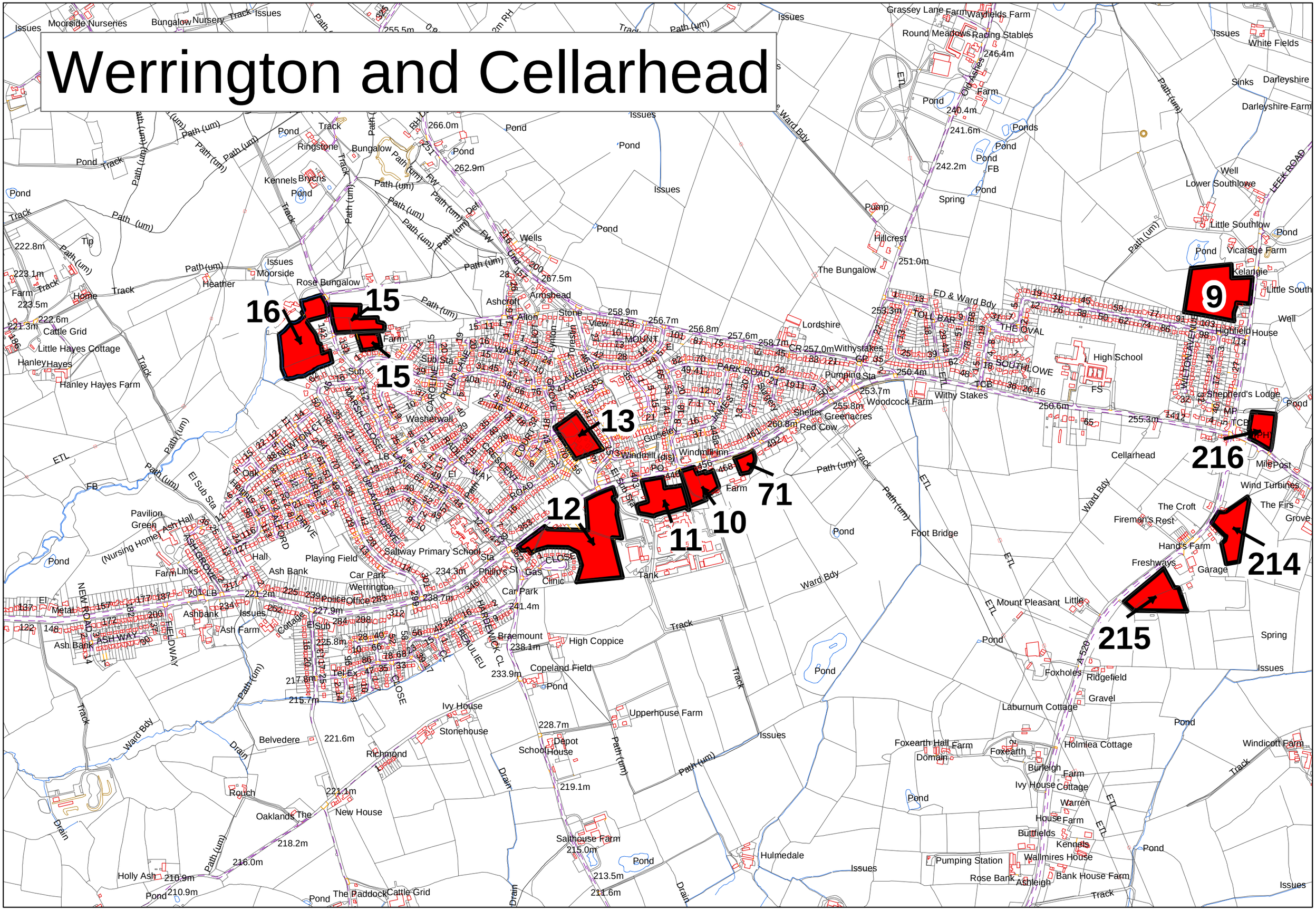
The site is not recommended to be put forward for development.

The site has little potential to support protected species apart from roosting/ foraging bats, badger and breeding birds, but connected adjacent to other species rich grasslands. Semi-improved species rich grasslands are uncommon and should be preserved, therefore the site is attributed regional ecological importance.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Bat survey of the highlighted building
- Floral survey within the survey season
- Vegetation removal at the appropriate time of year

Werrington and Cellarhead



Scale 1: 8600

Site label numbers denote Site FID reference numbers used in Study.

FID 9

Table of Contents

FID 9

1. Introduction

1.1 Background

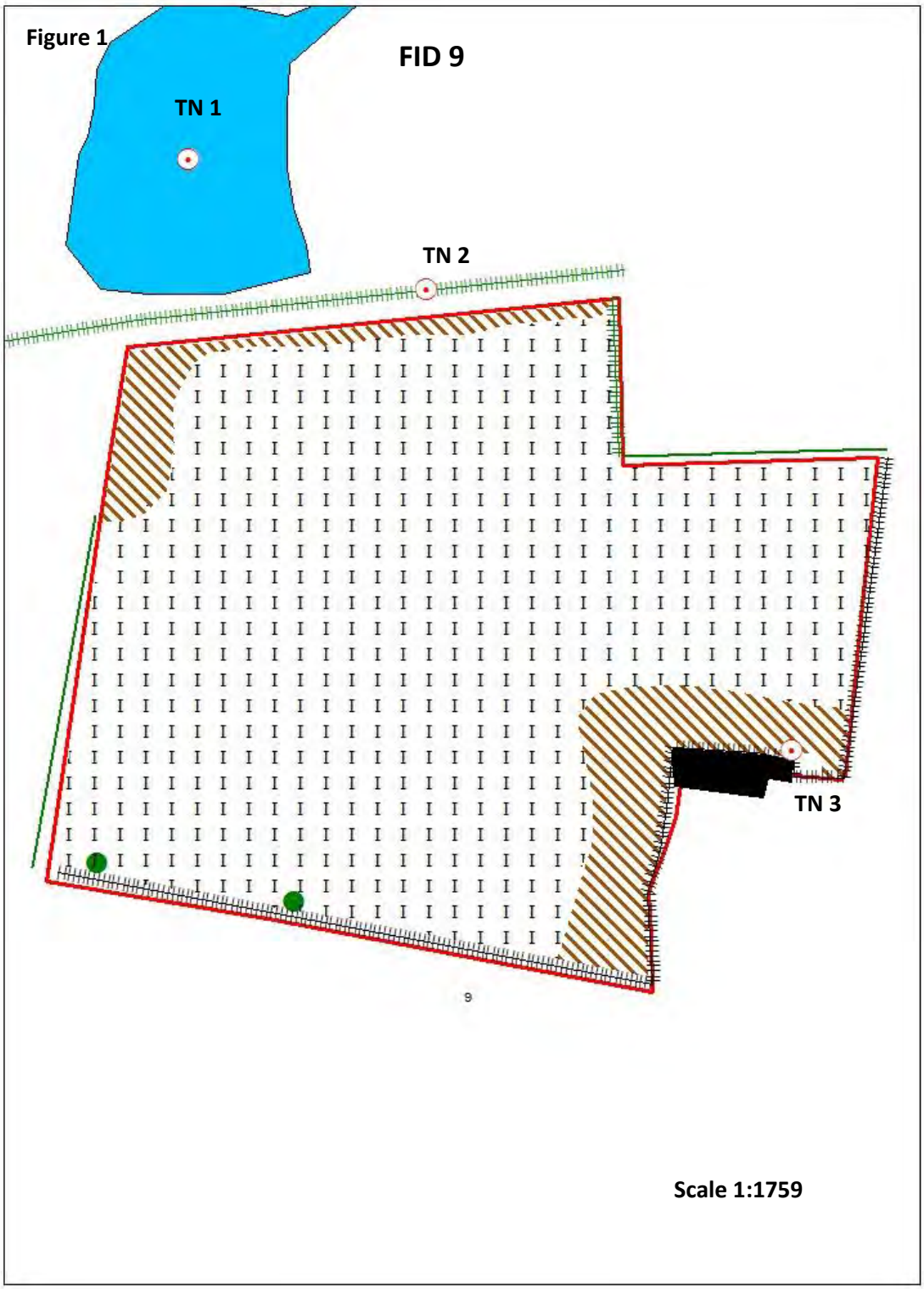
The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 9 O.S grid reference SJ9567347965.

FID 9 is located east of Werrington village, approximately 4km east of Stoke on Trent in the Staffordshire Moorlands District, surrounded by a mixture of agricultural land, farm buildings and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 9 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
SSSI	Wetley Moor
AWI	Consall Wood
BAS	Platt (north of)
SBI	The Rookery
SBI	March Lane/ Windycote Lane
SBI	Creswell's Piece
SBI	Wetley Rocks
SBI	Consall Scout Camp

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A bumble bee
	A flowering plant
	Autumnal rustic
	Barn Owl
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Brown Long-eared Bat
	Common bullfinch
	Common Carder bee
	Common kestrel
	Common Pipistrelle
	Common starling
	Common swift
	Daubenton's bat
	Dunnock
	Eurasian Curlew
	European water vole

	Ghost moth
	Grass Snake
	Great crested newt
	Green woodpecker
	House sparrow
	Insect
	Jacob's ladder
	Lesser spotted woodpecker
	Little kneeling eyebright
	Mistle thrush
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small phoenix
	Small square spot
	Tall hawkweed
	West European Hedgehog
	White ermine
	Willow warbler
INV	American mink
	Japanese rose
	New Zealand pigmyweed
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown Long-eared Bat
	Daubenton's bat
	European water vole
	Eurasian Badger
	Grass Snake
	Great crested newt
	Pipistrelle
	Soprano pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.2.1 Aerial photography

Through study of aerial photography 2 ponds are present, 1 large pond immediately north <20m away and the other small pond <200m east of the site.

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Improved grassland
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	1.63	84
TR	0.23	12
OTHER	0.07	4
TOTALS	1.93	100

TR- Tall ruderal vegetation, I – Improved grassland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* soft rush *Juncus effusus*, bramble *Rubus fruticosus agg*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* elder *Sambucus nigra*, ash *Fraxinus excelsior*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* broadleaved dock *Rumex obtusifolius,* creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare* have all been recorded within the grassland and tall ruderal vegetation.

4.3.4 Fauna

Bats

1 farm outbuilding is present on site, albeit halfway contained within the boundary. It is of brick construction with a tile roof with potential entrance holes in the brickwork, and therefore is deemed potentially suitable to support roosting bats.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of broadleaved woodland and scattered trees from March to August when birds in the UK normally breed.

Reptiles and amphibians

Due to the close proximity of a pond to the north it is likely that the adjacent hedgerow and tall ruderal vegetation have the potential to support reptile and amphibian populations.

Despite the area shown as Target note 1 being >200m away from 2 nearby ponds the refugia, bare patches of ground reptiles could potentially be used for basking, the tall ruderal vegetation as cover and use for foraging and both amphibians and reptiles could also potentially use these refugia as a hibernacula.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9562348067	Lake, requires great crested newt survey
2	SJ9567448038	Species rich hedgerow containing 8 native species and 3 non-native species
3	SJ9575147931	Rubble pile and breeze blocks, potential refugia

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Species poor hedgerows				x	
Tall ruderal vegetation				x	
Scattered trees					x
Species poor grassland					x
Overall potential site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland. However, the presence of 2 ponds <200m away suggests that the site could support terrestrial amphibians and reptiles, which increases the value from a biodiversity perspective of the hedgerow and tall ruderal vegetation.

The species poor habitats present on site are particularly common in the UK, have low biodiversity value and therefore are deemed to have a low value within the matrix.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include foraging bats, badger as well as terrestrial amphibians and reptiles.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Great crested newt survey

The great crested newt is afforded strict protection under the Conservation of Habitats and Species Regulations, 2010 and the Wildlife & Countryside Act 1981 (as amended by the CRoW Act 2000).

Under the legislation, it is an offence to intentionally kill, injure or take a great crested newt as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of great crested newts to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species. The legislation applies to great crested newts in both aquatic and terrestrial habitats and to all life stages.

Therefore as there is a pond within 150m it is recommended that a great crested newt survey is carried out according to 'Common Standards Monitoring Guidance' (JNCC 2004).

Buildings with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010. Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the building recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees and buildings are checked for the presence of breeding birds at the same time as the bat surveys.

Reptile survey

All common reptiles in the UK, i.e. slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, adder *Vipera berus* and grass snake *Natrix natrix*, are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect of Sections 9(1) and 9(5) which makes it an offence to intentionally kill, injure or sell the animals.

It is recommended that the refugia present at target note 3 should be removed by hand and checked for presence of amphibians and reptiles prior to development works commencing.

Reptiles could potentially be supported by some habitats on site and have been recorded within 2km. Therefore a regime of reptile surveys is recommended according to guidelines set out in the Herpetofauna workers manual (Gent and Gibson 1998).

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use)

or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has mostly low biodiversity value overall in terms of area and is directly adjacent to a small domestic housing estate and species poor grasslands. The site does have some good connectivity to a pond which increases chance of the site support terrestrial populations of amphibians and reptiles. The site is therefore deemed as having district ecological importance in terms of its potential loss within the wider countryside.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Great crested newt survey of the nearby pond
- A bat survey regime to ascertain whether bats roost in the building
- Reptile survey and manual removal of potential refugia
- Vegetation removal at the appropriate time of year

FID 10

Table of Contents

FID 10

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 10 O.S grid reference SJ9430547450.

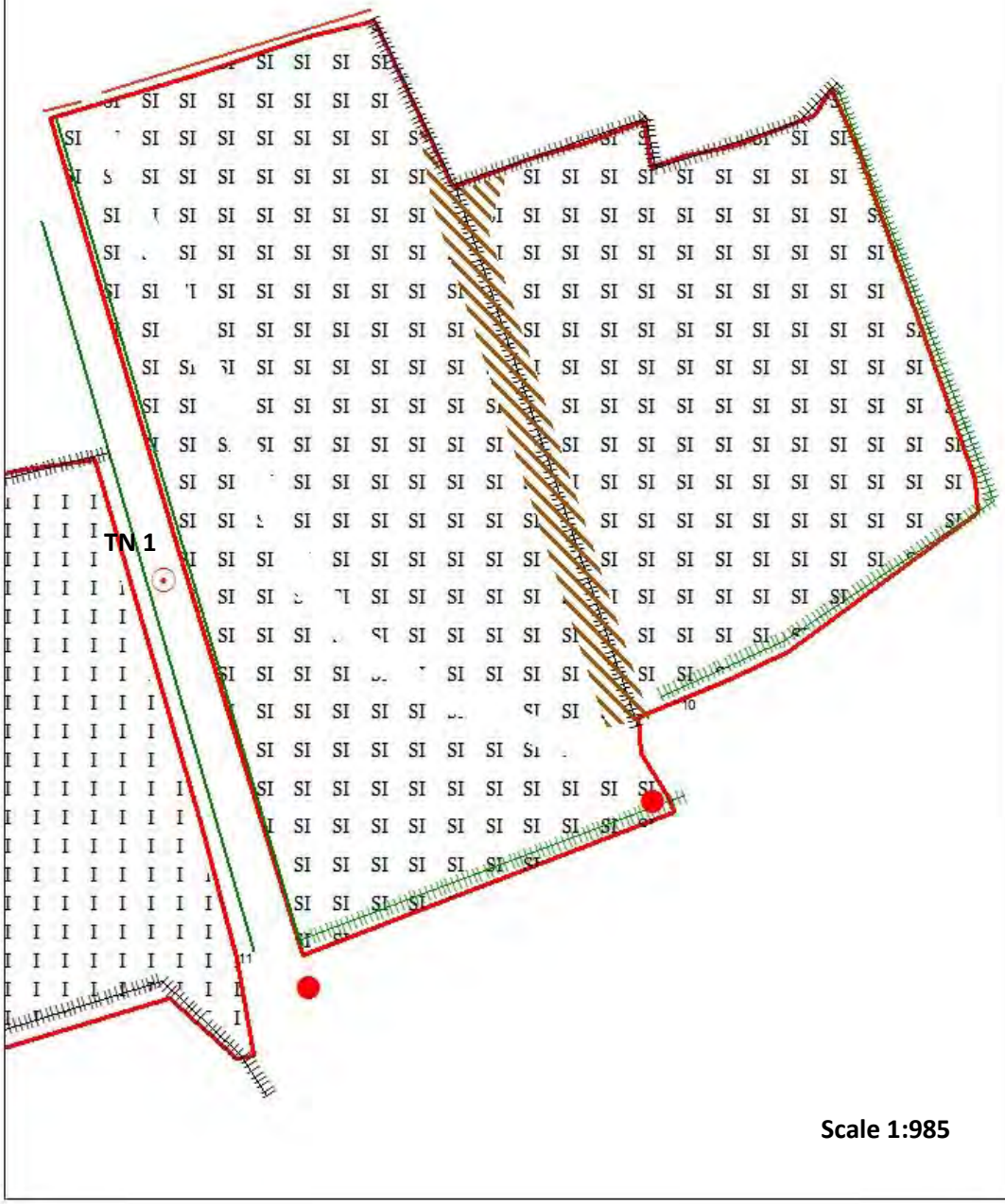
FID 10 is located south of Werrington village, approximately 4 km east of Stoke on Trent in the Staffordshire Moorlands District, surrounded by agricultural pasture and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 10



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 10 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
AWI/ BAS	Brookhouse Wood
SBI	March Lane/ Windycote Lane
SBI	Creswell's Piece

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	A true fly
	Barn Owl
	Barn swallow
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Buff ermine
	Common bullfinch
	Common Carder bee
	Common grasshopper warbler
	Common kestrel
	Common Pipistrelle
	Common snipe
	Common starling
	Common swift
	Dunnock
	Eurasian Curlew
	Eurasian woodcock
	European water vole
	Fieldfare

	Ghost moth
	Grass Snake
	Great crested newt
	Green woodpecker
	Grey mining bee
	Grey partridge
	House sparrow
	Insect hymenopteran
	Jack snipe
	Linnet
	Mallard
	Meadow pipit
	Mistle thrush
	Moss carder bee
	Mottled rustic
	Northern Lapwing
	Northern wheatear
	Pipistrelle
	Red mason bee
	Reed bunting
	Sky lark
	Slender digger wasp
	Small heath
	Small phoenix
	Small square spot
	Song thrush
	Tormentil mining bee
	Wall
	West European Hedgehog
	White ermine
	Willow tit
	Willow warbler
INV	Floating pennywort
	Japanese rose
	Montbretia
	New Zealand pigmyweed
	Nuttall's waterweed
	Parrot's feather
E/ UK PS	Barn Owl
	Bluebell
	Daubenton's bat

	European water vole
	Eurasian Badger
	Fieldfare
	Grass Snake
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Species poor semi-improved grassland
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
SI	0.55	89	
TR	0.03	5	
OTHER	0.04	6	
BPT			2
TOTALS	0.62	100	2

TR- Tall ruderal vegetation, I – Improved grassland, SI – Species poor semi-improved grassland, BPT – Bat Potential Trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	False oat grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus*, common bent *Agrostis capillaris*, red clover *Triolium pratense*, rosebay willowherb *Chamerion angustifolium*, hogweed *Heracleum sphondyllium*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* Hazel *Corylus avellana*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus*, broadleaved dock *Rumex obtusifolius*, creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare* have all been recorded within the grassland and tall ruderal vegetation.

4.3.4 Fauna

Bats

The site has 2 trees recorded during the walkover survey that could potentially support roosting bats, as they have at least one of the corresponding features including rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which develop with age. The remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are useful for foraging along flight lines and can be used for gleaning of invertebrates from species such as brown long eared and some *Myotis sp*.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees, hedgerows and possibly tall ruderal vegetation from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9426547427	Green lane

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Species poor hedgerows					x
Tall ruderal vegetation					x
Species poor grassland					x
Overall Site Importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The habitats present on site are particularly common in the UK, have fairly low biodiversity value and therefore are deemed to have a low value within the matrix.

The site is surrounded mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland immediately adjacent and very poor connectivity to the wider countryside.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species, although a great crested newt has been recorded <100m to the west in an area that appears to be terrestrial habitat. Therefore the site could potentially support roosting and foraging bats, badger and less likely terrestrial populations of great crested newt.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has mostly low biodiversity value overall in terms of area, is directly adjacent to a small domestic housing estate and species poor grasslands, and has poor connectivity to more biodiverse habitats. The site is therefore deemed as having low ecological importance in terms of its loss within the wider countryside.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- A bat survey regime to ascertain whether bats roost in the 2 trees
- Vegetation removal at the appropriate time of year

FID 11

Table of Contents

FID 11

1. Introduction

1.1Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 11 O.S grid reference SJ9420447415.

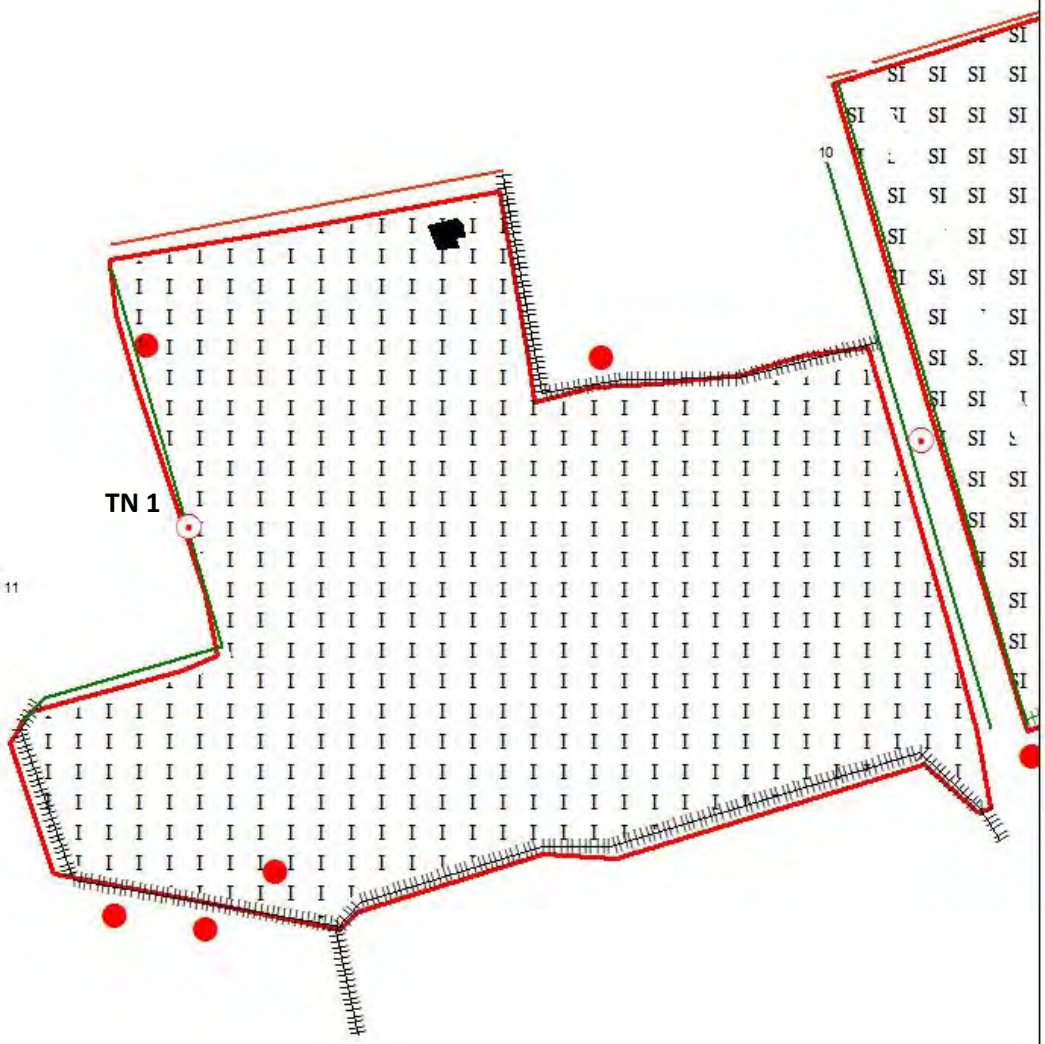
FID 11 is located in central Werrington, Staffordshire Moorlands District, surrounded by a mixture of agricultural pasture and enclosed on most sides by housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 11



Scale 1:1289

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 11 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
AWI/ BAS	Brookhouse Wood
SBI	March Lane/ Windycote Lane
SBI	Creswell's Piece

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	A true fly
	Barn Owl
	Barn swallow
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Buff ermine
	Cinnabar
	Common bullfinch
	Common Carder bee
	Common grasshopper warbler
	Common kestrel
	Common Pipistrelle
	Common snipe
	Common starling
	Common swift
	Dunnock
	Eurasian Curlew
	Eurasian woodcock
	European water vole

	Fieldfare
	Ghost moth
	Grass Snake
	Great crested newt
	Green woodpecker
	Grey mining bee
	Grey partridge
	House sparrow
	Insect hymenopteran
	Jack snipe
	Linnet
	Mallard
	Meadow pipit
	Mistle thrush
	Moss carder bee
	Mottled rustic
	Northern Lapwing
	Northern wheatear
	Pipistrelle
	Red mason bee
	Reed bunting
	Sky lark
	Slender digger wasp
	Small heath
	Small phoenix
	Small square spot
	Song thrush
	Tormentil mining bee
	Wall
	West European Hedgehog
	White ermine
	Willow tit
	Willow warbler
INV	Floating pennywort
	Japanese rose
	Montbretia
	New Zealand pigmyweed
	Nuttall's waterweed
	Parrot's feather
E/ UK PS	Barn Owl
	Bluebell

	Daubenton's bat
	European water vole
	Eurasian Badger
	Fieldfare
	Grass Snake
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Species poor grassland
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
I	0.84	93	
OTHER	0.06	7	
BPT			5
TOTALS	0.90	100	5

I – Improved grassland, BPT – Bat Potential Trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* Yorkshire fog *Holcus lanatus*,
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* holly *Ilex aquifolium*, leylandii *Cuprocypressus x leylandii*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica* Himalayan balsam *Impatiens glandulifera* and or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* have been recorded within the tall ruderal vegetation.

4.3.4 Fauna

Bats

The site has 5 trees recorded during the walkover survey could potentially support roosting bats, as they have at least one of the corresponding features associated.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees, hedgerows and possibly tall ruderal vegetation from March to August when birds in the UK normally breed.

4.3.5 Target Notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9426647423	Leylandii hedge

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Species poor hedgerows					x
Species poor grassland					x
Overall site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The habitats present on site are particularly common in the UK, have fairly low biodiversity value and therefore are deemed to have a low value within the matrix.

The site has 5 trees deemed as having potential to support roosting bats and is therefore attributed district ecological importance. The site is also surrounded mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland immediately adjacent and very poor connectivity to the wider countryside.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species, although a great crested newt has been recorded 20m to the west in an area that appears to be terrestrial habitat. Therefore the site could potentially support roosting and foraging bats, badger and terrestrial populations of great crested newt.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the 5 trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site is directly adjacent to a domestic housing estate and species poor grasslands, and has poor connectivity to more bio diverse habitats. However, the site is deemed as having district ecological importance in terms of its loss within the wider countryside due to having 5 trees that have potential to support roosting bats.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- A bat survey regime to ascertain whether bats roost in the trees
- Vegetation removal at the appropriate time of year

FID 12

Table of Contents

FID 12

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 12 O.S grid reference SJ9403047302 .

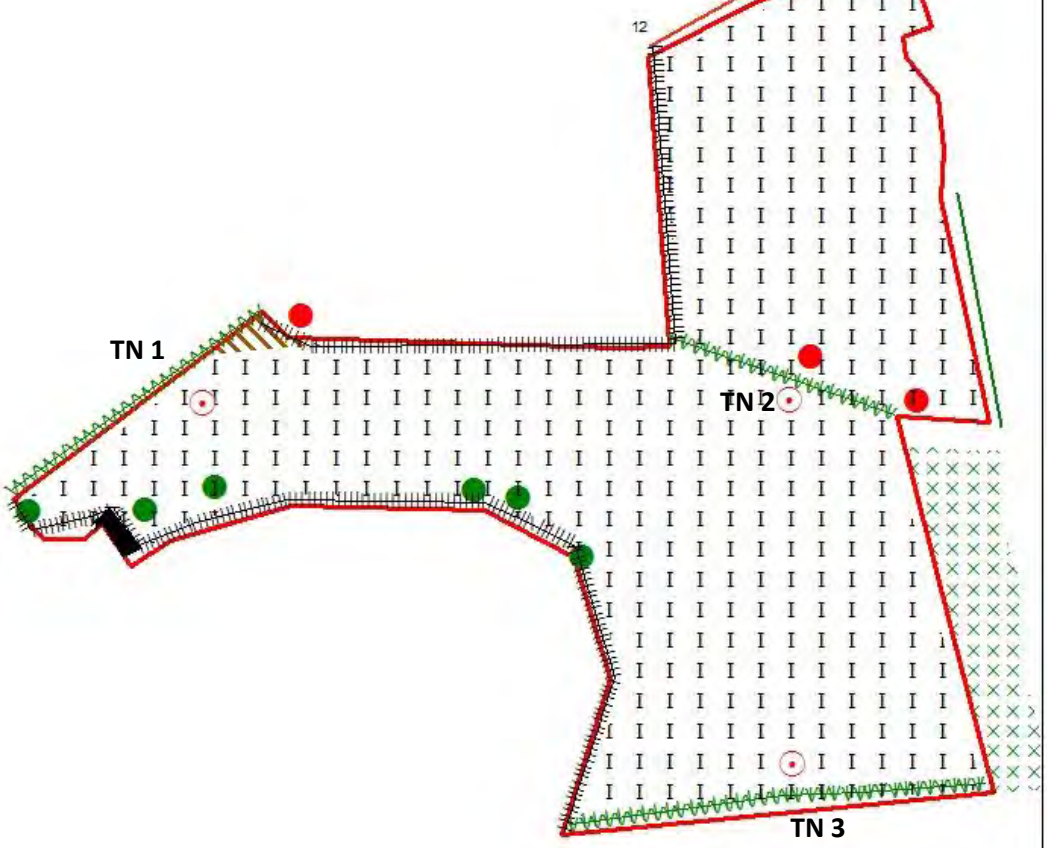
FID 12 is located south of Werrington village, approximately 3km east of Stoke on Trent in the Staffordshire Moorlands District, surrounded mainly by housing and agricultural pasture.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 12



Scale 1:2690

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 12 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 *Desk study*

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
AWI/ BAS	Brookhouse Wood
SBI	Parkhall Country Park
SBI	Creswell's Piece

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	A true fly
	Barn Owl
	Barn swallow
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Buff ermine
	Cinnabar
	Common bullfinch
	Common Carder bee
	Common grasshopper warbler
	Common kestrel
	Common Pipistrelle
	Common snipe
	Common starling
	Common swift
	Dunnock
	Eurasian Curlew
	Eurasian woodcock
	European water vole

	Fieldfare
	Ghost moth
	Great crested newt
	Green woodpecker
	Grey mining bee
	Grey partridge
	House sparrow
	Insect hymenopteran
	Jack snipe
	Linnet
	Mallard
	Meadow pipit
	Mistle thrush
	Moss carder bee
	Mottled rustic
	Northern Lapwing
	Northern wheatear
	Pipistrelle
	Red mason bee
	Reed bunting
	Sky lark
	Slender digger wasp
	Small heath
	Small phoenix
	Small square spot
	Song thrush
	Tormentil mining bee
	Wall
	West European Hedgehog
	White ermine
	Willow tit
	Willow warbler
INV	Floating pennywort
	Indian balsam
	Japanese rose
	Montbretia
	New Zealand pygmyweed
	Nuttall's waterweed
	Parrot's feather
E/ UK PS	Barn Owl
	Bluebell

	Daubenton's bat
	European water vole
	Eurasian Badger
	Fieldfare
	Grass Snake
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species rich hedgerows
- Species poor hedgerows
- Scattered trees
- Species poor grassland
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
I	2.68	99	
TR	0.01	<1	
OTHER	0.02	<1	
BPT			3
TOTALS	2.71	100	3

I – Improved grassland, TR – Tall ruderal vegetation, BPT – Bat potential trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	False oat grass *Arrhenatherum elatius*, cock's foot *Dactylis glomerata*, common nettle *Urtica dioica*, rosebay willowherb *Chamerion angustifolium*
Hedgerows/ trees	Hawthorn *Crataegus monogyna,* elder *Sambucus nigra*, bramble *Rubus fruticosus agg*

Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* have been recorded within the tall ruderal vegetation.

4.3.4 Fauna

Bats

The site has 3 trees recorded during the walkover survey that could potentially support roosting bats.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees, hedgerows and possibly tall ruderal vegetation from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9389047312	Requires hedgerow survey
2	SJ9404247311	Requires hedgerow survey
3	SJ9403947207	Requires hedgerow survey

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Species rich hedgerows				x	
Species poor hedgerows					x
Species poor grassland					x
Overall site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland immediately adjacent and relatively poor connectivity to the wider countryside.

The hedgerows have up to 6 native species present and 3 trees with potential to support roosting bats therefore warrants the site being classed overall as having district ecological importance. Whilst the remaining habitats present on site are particularly common in the UK, have fairly low biodiversity value and therefore are deemed to have a low value within the matrix.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species, although a great crested newt has been recorded 40m to the north east in an area that appears to be terrestrial habitat. Therefore the site could potentially support roosting and foraging bats, badger and terrestrial populations of great crested newt.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Species rich hedgerows

The Hedgerows Regulations 1997 were made under section 97 of the Environment Act 1995 and came into force on 1 June 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification.

Therefore it is recommended that a hedgerow survey be carried out on the 2 hedgerows by an appropriately qualified ecologist to determine whether they qualify as a species rich hedgerow according to hedgerow qualification criteria applicable to the Staffordshire Moorlands area.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has mostly low biodiversity value overall in terms of area, is directly adjacent to a domestic housing estate and species poor grasslands. The site has some connectivity to more biodiverse adjacent habitats such as scattered trees, tall ruderal vegetation and hedgerows to the south and scattered scrub to the south east. The site is deemed as having district ecological importance in terms of its loss within the wider countryside due to the presence of species rich hedgerows and trees with bat roosting potential.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- A bat survey regime to ascertain whether bats roost in the trees
- Hedgerow survey
- Vegetation removal at the appropriate time of year

FID 13

Table of Contents

FID 13

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 13 O.S grid reference SJ9397447574.

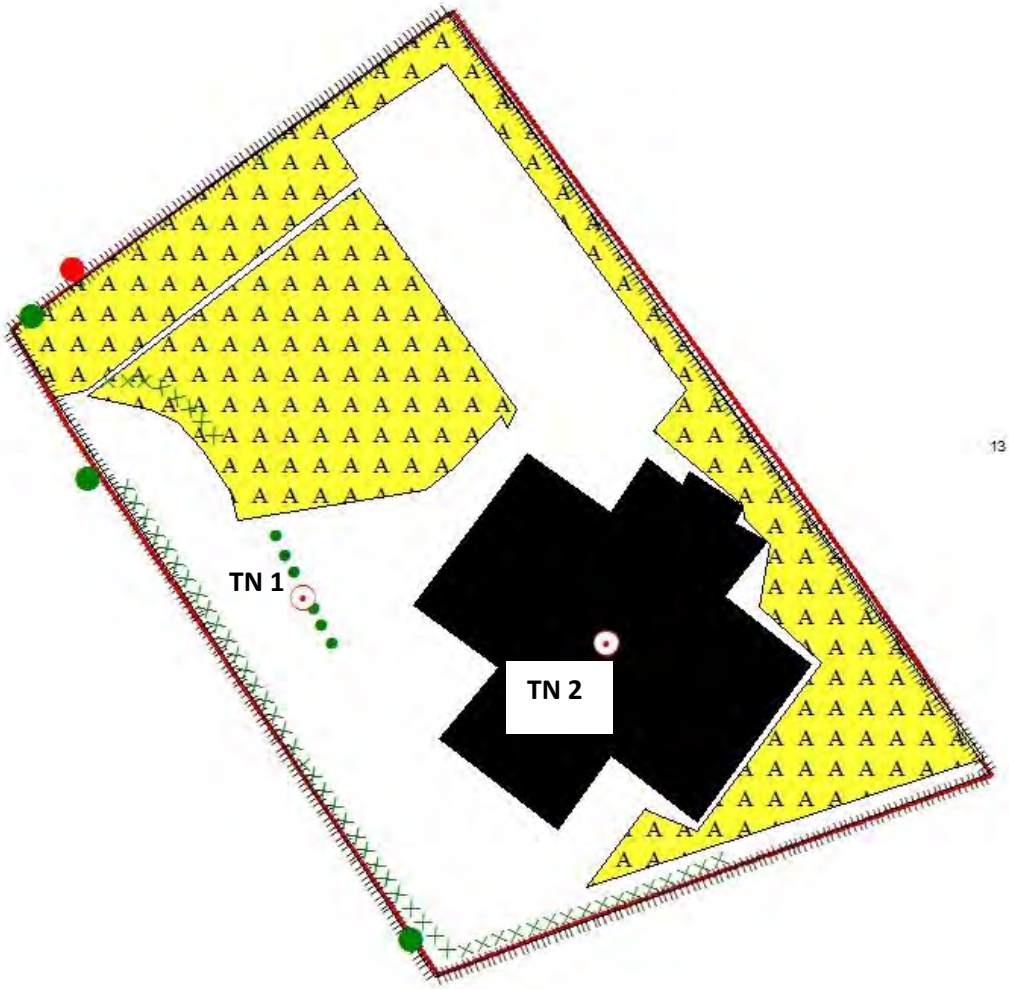
FID 13 is located within Werrington village and is approximately 3km from Stoke on Trent in the Staffordshire Moorlands District, completely surrounded by housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 13



Scale 1:1240

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 13 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
AWI/ BAS	Brookhouse Wood
SBI	Creswell's Piece

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	Barn Owl
	Barn swallow
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Buff ermine
	Common bullfinch
	Common Carder bee
	Common grasshopper warbler
	Common kestrel
	Common Pipistrelle
	Common snipe
	Common starling
	Common swift
	Dunnock
	Eurasian Curlew
	European water vole
	Fieldfare
	Ghost moth
	Great crested newt
	Grey mining bee
	Grey partridge

	House sparrow
	Insect hymenopteran
	Jack snipe
	Linnet
	Mallard
	Meadow pipit
	Mistle thrush
	Moss carder bee
	Northern Lapwing
	Northern wheatear
	Pipistrelle
	Red mason bee
	Reed bunting
	Sky lark
	Slender digger wasp
	Small heath
	Song thrush
	Tormentil mining bee
	Wall
	West European Hedgehog
	White ermine
	Willow tit
	Willow warbler
INV	Floating pennywort
	Indian balsam
	Japanese rose
	Montbretia
	New Zealand pigmyweed
	Nuttall's waterweed
	Parrot's feather
E/ UK PS	Barn Owl
	Bluebell
	Daubenton's bat
	European water vole
	Eurasian Badger
	Fieldfare
	Grass Snake
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Building
- Scattered trees
- Scattered scrub
- Species poor amenity grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
AM	0.30	63	
OTHER	0.51	37	
BPT	0.00		1
TOTALS	0.81	100	1

AM - Amenity grassland, BPT – Bat Potential Trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Annual meadow grass *Poa annua*
Hedgerows/ trees/ SCRUB	Hawthorn *Crataegus monogyna,* ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

4.3.4 Fauna

Bats

The site has 1 large derelict former school building that appears to have some loose roof tiles and potential entrances that could allow bats to roost. There is also 1 tree recorded in the walkover survey that could potentially support roosting bats, as it had at least one of the corresponding features.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees, hedgerows and possibly tall ruderal vegetation from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9395347558	Scattered oak, ash, hawthorn, sycamore, wild cherry, silver birch and alder
2	SJ9399447558	Bat survey needed

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Scattered scrub					x
Species poor amenity grassland					x
Overall potential site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by habitats of low biodiversity value, with domestic dwellings encompassing the site and hence very poor connectivity to the wider countryside.

The habitats present on site are particularly common in the UK, have low biodiversity value but are deemed to have a potentially relatively low value within the matrix. However, the presence of a tree with bat roosting potential increases the ecological importance of the site to district value.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include roosting bats.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Access

It is recommended that access is given to a suitably qualified ecologist prior to development to fully scope the area in line with the Extended Phase 1 Habitat guidelines, particularly to ascertain whether Japanese knotweed or other invasive species are present on site.

Buildings with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the building should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that the building is checked for the presence of breeding birds at the same time as the bat surveys.

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the tree recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has mostly low biodiversity value overall, is set within an urban environment with little connectivity to the wider countryside which lowers the biodiversity of the area considerably. However the site has been given a district important ecological value in terms of its loss within the wider countryside as the building and tree could support roosting bats.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- A bat survey regime is therefore recommended to ascertain whether bats roost in the building
- Vegetation removal at the appropriate time of year

FID 15

Table of Contents

FID 15

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 15 O.S grid reference SJ9339547874.

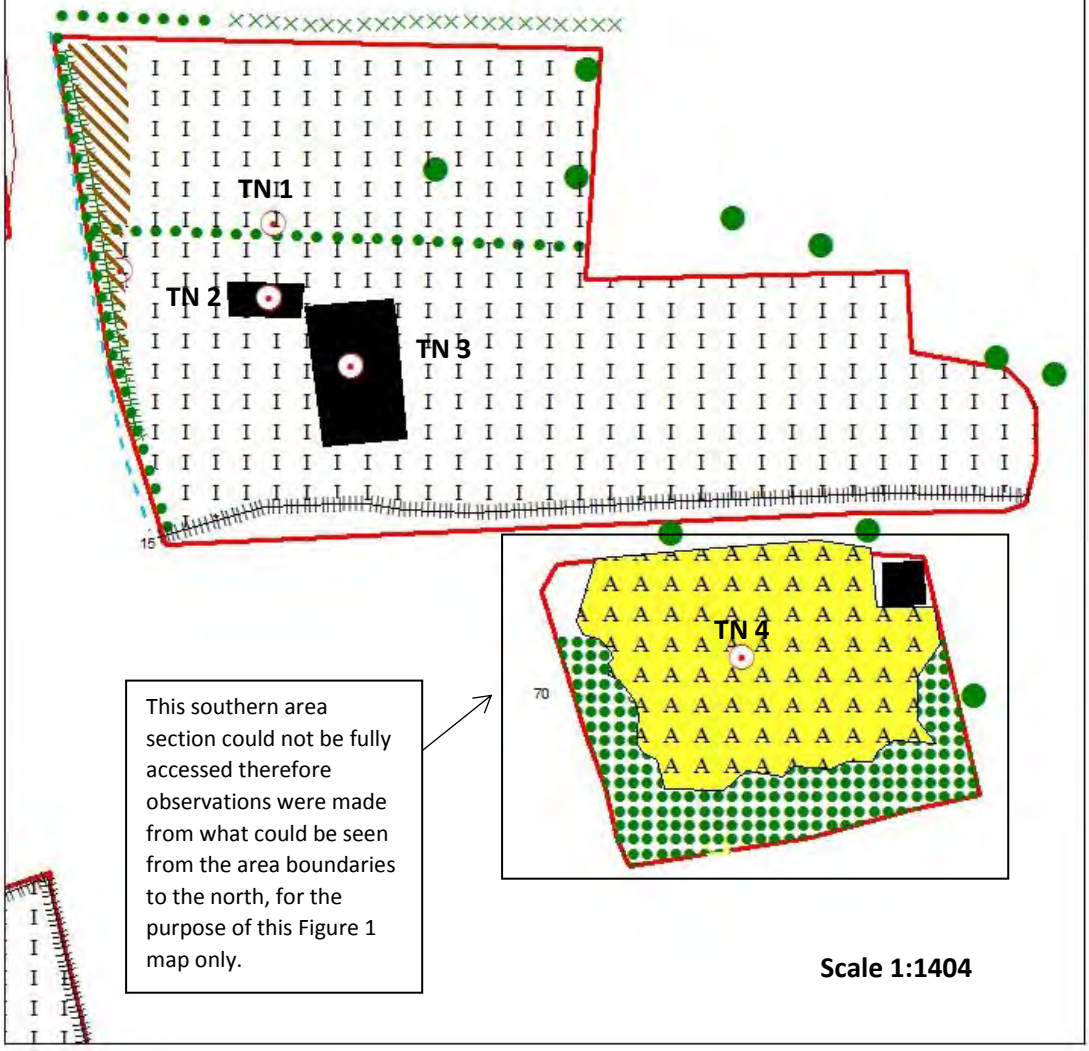
FID 15 is located north of Werrington village, approximately 2.5km east of Stoke on Trent in the Staffordshire Moorlands District, and is surrounded by housing and agricultural land.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 15



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 15 during September and October 2014 according to JNCC (2007) guidelines.

However, the southern section as shown in Figure 1 could not be accessed. Therefore the whole of this report in its entirety refers to the northern section only. The graphic representation of the southern section as shown within Figure 1 are assumptions of habitat types gleaned from observations made through binoculars from the boundary to the north and aerial photography.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders

submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Only the northern section as shown in Figure 1 and as discussed in Section 2.1 has been fully surveyed and therefore independently considered for this report from the southern section. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
AWI	UNK
AWI/ BAS	Brookhouse Wood
SBI	Holehouse (north east of)

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	Barn Owl
	Barn swallow
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Common bullfinch
	Common Carder bee
	Common grasshopper warbler
	Common kestrel
	Common Pipistrelle
	Common snipe
	Common starling
	Dunnock
	Eurasian Curlew
	European water vole
	Fieldfare
	Freshwater White clawed crayfish
	Ghost moth
	Great crested newt
	Grey mining bee
	House sparrow

	Insect hymenopteran
	Jack snipe
	Linnet
	Mallard
	Meadow pipit
	Mistle thrush
	Moss carder bee
	Northern Lapwing
	Northern wheatear
	Pipistrelle
	Red mason bee
	Reed bunting
	Sky lark
	Slender digger wasp
	Small heath
	Song thrush
	Tormentil mining bee
	Wall
	West European Hedgehog
	Willow warbler
INV	Floating pennywort
	Indian balsam
	Japanese rose
	Montbretia
	New Zealand pygmyweed
	Nuttall's waterweed
	Parrot's feather
E/ UK PS	Barn Owl
	Bluebell
	Daubenton's bat
	European water vole
	Eurasian Badger
	Fieldfare
	Freshwater white clawed crayfish
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Building x2
- Scattered trees
- Scattered scrub
- Species poor amenity grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	0.64	87
TR	0.02	3
OTHER	0.07	10
TOTALS	0.73	100

TR- Tall ruderal vegetation, I – Improved grassland,

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Annual meadow grass *Poa annua,* False oat grass *Arrhenatherum elatius*, rosebay willowherb *Chamerion angustifolium*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* hazel *Corylus avellana*, alder *Alnus glutinosa*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

4.3.4 Fauna

Bats

The site has 2 new corrugated metal buildings that have very low potential to support bats.

Trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees, hedgerows and possibly tall ruderal vegetation from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9334947898	Line of alder
2	SJ9335147886	Bat survey not required
3	SJ9336447874	Bat survey not required

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees					x
Scattered scrub					x
Species poor grassland					x
Overall site importance			x		
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by habitats of low-medium biodiversity value, with domestic dwellings encompassing the site to the south but also connecting to more interesting areas of scrub, hedgerows and rough/ tall ruderal vegetation to the east which forms part of Wetley Moor SSSI.

The habitats present on site are considered particularly common in the UK, have low biodiversity value and therefore are deemed to have a low value within the matrix. However, the very large Wetley Moors SSSI is present <60m to the north east which elevates the sites status considerably to being deemed to have Regional ecological importance, especially as it is fairly well connected.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include foraging badger and bats.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Buildings with bat potential

The buildings on site are deemed to have very low potential to support roosting bats so are therefore not required to be surveyed.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site itself has mostly low biodiversity value overall with fairly good connectivity to Wetley Moor SSSI and is deemed as having Regional ecological importance in terms of its loss within the wider countryside due to its close proximity to the SSSI.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Vegetation removal at the appropriate time of year

FID 16

Table of Contents

FID 16

1. Introduction

1.1 Background

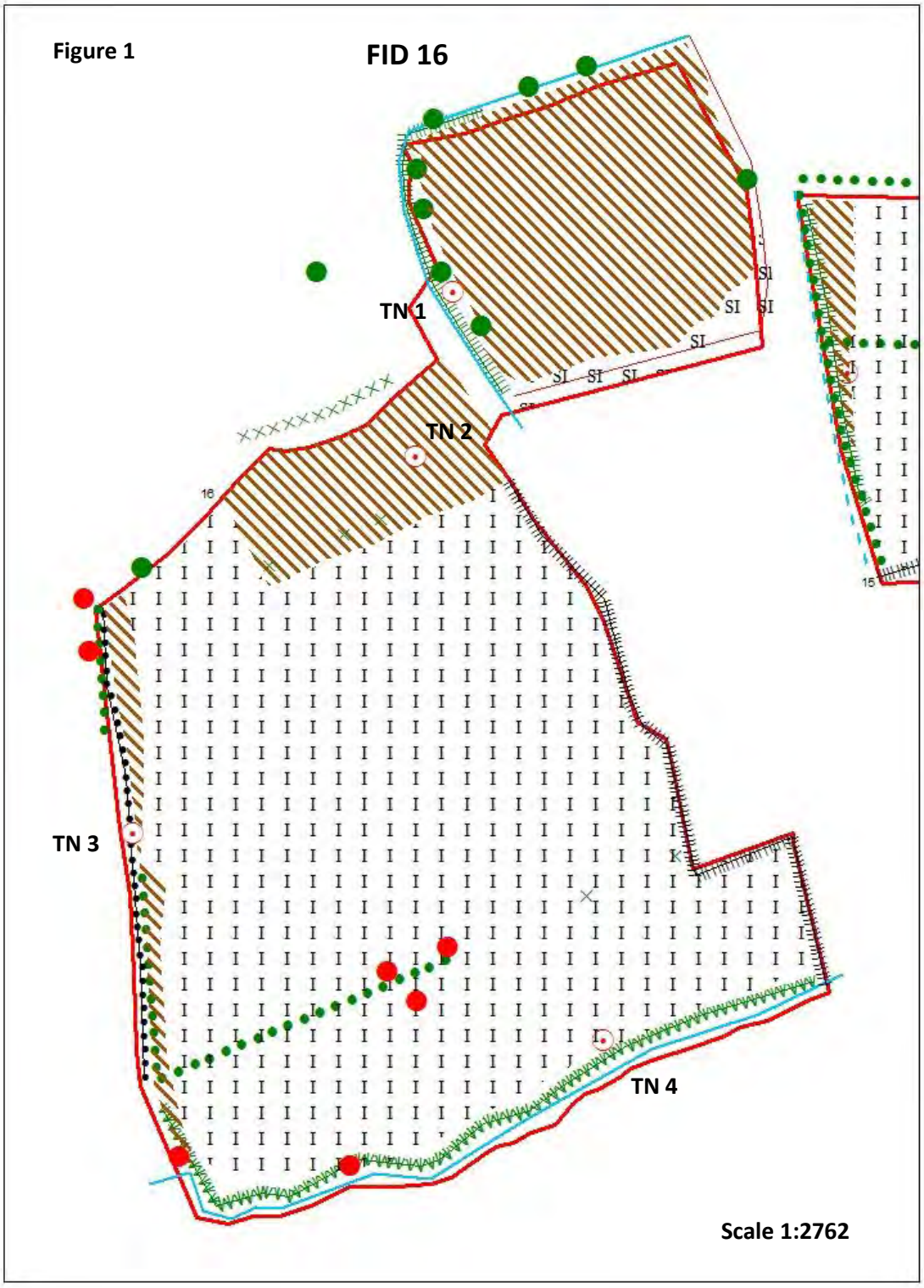
The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 16 O.S grid reference SJ9324147850.

FID 16 is located north of Werrington village, approximately 2km from Stoke on Trent in the Staffordshire Moorlands District, surrounded by farm buildings, agricultural land and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 16 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
AWI	UNK
AWI/ BAS	Brookhouse Wood
SBI	Parkhall Country Park
SBI	Holehouse (north east of)

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	Barn Owl
	Barn swallow
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Common bullfinch
	Common Carder bee
	Common grasshopper warbler
	Common kestrel
	Common Pipistrelle
	Common snipe
	Common starling
	Dunnock
	Eurasian Curlew
	European water vole
	Fieldfare
	Freshwater White clawed crayfish
	Ghost moth
	Great crested newt
	Grey mining bee

	House sparrow
	Insect hymenopteran
	Jack snipe
	Linnet
	Mallard
	Meadow pipit
	Mistle thrush
	Moss carder bee
	Northern Lapwing
	Northern wheatear
	Pipistrelle
	Red mason bee
	Reed bunting
	Sky lark
	Slender digger wasp
	Small heath
	Song thrush
	Tormentil mining bee
	Wall
	West European Hedgehog
	Willow warbler
INV	Floating pennywort
	Indian balsam
	Japanese rose
	Montbretia
	New Zealand pygmyweed
	Nuttall's waterweed
	Parrot's feather
E/ UK PS	Barn Owl
	Bluebell
	Daubenton's bat
	European water vole
	Eurasian Badger
	Fieldfare
	Freshwater white clawed crayfish
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species rich hedgerows
- Scattered trees
- Scattered scrub
- Species poor amenity grassland

Table 3

HABITAT	AREA (HECTARES to 2 d. p.)	PERCENTAGE (%)	NUMBER
I	1.16	66	
TR	0.45	25	
OTHER	0.16	9	
BPT	0.00		7
TOTALS	1.77	100	7

TR- Tall ruderal vegetation, I – Improved grassland, BPT – Bat Potential Trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* False oat grass *Arrhenatherum elatius*, great willowherb *Epilobium hirsutum*, bramble *Rubus fruticosus*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* alder *Alnus glutinosa,* goat willow *Salix caprea*, sycamore *Acer pseudoplatanus*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to

nest in areas of scattered trees, hedgerows and possibly tall ruderal vegetation from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9325347901	Large area of tall ruderal vegetation suitable for foraging owls
2	SJ9324147878	Tall ruderal vegetation with derelict cars tyres and farm equipment
3	SJ9318747803	Hedgerow survey
4	SJ9328347757	Hedgerow survey

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Species rich hedgerow				x	
Scattered trees				x	
Tall ruderal vegetation				x	
Species poor grassland					x
Overall site importance			x		
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by habitats of low-medium biodiversity value, with domestic dwellings encompassing the site to the south east but also connecting to more biodiverse areas of scrub, hedgerows and rough/ tall ruderal vegetation adjacent to the south west.

The species rich hedgerow and trees with bat potential and are considered to have district ecological importance and hence the overall site importance. The tall ruderal vegetation to the north east although species poor is 1.25ha's in size which is significant to potentially support ground nesting birds and possibly foraging barn owl *Tyto alba* and potentially a range of other species. Furthermore, the very large Wetley Moors SSSI is present <75m to the north which elevates the overall sites status considerably to being deemed to have Regional ecological importance, especially as it is fairly well connected.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include roosting/ foraging bats and badger.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010. Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the 7 trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Species rich hedgerows

The Hedgerows Regulations 1997 were made under section 97 of the Environment Act 1995 and came into force on 1 June 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification.

Therefore it is recommended that a hedgerow survey be carried out on the hedgerow by an appropriately qualified ecologist to determine whether they qualify as a species rich hedgerow according to hedgerow qualification criteria applicable to the Staffordshire Moorlands area.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site itself has 7 trees with bat potential, species rich hedgerow and a large area of tall ruderal vegetation connected to a series of other hedgerows and habitats. These features culminate in the assessment that the site is deemed as have district ecological importance in terms of its loss within the wider countryside.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- A bat survey regime to ascertain whether bats roost in the trees
- Hedgerow surveys
- Vegetation removal at the appropriate time of year

FID 71

Table of Contents

FID 71

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 71 O.S grid reference SJ9442747877.

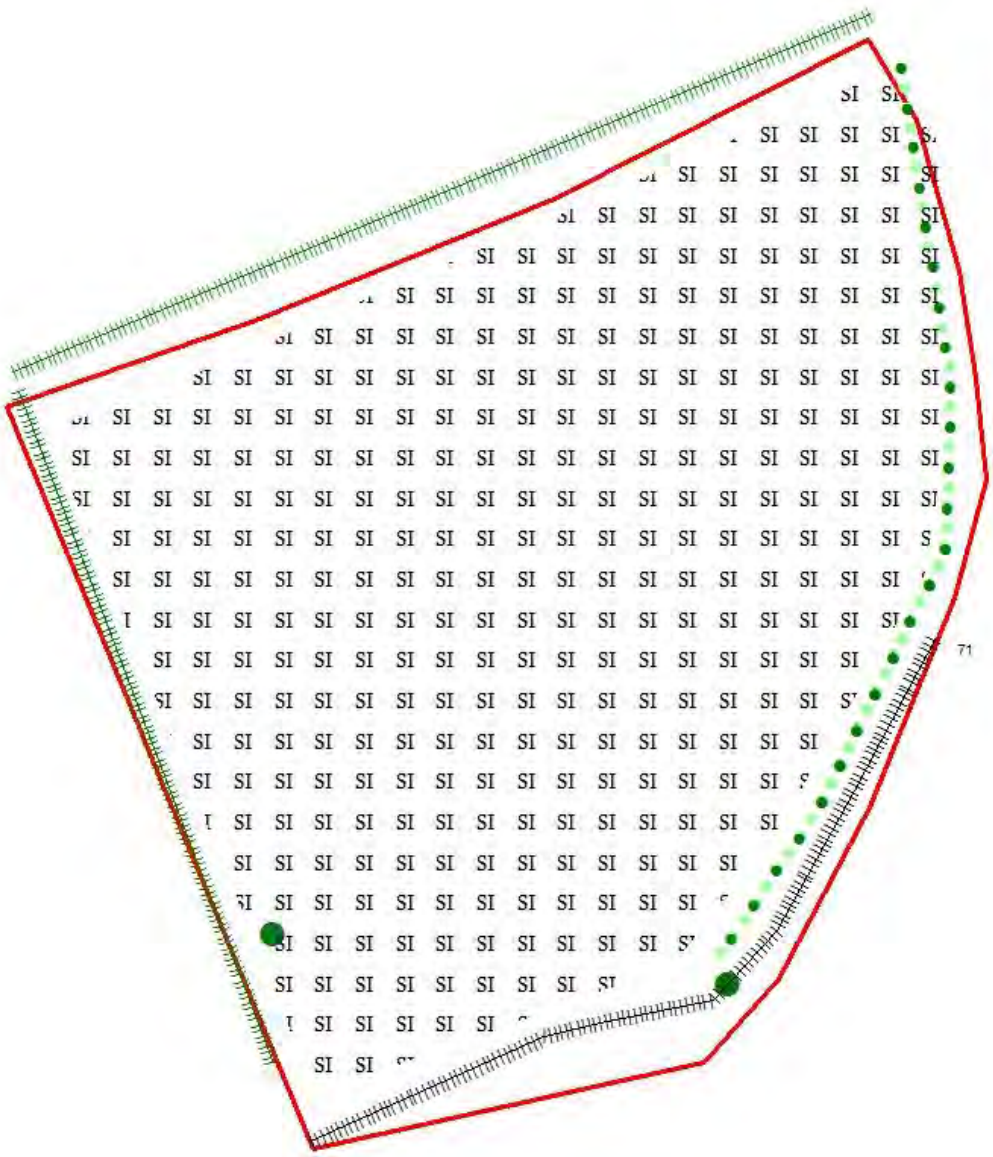
FID 71 is located east of Werrington village in the Staffordshire Moorlands District, surrounded by housing and agricultural land.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 71



Scale 1:769

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 71 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
SBI	March Lane/ Windycote Lane
SBI	Creswell's Piece

SSSI – Site of Scientific Interest, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	A true fly
	Autumnal rustic
	Barn Owl
	Barn swallow
	Black headed velvet ant
	Brown Hare
	Buff tailed bumble bee
	Buff ermine
	cinnabar
	Common bullfinch
	Common Carder bee
	Common kestrel
	Common Pipistrelle
	Common snipe
	Common starling
	Common swift
	Dunnock
	Eurasian Curlew
	Eurasian woodcock
	Ghost moth
	Grass Snake
	Great crested newt

	Green woodpecker
	Grey mining bee
	Grey partridge
	House sparrow
	Insect hymenopteran (x16 individual species)
	Jack snipe
	Linnet
	Mallard
	Meadow pipit
	Mistle thrush
	Moss carder bee
	Mottled rustic
	Northern Lapwing
	Northern wheatear
	Pipistrelle
	Red mason bee
	Reed bunting
	Sky lark
	Slender digger wasp
	Small heath
	Small phoenix
	Small square spot
	Tormentil mining bee
	Wall
	West European Hedgehog
	White ermine
	Willow tit
	Willow warbler
INV	Floating pennywort
	Japanese rose
	Montbretia
	New Zealand pigmyweed
	Parrot's feather
E/ UK PS	Barn Owl
	Bluebell
	Common pipistrelle
	Daubenton's bat
	Eurasian Badger

	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, EPS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Species poor grassland
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
SI	0.17	78
OTHER	0.05	22
TOTALS	0.22	100

SI – Semi-improved grassland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Yorkshire fog *Holcus lanatus*, creeping thistle *Cirsium arvense,* ribwort plantain, *Plantago lanceolata*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* elder *Sambucus nigra*, Scot's pine *Pinus sylvestris*, beech *Fagus sylvatica*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including creeping thistle have been recorded within the grassland and tall ruderal vegetation.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees and hedgerow from March to August when birds in the UK normally breed.

5. Evaluation

Table 5

Habitat	**Ecological Importance**				
	I	**N**	**R**	**D**	**L**
Scattered trees					x
Species poor hedgerows					x
Species poor grassland					x
Overall site importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 5 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland immediately adjacent and very poor connectivity to the wider countryside.

The habitats present on site are particularly common in the UK, have low biodiversity value and therefore are deemed to have a low value within the matrix.

Despite a number of European and UK protected species being recorded (great crested newt has been recorded 270m away to the west) within 2km it is unlikely that the site would support most of the species apart from foraging bats and badger.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has low biodiversity value overall in terms of area and is directly adjacent to a small domestic housing estate and species poor grasslands, it also has poor connectivity to more biodiverse habitats and therefore is considered to have low ecological value.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Vegetation removal at the appropriate time of year

FID 214

Table of Contents

FID 214

1. Introduction

1.1 Background

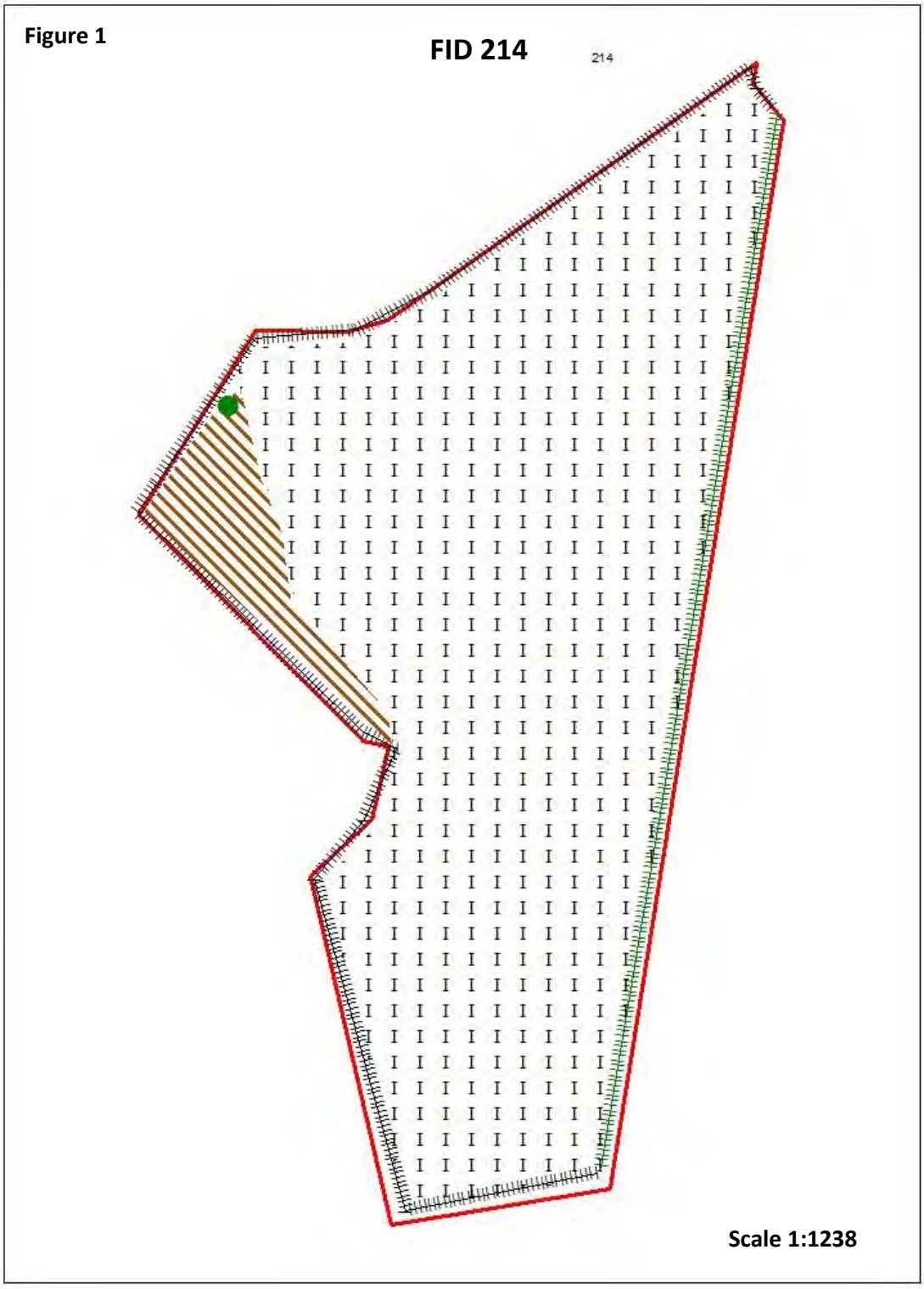
The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 214 O.S grid reference SJ9571947337.

FID 214 is located east of Werrington village surrounded by agricultural land and farm buildings.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 214 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
AWI	Consall Wood
AWI	Little Above Park
AWI	Grangewood
BAS	Platt (north of)
BAS	Heywood Grange Wood
SBI	March Lane/ Windycote Lane
SBI	Creswell's Piece
SBI	Dairyhouse Lane Wood
SBI	Consall Scout Camp

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A bumble bee
	A flowering plant
	A true fly
	Argent and sable
	Autumnal rustic
	Barn Owl
	Barn swallow
	Brown Hare
	Buff ermine
	Cinnabar
	Common bullfinch
	Common Carder bee
	Common kestrel
	Common Pipistrelle
	Common starling

	Common swift
	Dingy skipper
	Dunnock
	Dyer's greenweed
	Eurasian Curlew
	Eurasian woodcock
	European water vole
	Field cuckoo bee
	Ghost moth
	Grass Snake
	Great crested newt
	Green woodpecker
	Grey partridge
	House sparrow
	Lesser spotted woodpecker
	Little kneeling eyebright
	Mistle thrush
	Monk's rhubarb
	Mottled rustic
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small heath
	Small phoenix
	Small square spot
	West European Hedgehog
	White ermine
	Willow warbler
INV	American mink
	Japanese rose
E/ UK PS	Barn Owl
	Bluebell
	Common pipistrelle
	Daubenton's bat
	European water vole
	Eurasian Badger
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Scattered trees
- Tall ruderal vegetation
- Species poor hedgerow
- Species poor improved grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	0.80	95
TR	0.05	5
TOTAL	0.85	100

TR- Tall ruderal vegetation, I – Improved grassland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* cock's foot *Dactylis glomerata*, common nettle *Urtica dioica*, white clover *Trifolium repens,* curled dock *Rumex crispus*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* sycamore *Acer pseudoplatanus,* bramble *Rubus fruticosus agg,* elder *Sambucus nigra*,

4.3.3 Invasive weeds

No species listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found within the site at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock, and creeping thistle *Cirsium arvense* were recorded within the site.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds could potentially nest in areas of scattered trees and hedgerow from March to August when birds in the UK normally breed.

5. Evaluation

Table 5

Habitat	Ecological Importance				
	I	N	R	D	L
Species poor hedgerow					x
Scattered trees					x
Species poor grassland					x
Overall site importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 5 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by species poor grasslands and industrial buildings which are connected by 2 hedgerows to the surrounding countryside.

The habitats present on site include mainly improved species poor grassland (95%) with a species poor hedgerow consisting of hawthorn, elder and sycamore. Tall ruderal vegetation includes curled dock, great willowherb *Epilobium hirsutum* and common nettle.

The site has low biodiversity value overall, therefore it is unlikely that the site would support many European and UK protected species that have been recorded within 2km, but could potentially include foraging bats, badger and brown hare (recorded within 200m), therefore the site is attributed low ecological importance.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If the trees, hedgerow and tall ruderal vegetation are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has species poor habitats present on site and low potential to support protected species, therefore is attributed low ecological importance.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Vegetation removal at the appropriate time of year

FID 215

Table of Contents

FID 215

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 215 O.S grid reference SJ9552047156.

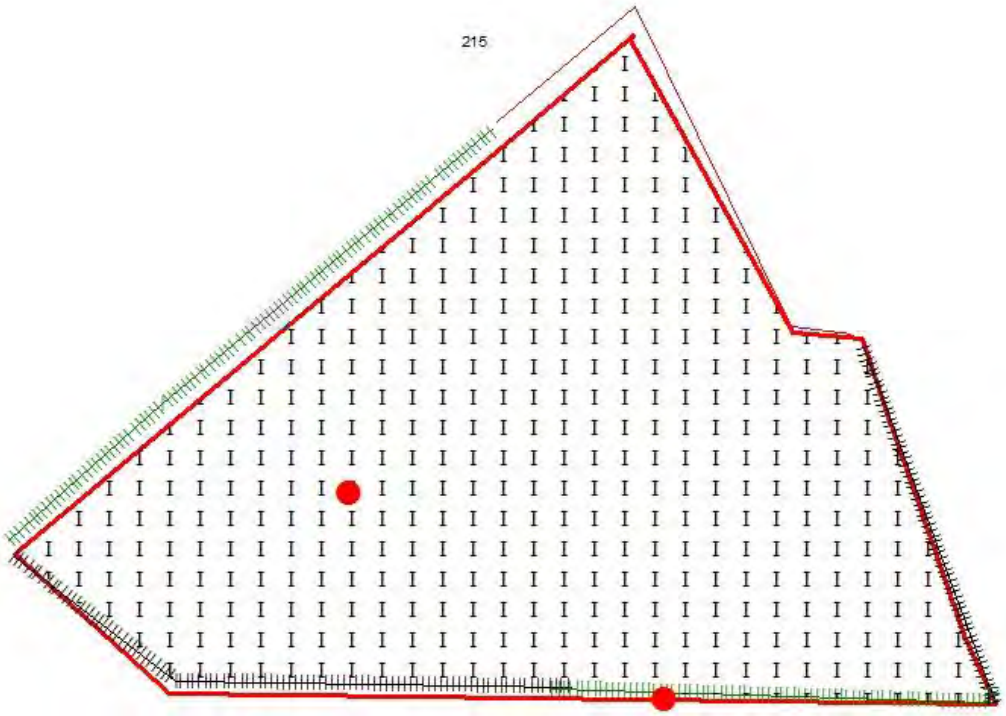
FID 215 is located south east of Werrington village surrounded by agricultural land and commercial/industrial premises.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 215



Scale 1:1628

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 215 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Wetley Moor
AWI	Consall Wood
AWI	Little Above Park
AWI	Grangewood
BAS	Platt (north of)
BAS	Heywood Grange Wood
SBI	March Lane/ Windycote Lane
SBI	Creswell's Piece
SBI	Dairyhouse Lane Wood

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A bumble bee
	A flowering plant
	A true fly
	Argent and sable
	Autumnal rustic
	Barn Owl
	Barn swallow
	Brown Hare
	Buff ermine
	Cinnabar
	Common bullfinch
	Common Carder bee
	Common kestrel
	Common Pipistrelle
	Common starling
	Common swift

	Dingy skipper
	Dunnock
	Dyer's greenweed
	Eurasian Curlew
	Eurasian woodcock
	European water vole
	Field cuckoo bee
	Ghost moth
	Grass Snake
	Great crested newt
	Green woodpecker
	Grey partridge
	House sparrow
	Lesser spotted woodpecker
	Little kneeling eyebright
	Mistle thrush
	Monk's rhubarb
	Mottled rustic
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small heath
	Small phoenix
	Small square spot
	West European Hedgehog
	White ermine
	Willow warbler
	Yellowhammer
INV	American mink
	Japanese rose
E/ UK PS	Barn Owl
	Bluebell
	Common pipistrelle
	Daubenton's bat
	European water vole
	Eurasian Badger
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Scattered trees
- Species poor hedgerow
- Species poor improved grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
I	1.04	98	
OTHER	0.03	2	
BPT			2
TOTAL	1.06	100	2

I – Improved grassland, BPT – Bat Potential Trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, common nettle *Urtica dioica*, self-heal *Prunella vulgaris*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* bramble *Rubus fruticosus agg,* elder *Sambucus nigra*,

4.3.3 Invasive weeds

No species listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found within the site at the time of survey.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds could potentially nest in areas of scattered trees and hedgerow from March to August when birds in the UK normally breed.

5. Evaluation

Table 5

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Species poor hedgerow					x
Species poor grassland					x
Overall site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 5 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by species poor grasslands and industrial buildings which are connected by 1 hedgerow to the surrounding countryside.

The habitats present on site include mainly improved species poor grassland (98%) consisting mainly of perennial rye grass with a species poor hedgerow consisting of hawthorn, elder and sycamore *Acer pseudoplatanus*.

The site has low biodiversity value overall, therefore it is unlikely that the site would support many European and UK protected species that have been recorded within 2km, but could potentially include foraging bats and badger. The site has been deemed to have district ecological importance due to the presence of 2 trees that have potential to support roosting bats.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the 2 trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If the trees, hedgerow and tall ruderal vegetation are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has species poor habitats present on site, but is attributed district importance due to the potential of 2 trees to support roosting bats.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Bat survey of the 2 trees deemed to have potential to support roosting bats
- Vegetation removal at the appropriate time of year

FID 216

Table of Contents

FID 216

1. Introduction

1.1 Background

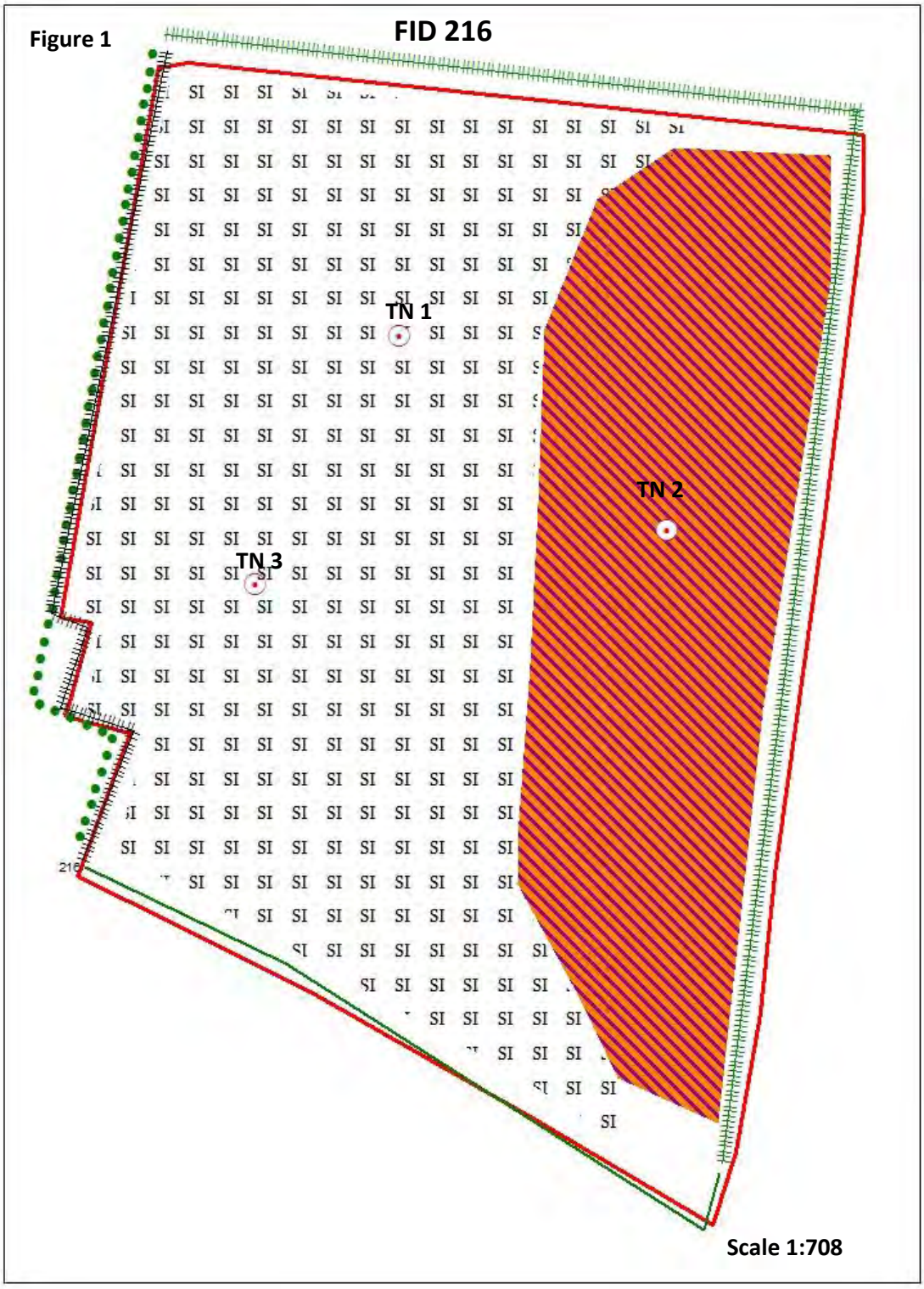
The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 216 O.S grid reference SJ9580147597.

FID 216 is located east of Werrington village surrounded by agricultural land and industrial/commercial buildings.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 216 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
AWI	Consall Wood
AWI	Little Above Park
AWI	Grangewood
BAS	Platt (north of)
BAS	Heywood Grange Wood
SBI	Wetley Rocks
SBI	March Lane/ Windycote Lane
SBI	Creswell's Piece
SBI	Dairyhouse Lane Wood
SBI	Consall Scout Camp

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A bumble bee
	A flowering plant
	A true fly
	Autumnal rustic
	Barn Owl
	Brown Hare
	Buff ermine
	Cinnabar
	Common bullfinch
	Common Carder bee
	Common kestrel
	Common Pipistrelle
	Common starling
	Common swift

	Dunnock
	Dyer's greenweed
	Eurasian Curlew
	Eurasian woodcock
	European water vole
	Ghost moth
	Great crested newt
	Green woodpecker
	House sparrow
	Lesser spotted woodpecker
	Little kneeling eyebright
	Mistle thrush
	Mottled rustic
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small heath
	Small phoenix
	Small square spot
	West European Hedgehog
	White ermine
	Willow warbler
INV	American mink
	Japanese rose
E/ UK PS	Barn Owl
	Bluebell
	Common pipistrelle
	European water vole
	Eurasian Badger
	Great crested newt
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Scattered trees
- Species poor hedgerow
- Marshy grassland
- Species poor semi-improved grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
SI	0.34	68
MG	0.17	32
TOTALS	0.51	100

SI – Semi-improved species poor grassland, MG – Marshy grassland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	False oat grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, common nettle *Urtica dioica,* tufted hair grass *Deschampsia cespitosa,* sweet vernal grass *Anthoxanthum odoratum,* soft rush *Juncus effusus,* creeping bent *Agrostis stolonifera*, common knapweed *Centaurea nigra*
Hedgerows/ trees/ scrub	Alder *Alnus glutinosa,* hawthorn *Crataegus monogyna,* sycamore *Acer pseudoplatanus,* bramble *Rubus fruticosus agg,* garden privet *Ligustrum sp,* holly *Ilex aquifolium*

4.3.3 Invasive weeds

No species listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found within the site at the time of survey.

Weeds listed under the Weeds Act 1959 including creeping thistle *Cirsium arvense*, curled dock *Rumex crispus* and broadleaved dock *Rumex obtusifolius* have been recorded within the site.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds could potentially nest in areas of scattered trees and hedgerow from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9579347614	Species poor grassland with occasional patches of diversity
2	SJ9577947594	Earth pile
3	SJ9581547592	Grassland with sparsely marshy grassland flora

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees					x
Species poor hedgerow					x
Species poor grassland					x
Marshy grassland					x
Overall site importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by species poor grasslands and domestic dwellings which are connected by 1 hedgerow to the surrounding countryside.

The habitats present on site include mainly semi-improved mainly species poor grassland (68%) consisting of mainly grasses including tufted hair grass, cock's foot, false oat grass, creeping bent and herbs including creeping buttercup *Ranunculus repens*, common knapweed and cleavers *Galium aparine.* The marshy grassland contains patchy diversity with soft rush, compact rush *Juncus articulatus*, occasional greater bird's foot trefoil *Lotus pedunculatus*, common nettle *Urtica dioica* and sedge *Carex species*, but not deemed to have any higher value than low ecological importance.

The species poor hedgerow consists of hawthorn, holly *Ilex aquifolium*, garden privet and sycamore. Scattered trees also include alder, sycamore and cherry *Prunus species.*

The site has fairly low biodiversity value overall, therefore it is unlikely that the site would support many European and UK protected species that have been recorded within 2km, but could potentially include foraging bats and badger. The relatively florally diverse grassland is deemed not quite being able to classify as a species rich grassland to warrant the site being attributed any higher than low ecological importance.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If the trees and hedgerow are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

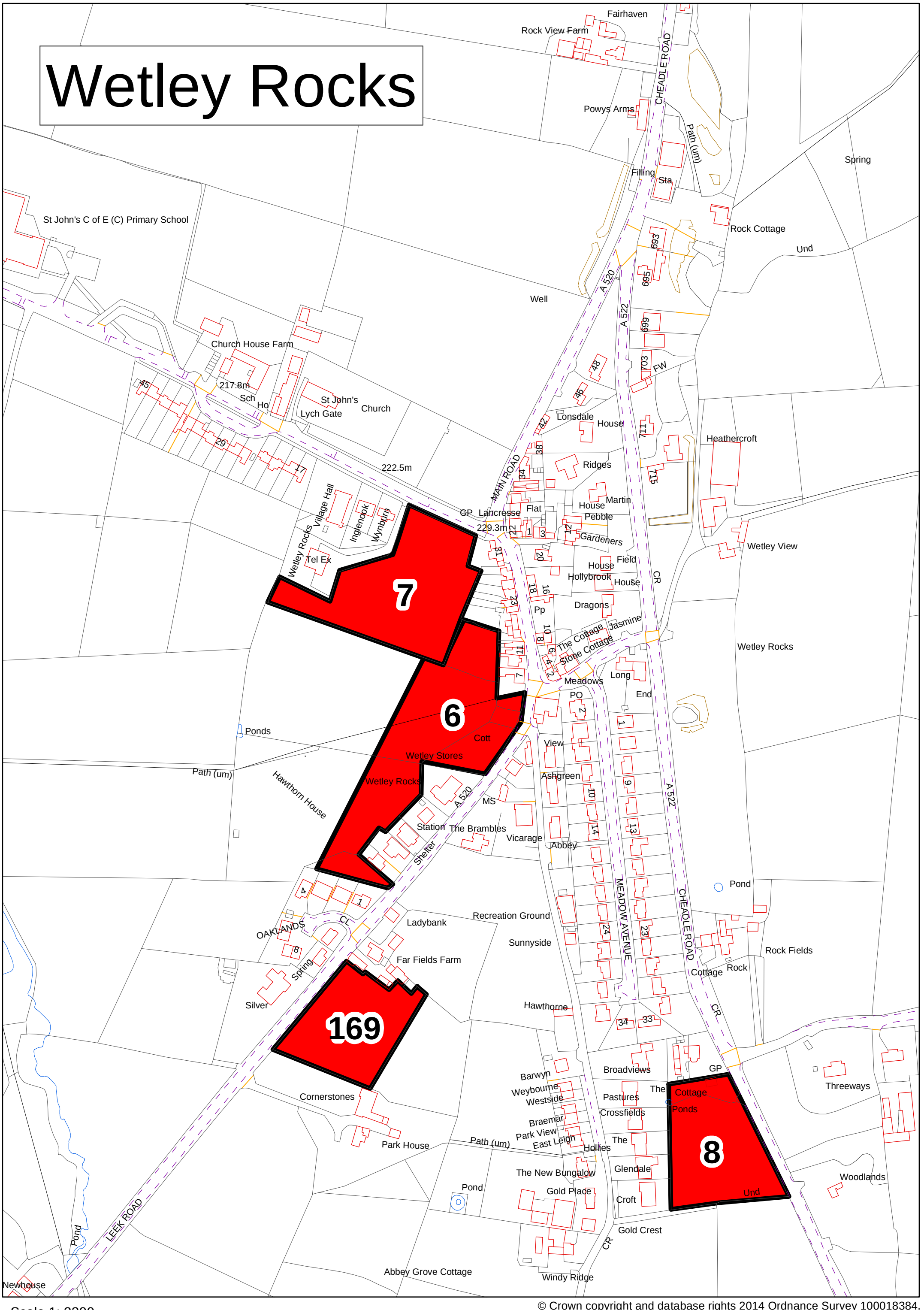
7. Conclusion

The site has fairly species poor habitats present on site, and has been attribute low ecological importance.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Vegetation removal at the appropriate time of year

Wetley Rocks



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Site label numbers denote Site FID reference numbers used in Study.

FID 6

Table of Contents

FID 6

1. Introduction

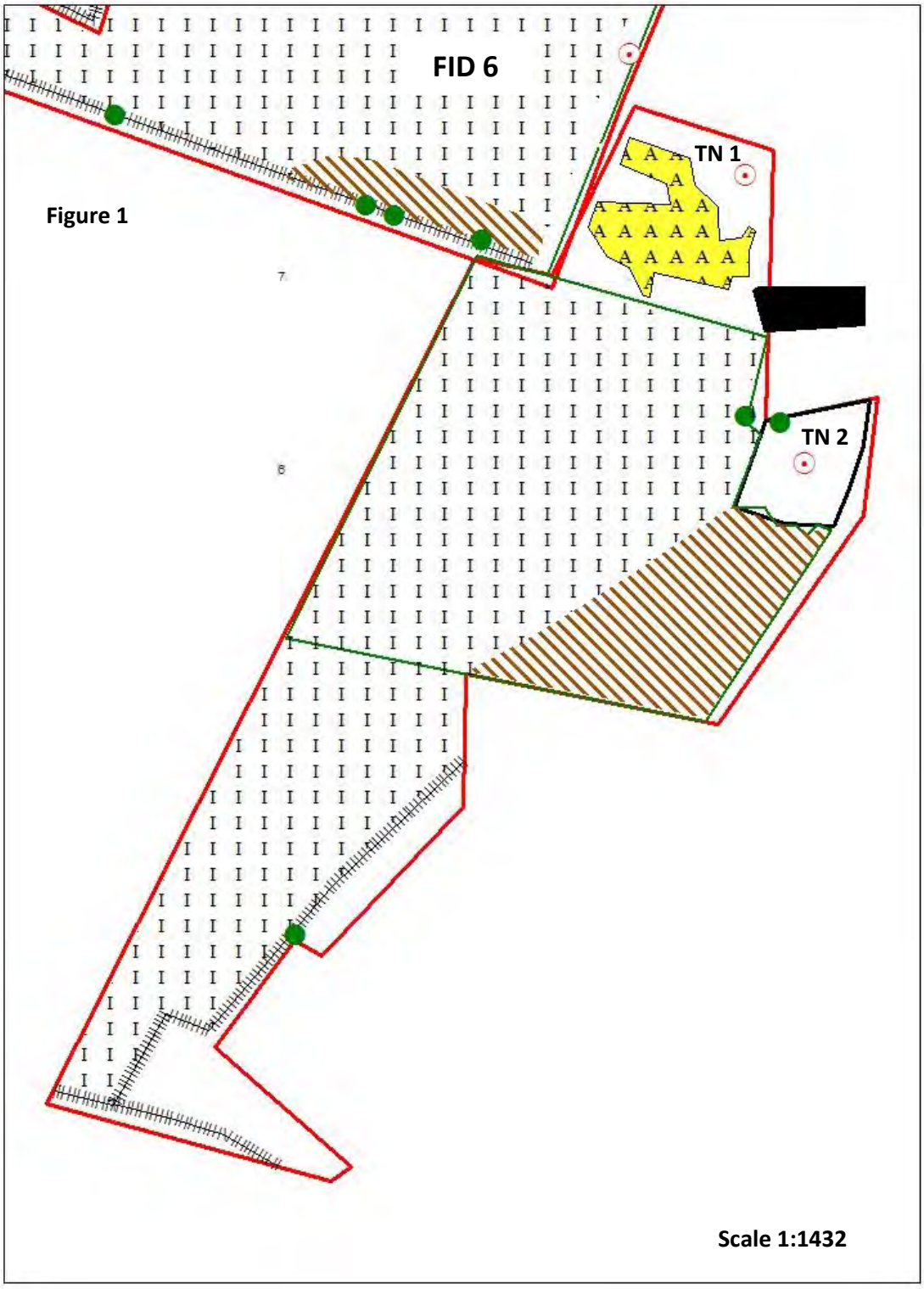
1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 6 O.S grid reference SJ9646949063.

FID 6 is located to the north east of Wetley Rocks village, approximately 5km east of Stoke on Trent in the Staffordshire Moorlands District, surrounded by a mixture of agricultural land and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM) (2006).


FID 6
TN 1
TN 2
Figure 1
Scale 1:1432

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 6 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
AWI/ BAS	Felthouse Wood
AWI	Consall Wood
AWI/ SBI	Littlewood Wood, Hall Wood
AWI/ SBI	The Rookery
BAS	Platt (north of)
SBI	Consall Forge
SBI	March Lane/ Windycote Lane
SBI	Consall Scout Camp
SBI	Wetley Rocks
SBI	The Rookery

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	Barn Owl
	Brown Hare
	Brown Long-eared Bat
	Buff tailed bumble bee
	Common carder bee
	Common Pipistrelle
	Eurasian Curlew
	European water vole
	Ghost moth
	Grass Snake
	Grey partridge
	House sparrow
	Hedge rustic

	House sparrow
	Insect
	Jacob's ladder
	Little kneeling eyebright
	Mallard
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small phoenix
	Soprano pipistrelle
	Tall hawkweed
	West European Hedgehog
	White ermine
	Willow warbler
INV	American mink
	Indian Balsam
	Japanese rose
	New Zealand pigmyweed
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown Long-eared Bat
	European water vole
	Eurasian Badger
	Grass Snake
	Pipistrelle
	Soprano pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, EPS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Improved grassland
- Tall ruderal vegetation
- Amenity grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	0.59	61
TR	0.11	11
AM	0.04	4
OTHER	0.24	24
TOTALS	0.98	100

TR- Tall ruderal vegetation, I – Improved grassland, AM – Amenity grassland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* False oat grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus*, rosebay willowherb *Chamerion angustifolium,* common nettle *Urtica dioica*
Hedgerow/ trees/ scrub	Hawthorn *Crataegus monogyna,* elder *Sambucus nigra*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* creeping thistle *Cirsium arvense* and broadleaved dock *Rumex obtusifolius* have all been recorded within the grassland and tall ruderal vegetation.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of broadleaved woodland and scattered trees from March to August when birds in the UK normally breed.

4.3.5 Incidental records of fauna

During the walkover survey species observed include the following:

- Butterflies including speckled wood *Pararge aegeria* and small tortoiseshell *Aglais urticae*

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9649849121	Domestic garden
2	SJ9650949078	Domestic garden

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Species poor hedgerows					x
Scattered trees					x
Tall ruderal vegetation					x
Species poor grassland					x
Amenity grassland					x
Overall potential site importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland.

The species poor grassland including amenity grassland habitats are particularly common in the UK, have low biodiversity value and therefore are deemed to have a low ecological value within the matrix.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include foraging bats, badger and west European hedgehog which has been recorded within 100m. Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site is directly adjacent to a domestic housing estate and species poor grasslands, and has poor connectivity to the wider countryside which reduces the value of the site as a whole in terms of biodiversity. The site also has mostly low biodiversity value overall in terms of area and therefore is deemed as having low ecological importance in terms of its loss within the wider countryside.

The only recommendation for action is for vegetation removal at the appropriate time of year to negate any effects on breeding birds within this site.

FID 7

Table of Contents

FID 7

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 7 O.S grid reference SJ9643049157.

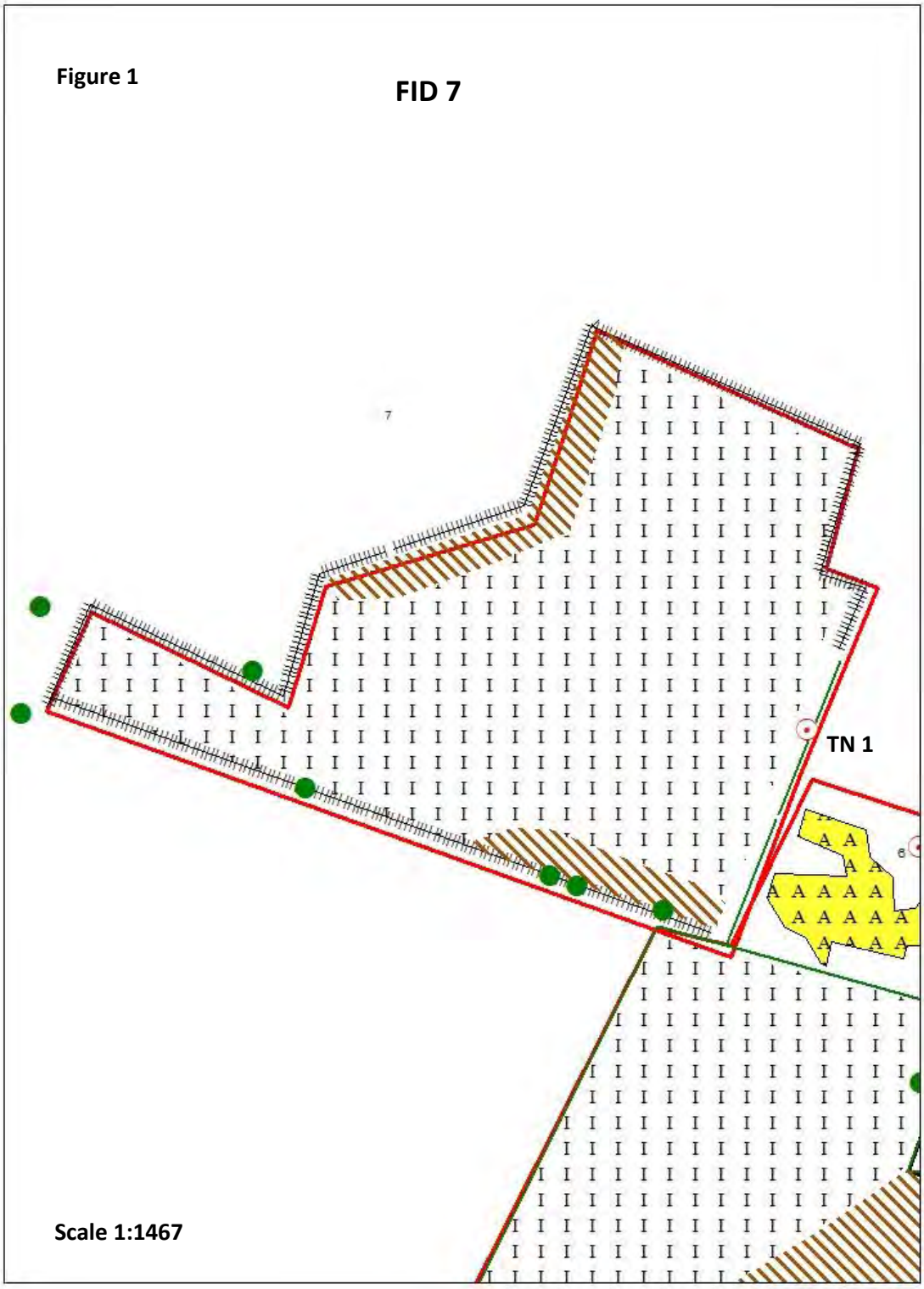
FID 7 is located to the North West of Wetley Rocks and is surrounded by housing and agricultural land.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 7



2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 7 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
AWI/ BAS	Felthouse Wood
AWI	Consall Wood
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AWI/ SBI	The Rookery
BAS	Ashcombe Deer Farm
BAS	Platt (north of)
SBI	Consall Forge
SBI	March Lane/ Windycote Lane
SBI	Wetley Rocks
SBI	The Rookery

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	Barn Owl
	Brown Hare
	Brown birch bolete
	Brown Long-eared Bat
	Buff tailed bumble bee
	Common carder bee
	Common Pipistrelle
	Eurasian Curlew
	European water vole
	Ghost moth
	Grass Snake
	House sparrow
	Insect

	Jacob's ladder
	Little kneeling eyebright
	Mallard
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small phoenix
	Soprano pipistrelle
	Tall hawkweed
	West European hedgehog
	White ermine
	Willow warbler
INV	American mink
	Indian Balsam
	Japanese rose
	New Zealand pigmyweed
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown Long-eared Bat
	European water vole
	Eurasian Badger
	Grass Snake
	Pipistrelle
	Soprano pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Improved grassland
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	0.64	79
TR	0.07	9
OTHER	0.09	12
TOTALS	0.80	100

TR- Tall ruderal vegetation, I – Improved grassland,

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, dandelion *Taraxacum officinale agg,* creeping buttercup *Ranunculus repens*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* holly *Ilex aquifolium*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* creeping thistle *Cirsium arvense* and broadleaved dock *Rumex obtusifolius* have all been recorded within the grassland and tall ruderal vegetation.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of broadleaved woodland and scattered trees from March to August when birds in the UK normally breed.

Incidental records of fauna

During the walkover survey species observed include the following:

- Plants including Borage *Borago officinalis*

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9648349145	Damson, holly and hawthorn hedge

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Species poor hedgerows					x
Scattered trees					x
Tall ruderal vegetation					x
Species poor grassland					x
Overall site importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland.

The species poor habitats are particularly common in the UK, have low biodiversity value and therefore are deemed to have a low value within the matrix.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include foraging bats and badger and west European hedgehog which has been recorded within 100m.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has mostly low biodiversity value overall in terms of area, is directly adjacent to a domestic housing estate and species poor grasslands, and has poor connectivity to the wider countryside. Therefore the site is deemed as having low ecological importance in terms of its loss within the wider countryside.

The only recommended action is for vegetation removal at the appropriate time of year to negate any effects on breeding birds within this site.

FID 8

Table of Contents

FID 8

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 8 O.S grid reference SJ9665648767.

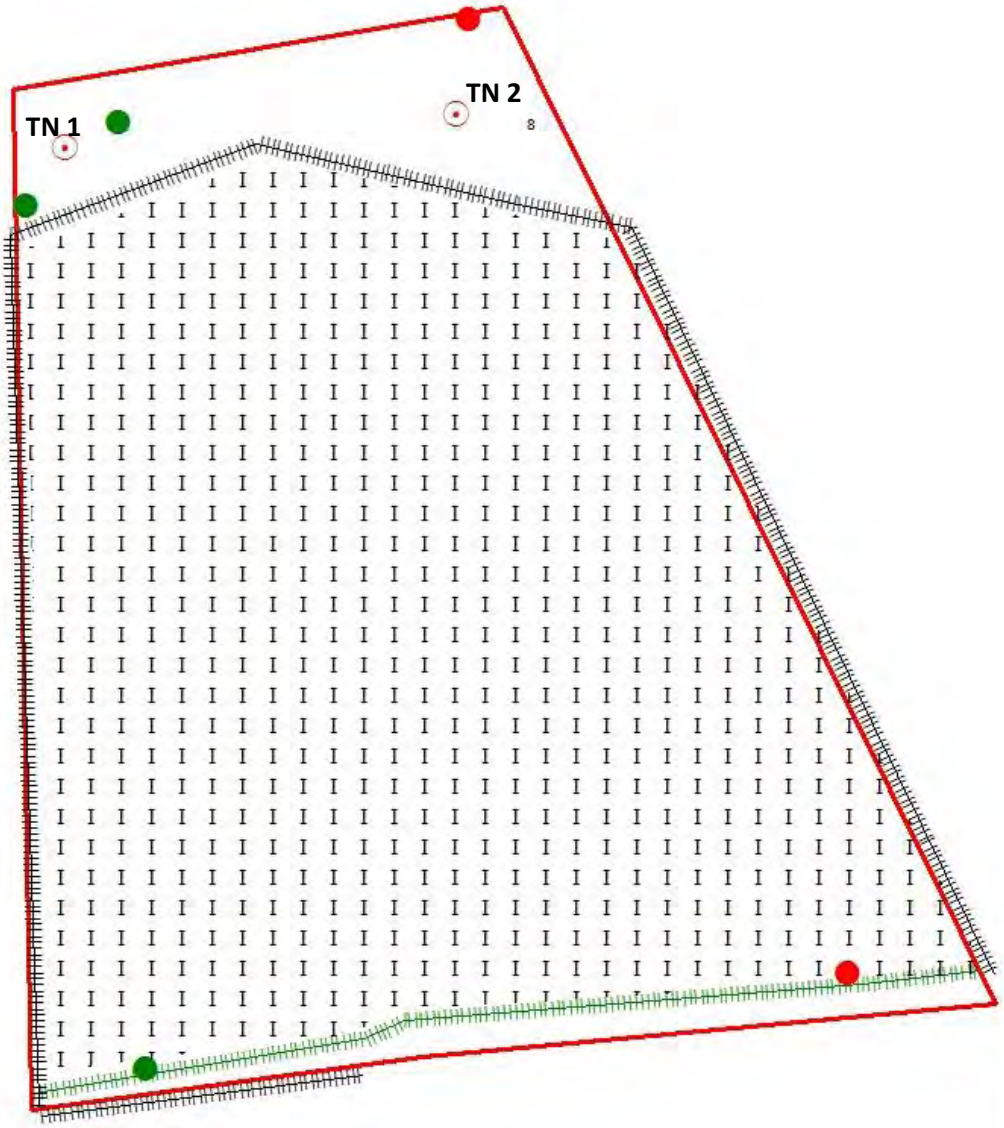
FID 8 is located immediately south of Wetley Rocks village, approximately 5 km from Stoke on Trent in the Staffordshire Moorlands District, surrounded by a mix of agricultural pasture and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 8



Scale 1:828

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 8 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There was no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
AWI/ BAS	Felthouse Wood
AWI	Consall Wood
AWI/ SBI	The Rookery
BAS	Ashcombe Deer Farm
BAS	Platt (north of)
SBI	Consall Forge
SBI	March Lane/ Windycote Lane
SBI	Little Broadoak Farm (north west of)
SBI	Wetley Rocks
SBI	Consall Scout Camp

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A bumble bee
	Barn Owl
	Brown Hare
	Brown birch bolete
	Brown Long-eared Bat
	Common bullfinch
	Common kestrel
	Common Pipistrelle
	Common starling
	Common swift
	Daubenton's bat
	Dunnock
	Eurasian Curlew
	European water vole

	Ghost moth
	Grass Snake
	House sparrow
	House sparrow
	Insect
	Jacob's ladder
	Lesser spotted woodpecker
	Little kneeling eyebright
	Mallard
	Mistle thrush
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small phoenix
	Soprano pipistrelle
	Tall hawkweed
	West European Hedgehog
	White ermine
	Willow warbler
	Wood warbler
INV	American mink
	Japanese rose
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown Long-eared Bat
	Daubenton's bat
	European water vole
	Eurasian Badger
	Grass Snake
	Pipistrelle
	Soprano pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Improved grassland
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
I	0.47	83	
OTHER	0.09	17	
BPT			2
TOTALS	0.57	100	2

I – Improved grassland, BPT – Bat Potential Trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* Creeping buttercup *Ranunculus* repens, ribwort plantain *Plantago lanceolata,* common nettle *Urtica dioica*
Hedgerow/ trees	Hawthorn *Crataegus monogyna*, ash *Fraxinus excelsior*, beech *Fagus sylvatica*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* creeping thistle *Cirsium arvense* and broadleaved dock *Rumex obtusifolius* have all been recorded within the grassland.

4.3.4 Fauna

Bats

The site has 2 trees recorded in the walkover survey that could potentially support roosting bats but very little habitat that bats could use for foraging.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of broadleaved woodland and scattered trees from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SJ9662748801	Domestic garden
2	SJ9665848807	Domestic garden

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Species poor grassland					x
Overall potential site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by mainly by habitats of low biodiversity value, with domestic dwellings and improved grassland, although across Cheadle road approximately 5m away a small broadleaved woodland can be found.

The species poor habitats present on site are particularly common in the UK, have low biodiversity value and therefore are deemed to have a low value within the matrix. The 2 trees with bat potential elevate the site's overall ecological importance to district level.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include roosting and foraging bats, badger and west European hedgehog which has been recorded within 100m.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in 'bat mitigation guidelines' Mitchell-Jones (2004).

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site is directly adjacent to a small domestic housing estate, species poor grasslands, and has poor connectivity to the wider countryside which reduces the value of the site as a whole in terms of biodiversity. The site also has mostly low biodiversity value overall in terms of area and but is deemed as having district ecological importance in terms of its loss within the wider countryside due to the presence of the 2 trees with bat roosting potential.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- A bat survey regime to ascertain whether bats roost in the highlighted trees
- Vegetation removal at the appropriate time of year

FID 169

Table of Contents

FID 169

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 169 O.S grid reference SJ9639948854.

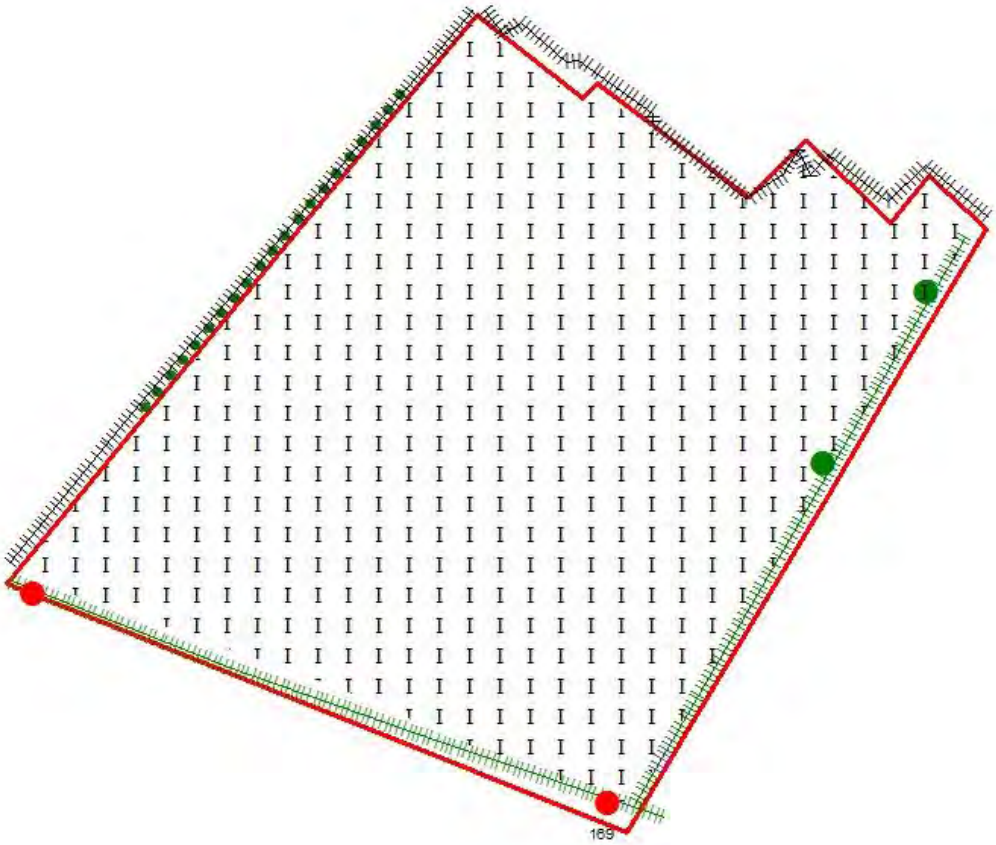
FID 169 is located west/south of Wetley Rocks village surrounded by agricultural land and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 169



Scale 1:1055

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 169 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
AWI/ BAS	Felthouse Wood
AWI	Consall Wood
AWI/ SBI	Littlewood Wood, Hall Wood
AWI/ SBI	The Rookery
BAS	Platt (north of)
SBI	Consall Forge
SBI	March Lane/ Windycote Lane
SBI	Consall Scout Camp
SBI	Wetley Rocks
SBI	The Rookery

SSSI – Site of Scientific Interest, AWI – Listed in Ancient Woodland Inventory, BAS – Biodiversity Action Site, SBI – Site of Biological Importance

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	Barn Owl
	Brown Hare
	Brown Long-eared Bat
	Buff tailed bumble bee
	Common bullfinch
	Common carder bee
	Common kestrel
	Common Pipistrelle
	Common starling
	Common swift
	Dunnock
	Eurasian Curlew
	European water vole

	Ghost moth
	Grass Snake
	House sparrow
	Insect - Hymenopteran
	Jacob's ladder
	Lesser spotted woodpecker
	Little kneeling eyebright
	Mallard
	Mistle thrush
	Northern Lapwing
	Pipistrelle
	Sky lark
	Small phoenix
	Soprano pipistrelle
	Tall hawkweed
	West European Hedgehog
	White ermine
	Willow warbler
INV	American mink
	Indian Balsam
	Japanese rose
	New Zealand pigmyweed
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown Long-eared Bat
	Common pipistrelle
	Daubenton's bat
	European water vole
	Eurasian Badger
	Grass Snake
	Pipistrelle
	Soprano pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species, EPS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Species poor improved grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)	NUMBER
I	0.51	100	
BPT			2
TOTALS	0.51	100	2

I – Improved grassland, BPT – Bat potential trees

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Tufted hair grass *Deschampsia cespitosa,* Perennial rye grass *Lolium perenne,* Yorkshire fog *Holcus lanatus*, Annual meadow grass *Poa annua,*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* ash *Fraxinus excelsior* , leylandii *Cuprocypressus x leylandii*, cherry laurel *Prunus laurocerasus*, garden privet *Ligustrum sp.*

4.3.3 Invasive weeds

No species listed in Schedule 9 of the Wildlife and Countryside Act 1981 were recorded on site at the time of survey.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds could nest in areas of hedgerows and scattered trees from March to August when birds in the UK normally breed.

5. Evaluation

Table 5

Habitat	Ecological Importance				
	I	N	R	D	L
Scattered trees				x	
Species poor hedgerows					x
Species poor improved grassland					x
Overall site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 5 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by domestic dwellings, main road and species poor grassland connected to hedgerows to the north east and south east.

The site itself consists of species poor grassland (100%) with the hedgerows consisting of hawthorn, elder, cherry laurel and garden privet.

There are a number of European and UK protected species recorded within 2km according to the desk study of which bats, badger and West European hedgehog (recorded within 100m) could use the site for foraging. The site has been deemed to have district ecological importance due to the presence of the 2 trees with potential to support roosting bats.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Trees with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that the 2 trees recorded as having potential to support roosting bats should be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004). It is also additionally recommended that these trees are checked for the presence of breeding birds at the same time as the bat surveys.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If the hedgerows and scattered trees are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

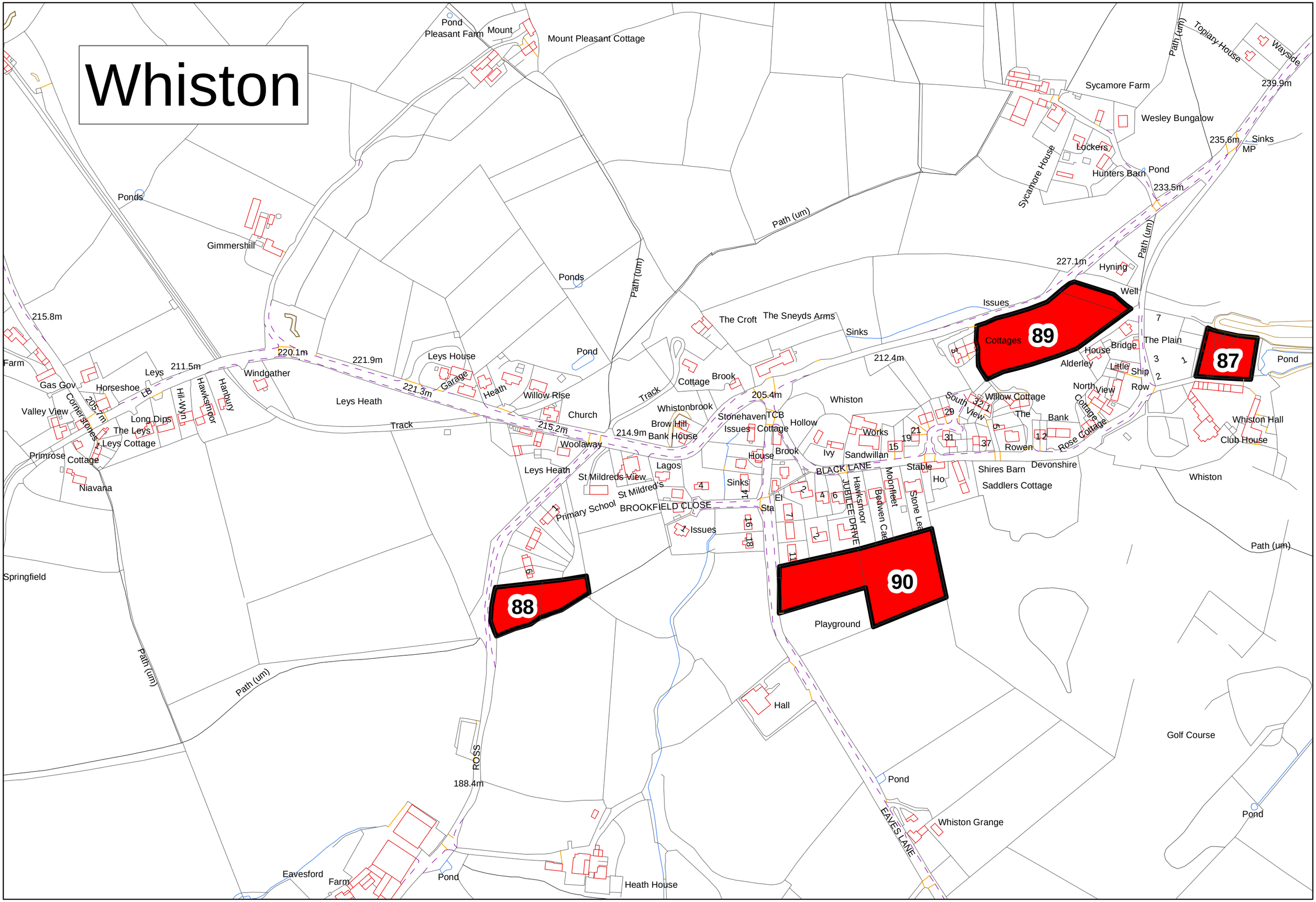
7. Conclusion

The site has fairly low potential to support protected species, and the site is fairly poorly connected to the wider countryside. However the 2 trees highlighted for bat roosting potential elevates the site to district importance.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Bat surveys of the 2 trees marked as having bat roosting potential
- Vegetation removal at the appropriate time of year

Whiston



Scale 1: 3000

Site label numbers denote Site FID reference numbers used in Study.

FID 87

Table of Contents

FID 87

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 87 O.S grid reference SK0419347228.

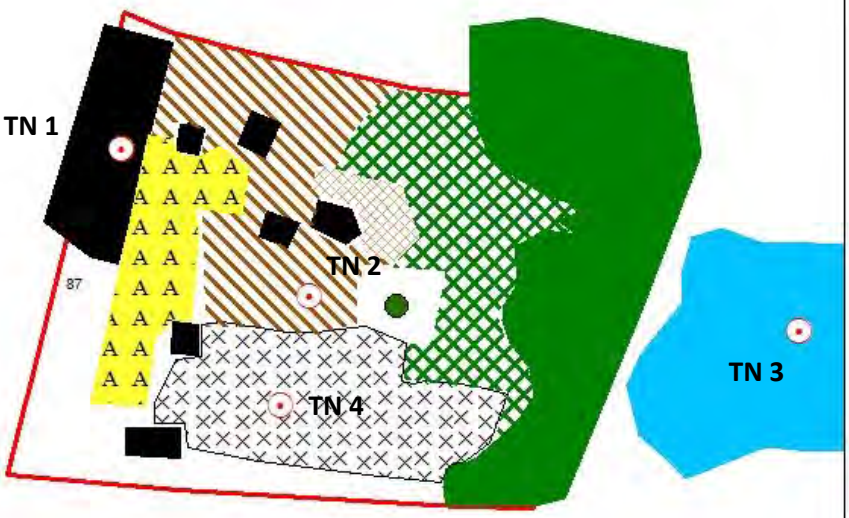
FID 87 is located north of Whiston Hall, Whiston village in the Staffordshire Moorlands District, surrounded by Whiston Hall and its grounds, Whiston Hall golf course and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 87



Scale 1:596

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 87 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger *Meles meles* and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
SSSI	Froghall Meadow and Pastures
SSSI	Whiston eaves
AWI	Ashbourne Wood
AWI	Shirley Hollow
AWI	Harston Wood
AWI	Star Wood, Bath Wood, Peggy's Wood
AWI	Ruelow Wood
AWI	Carr Wood
AWI	Key Wood
AWI	Jackson Wood
AWI	Oakamoor CP
AWI	Star Wood, Oakamoor CP, Outsclough, Cotton Bank
AWI	Hag Wood
AWI	Banktop Woods
AWI	StraighthillsWood
AWI	Booth's Wood, Newhouse Wood
AWI	Moseymoor Wood, Cloughhead Wood, Whieldon's Wood, Massey's Wood, Blackbank Wood
AWI	Cotton Wood
AWI	Ashbourne Hey
BAS	Gorsey Wood
BAS	Shall-Wall Lane (north west of lanehead)
BAS	Garston House (west of)
BAS	Newfields Farm (north of)
BAS	Garston Villa (west of)
WTNR	Cotton Dell
WTNR	Side Farm Meadows
SBI	Harston Hill
SBI	Lockwood Pastures
SBI	Fernylee Farm (west of)
SBI	Foxt Wood
SBI	Jackson Wood
SBI	Little Eaves Farm (south west of)

SBI	Newhouse Farm (north east of)
SBI	Whieldon's Wood
SBI	Garston Villa (east of)
SBI	Banktop Farm (north of)
SBI	Tank Wood
SBI	Kingsley Holt (east of)
SBI	Whiston Bridge (west of)
SBI	Heathly Gore (south)
SBI	Heathy Gore (north)
SBI	Windy Harbour
SBI	Froghall Bridge (east of)
SBI	Oldridge Farm (south-east of)
SBI	Ashbourne Hey
SBI	Foxt Banks
SBI	Upper Garston Rocks
SBI	Whiston Hall
SBI	Upper Cotton Dell
SBI	Whistonbrook
SBI	Heathy Gore (north)

AWI – listed in Ancient Woodland Inventory, BAS – Biodiversity Alert Site, WTNR – Wildlife Trust Nature Reserve, SBI – Site of Biological Importance, SSSI – Site of Special Scientific Interest

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	A moth
	Barn Owl
	Barn Swallow
	Brown birch bolette
	Brown Hare
	Brown long eared bat
	Brown trout
	Buff tailed bumble bee
	Common Bullfinch
	Common kestrel
	Common lizard
	Common pipistrelle

	Common redstart
	Common snipe
	Common starling
	Common Toad
	Common whitethroat
	Corn buttercup
	Dunnock
	Dyer's Greenweed
	Eurasian curlew
	European otter
	European water vole
	Feathered gothic
	Good king henry
	Grass Snake
	Greater Butterfly-orchid
	Green Woodpecker
	Grey Wagtail
	House Martin
	House Sparrow
	Insect - Hymenopteran
	Knot Grass
	Lesser Spotted Woodpecker
	Linnet
	Little Kneeling Eyebright
	Mallard
	Meadow pipit
	Mistle thrush
	Northern Lapwing
	Pink waxcap
	Pipistrelle
	Reed bunting
	Rosy rustic
	Round fruited rush
	Sky lark
	Slow worm
	Song Thrush
	Spotted flycatcher
	Stock Dove
	Tree Bumble Bee
	Tree pipit
	Tufted duck
	Wall

	Western European hedgehog
	Willow Warbler
	Yellow Meadow Ant
	Yellowhammer
INV	American mink
	Canadian waterweed
	Greater Canada Goose
	Indian Balsam
	Japanese knotweed
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown long eared bat
	Common kingfisher
	Common lizard
	Common pipistrelle
	Daubenton's bat
	Eurasian Badger
	European otter
	European water vole
	Grass Snake
	Natterer's bat
	Pipistrelle
	Slow worm

BAP – Biodiversity Action Plan Species, INV – Invasive weed species,
E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Semi-natural broadleaved woodland
- Dense scrub
- Tall ruderal vegetation
- Ephemeral grassland
- Introduced shrub
- Amenity grassland
- Building

.Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
TR	0.04	17
AM	0.01	7
ESP	0.04	18
DS	0.04	18
IS	0.00	2
BW	0.03	12
OTHER	0.05	26
TOTALS	0.21	100

AM – Amenity Grassland, TR- Tall ruderal vegetation, DS – Dense scrub,
BW – Broadleaved Woodland, IS – Introduced shrub, ESP – Ephemeral grassland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Red fescue *Festuca rubra,* false oat grass *Arrhenatherum elatius*, annual meadow grass *Poa annua,* creeping thistle *Cirsium arvense,* field bindweed *Convolvulus arvensis,* common nettle *Urtica dioica*, ground elder *Aegopodium podagria*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* elder *Sambucus nigra* bramble *Rubus fruticosus agg*, ash *Fraxinus excelsior*, holly *Ilex aquifolium*, goat willow *Salix caprea*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey. However, the pond adjacent to the site is inundated with floating pennywort *Hydrocotyle ranunculoides* which is listed as a Schedule 9 species.

Weeds listed under the Weeds Act 1959 including creeping thistle and curled dock *Rumex crispus* have been recorded within the tall ruderal vegetation.

4.3.4 Fauna

Bats

There are 7 buildings, including 1 domestic dwelling of brick and tiled roof construction that has low potential to support roosting bats. The house is a fairly new construction with no roof tiles visibly loose and no obvious holes or other points of entry for bats.

The remaining buildings are small sheds and outbuildings are deemed unsuitable to support roosting bats.

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of broadleaved woodland, dense scrub, derelict outbuildings and possibly tall ruderal vegetation from March to August when birds in the UK normally breed.

Incidental records

After speaking to a member of staff at Whiston Hall it is suggested that badger and barn owl are regularly seen around the golf course. Also it is reported that there are 3 fishing lakes and 3 ponds within Whiston Hall grounds.

- Birds including blackbird *Turdus merula*, house sparrow *Passer domesticus* (UKBAP) and robin *Erithacus rubecula*

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SK0417047231	Requires bat survey
2	SK0418747211	Reptile survey required
3	SK0423147216	Large pond, requires great crested newt survey
4	SK0420447227	Former coal bunker

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Broadleaved woodland				x	
Dense scrub				x	
Tall ruderal vegetation				x	
Ephemeral grassland					x
Introduced shrub					x
Amenity grassland					x
Overall site importance				x	
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site each habitat in terms of their potential loss to the wider countryside.

The site is surrounded by an old railway embankment to the north, a large ornamental pond to the east and Whiston Hall, its car park and grounds. The railway embankment to the north gives good connectivity to the wider countryside.

The site is owned by Whiston Hall/ golf club and consists of a domestic dwelling and part of its garden to the western third of the site. The remaining area is a derelict garden/ allotment with numerous dilapidated outbuildings and greenhouses.

The broadleaved woodland that overlaps the site consists mainly of ash, holly and hawthorn and one Norway spruce *Picea abies*. The large area of dense scrub consists of mainly bramble and hawthorn, with tall ruderal vegetation consisting mainly of species such as creeping thistle, curled dock and common nettle. The ephemeral grassland includes species such as red fescue, field bindweed and teasel *Dipsacus fullonum*.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions would possibly include foraging bats, badger (anecdotally confirmed) barn owl (anecdotally confirmed), grass snake and terrestrial habitat for amphibians. Therefore the site is considered to have district ecological importance.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Buildings with bat potential

All species of bat and their roosts are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and The Conservation of Habitats and Species Regulations 2010.Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of bats to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species.

It is therefore recommended that although the building has no obvious entrance points it should still be surveyed by a suitably qualified ecologist under criteria outlined in the bat mitigation guidelines Mitchell-Jones (2004), to help negate the presence of roosting bats.

Great crested newt survey

As great crested newts could potentially be present on site under refugia, and quality terrestrial habitat close to the pond to the east, a great crested newt survey is recommended for the pond according to the 'Great crested newt conservation handbook' (Froglife, 2001). There appears to be 1 other pond within 500m of the site. It is also recommended that any refugia present is removed by hand under watching brief of a suitably qualified great crested newt licensed ecologist. Any individuals found should be moved to a previously agreed locality. The pond also contains the Schedule 9 listed floating pennywort, so appropriate contamination procedures should be carried out after each survey.

The great crested newt is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and in Schedule 2 of The Conservation (Natural Habitats, &c.) Regulations 1994 as a European protected species.

Under the legislation, it is an offence to intentionally kill, injure or take a great crested newt as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt. It is also an offence to deliberately disturb the species in such a way as to be likely significant to affect: i) the ability of a significant group of great crested newts to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species. The legislation applies to great crested newts in both aquatic and terrestrial habitats and to all life stages.

Reptile survey

All common reptiles in the UK, i.e. slow-worm *Anguis fragilis*, common lizard *Lacerta vivipara*, adder *Vipera berus* and grass snake *Natrix natrix*, are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect of Sections 9(1) and 9(5) which makes it an offence to intentionally kill, injure or sell the animals.

As reptiles could potentially be present on site due to the presence of the pond to the east it is recommended that a full reptile survey is carried out and any refugia present is removed by hand under watching brief of a suitably qualified ecologist.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees are retained if the site is to be developed.

If trees and tall ruderal vegetation are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has a mosaic of habitats contained within an area of garden and derelict garden with good connectivity to other more biodiverse habitats, therefore the site has been assigned district ecological importance.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Bat survey of the building
- A more thorough scoping survey of all open water within at least 500m including preliminary HSI survey.
- Great crested newt survey, applying appropriate de-contamination procedures due to invasive aquatic weed
- Reptile survey
- Vegetation removal at the appropriate time of year

FID 88

Table of Contents

FID 88

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 88 O.S grid reference SK0364546993.

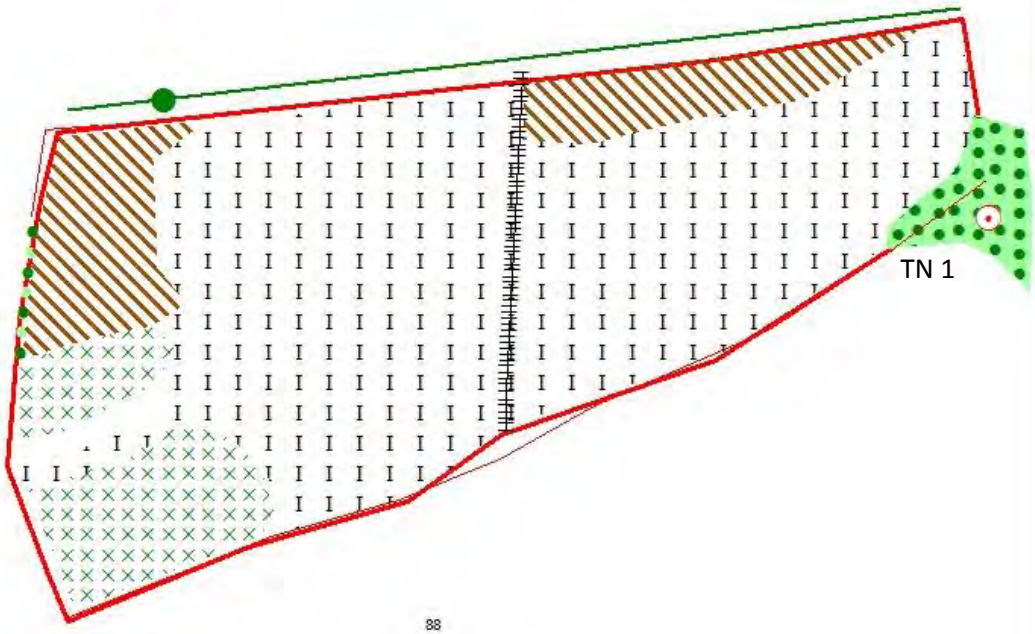
FID 88 is located south west of Whiston village in the Staffordshire Moorlands District, surrounded by housing and agricultural land.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 88



Scale 1:895

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 88 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
SSSI	Froghall Meadow and Pastures
SSSI	Whiston eaves
AWI	Ashbourne Wood
AWI	Shirley Hollow
AWI	Harston Wood
AWI	Hag Wood
AWI	Banktop Woods
AWI	StraighthillsWood
AWI	Moseymoor Wood, Cloughhead Wood, Whieldon's Wood, Massey's Wood, Blackbank Wood
AWI/ SBI	Ashbourne Hey
WTNR	Cotton Dell
SBI	Harston Hill, Froghall Wharf
SBI	Fernylee Farm (west of)
SBI	Foxt Wood (north of)
SBI	Whiston Bridge (west of)
SBI	Little Eaves Farm (south west of)
SBI	Tank Wood
SBI	Kingsley Holt (east of)
SBI	Froghall Bridge (east of)
SBI	Oldridge Farm (south-east of)
SBI	Ashbourne Hey
SBI	Whiston Hall
SBI	Whistonbrook

AWI – listed in Ancient Woodland Inventory, WTNR – Wildlife Trust Nature Reserve, BAS – Biodiversity Alert Site, SBI – Site of Biological Importance, SSSI – Site of Special Scientific Interest

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A true fly
	Barn Owl
	Barn Swallow
	Brown Hare
	Brown long eared bat
	Brown trout
	Common Bullfinch
	Common kestrel
	Common kingfisher
	Common pipistrelle
	Common snipe
	Common starling
	Common Toad
	Common whitethroat
	Corn buttercup
	Dunnock
	Dyer's Greenweed
	European water vole
	Good king henry
	Grass Snake
	Greater Butterfly-orchid
	Green Woodpecker
	Grey Wagtail
	House Martin
	House Sparrow
	Insect - Hymenopteran
	Knot Grass
	Lesser Spotted Woodpecker
	Linnet
	Little Kneeling Eyebright
	Northern Lapwing
	Pink waxcap
	Pipistrelle
	Song Thrush
	Spotted flycatcher

	Stock Dove
	Tree Bumble Bee
	Willow Warbler
	Yellow Meadow Ant
INV	American mink
	Canadian waterweed
	Greater Canada Goose
	Indian Balsam
	Japanese knotweed
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown long eared bat
	Common kingfisher
	Common lizard
	Common pipistrelle
	Daubenton's bat
	Eurasian Badger
	European water vole
	Grass Snake
	Natterer's bat
	Pipistrelle

BAP – Biodiversity Action Plan Species, INV – Invasive weed species,
E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Planted mixed woodland
- Scattered scrub
- Tall ruderal vegetation
- Species poor grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	0.21	69
TR	0.04	13
SS	0.04	12
MW	0.00	1
OTHER	0.01	5
TOTALS	0.30	100

TR- Tall ruderal vegetation, I – Improved grassland, MW – Mixed Woodland,
SS – Scattered scrub,

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Perennial rye grass *Lolium perenne,* False oat grass *Arrhenatherum elatius*, common nettle *Urtica dioica,* white clover *Trifolium repens*, curled dock *Rumex crispus*
Hedgerows/ trees/ scrub	Broom *Cytisus scoparius,* gorse *Ulex europaeus,* Hawthorn *Crataegus monogyna,* bramble *Rubus fruticosus agg,* leylandii *Cuprocypressus x leylandii*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* and or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* creeping thistle *Cirsium arvense* and broadleaved dock *Rumex obtusifolius* have all been recorded within the grassland and tall ruderal vegetation.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees, scrub, woodland and hedgerows from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SK0356747022	Mix of scrub and broadleaved woodland as good connective habitat

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Species poor hedgerows					x
Scattered trees					x
Mixed woodland					x
Scattered scrub					x
Tall ruderal vegetation					x
Species poor grassland					x
Overall site importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is bordered by domestic dwellings to the north with the remaining habitats consisting of species poor grasslands which are fairly well connected to the wider countryside by a network of hedgerows.

The hedgerows consist mainly of hawthorn and holly. The planted mixed woodland has a mixture of western hemlock *Tsuga heterophylla*, European larch *Larix decidua*, beech *Fagus sylvatica* and rowan *Sorbus aucuparia*. Scattered scrub around the site consists of bramble, gorse and broom.

The habitats present on site are therefore particularly common in the UK, have fairly low biodiversity value and therefore are deemed to have a low value within the matrix.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include foraging bats and badger.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees and particularly the potentially species rich hedgerows are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has mostly low biodiversity value overall in terms of area, is adjacent to a road to the west and domestic buildings to the north and species poor grasslands but has good connectivity to the wider countryside through networks of hedgerows. The site also has low potential to support protected species therefore has been attributed low ecological importance.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Vegetation removal at the appropriate time of year

FID 89

Table of Contents

FID 89

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 89 O.S grid reference SK0402947256.

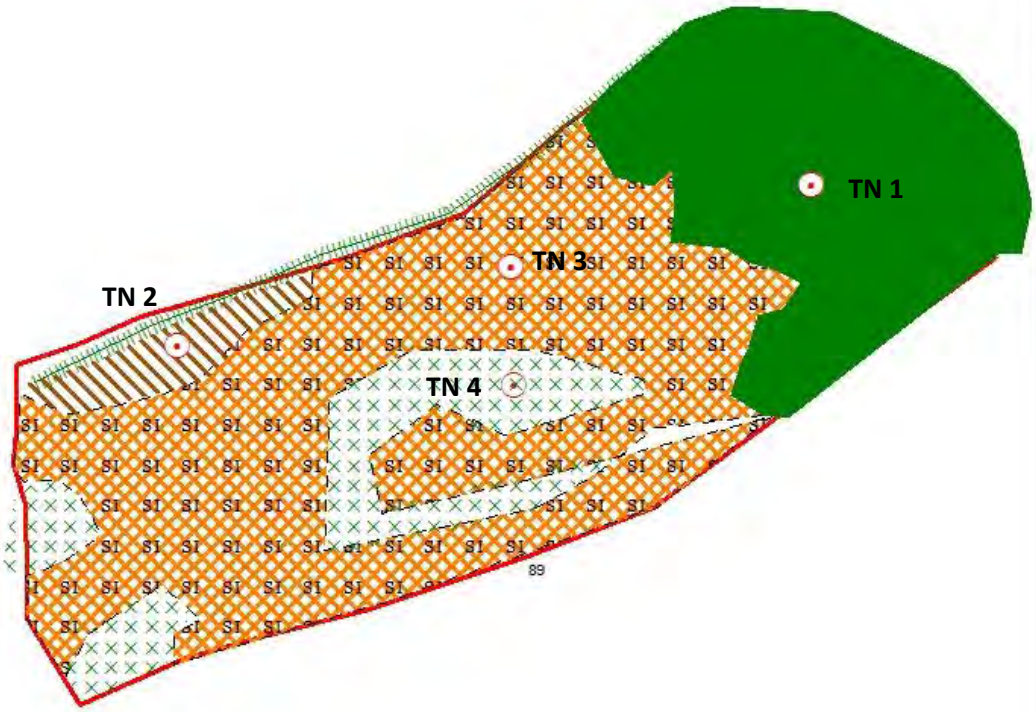
FID 89 is located north of Whiston village in the Staffordshire Moorlands District, surrounded by broadleaved woodland and housing.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 89



Scale 1:1,128

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 89 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
SSSI	Froghall Meadow and Pastures
SSSI	Whiston eaves
AWI	Ashbourne Wood
AWI	Shirley Hollow
AWI	Harston Wood
AWI	Ruelow Wood
AWI	Carr Wood
AWI	Key Wood
AWI	Jackson Wood
AWI	Oakamoor CP
AWI	Murrel's Wood
AWI	Hag Wood
AWI	Banktop Woods
AWI	StraighthillsWood
AWI	Booth's Wood, Newhouse Wood
AWI	Moseymoor Wood, Cloughhead Wood, Whieldon's Wood, Massey's Wood, Blackbank Wood
AWI	Cotton Banks
AWI	Ashbourne Hey
AWI	Lock Wood/ Lockwood Waste
AWI	Bank Sprink
AWI	Gibridding Wood
BAS	Gorsey Wood
BAS	Bank Sprink
BAS	Garston House (north of)
BAS	Garston Villa (west of)
WTNR	Cotton Dell
WTNR	Side Farm Meadows
SBI	Harston Hill, Froghill Wharf
SBI	Lockwood Pastures
SBI	Fernylee Farm (south of)
SBI	Foxt Wood
SBI	Jackson Wood

SBI	Little Eaves Farm (south west of)
SBI	Whieldon's Wood
SBI	Garston Villa (east of)
SBI	Tank Wood
SBI	Kingsley Holt (east of)
SBI	Whiston Bridge (west of)
SBI	Hawksmoor Nature Reserve
SBI	Gibridding Wood
SBI	Heathly Gore (south)
SBI	Heathy Gore (north)
SBI	Foxt Wood (north of)
SBI	Oldridge Farm (south-east of)
SBI	Ashbourne Hey
SBI	Foxt Banks
SBI	Upper Garston Rocks
SBI	Whiston Hall
SBI	Upper Cotton Dell
SBI	Whistonbrook

AWI – listed in Ancient Woodland Inventory, BAS – Biodiversity Alert Site, WTNR – Wildlife Trust Nature Reserve, SBI – Site of Biological Importance, SSSI – Site of Special Scientific Interest

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A moth
	A true fly
	Barn Owl
	Barn Swallow
	Brown Hare
	Brown long eared bat
	Brown trout
	Buff tailed bumble bee
	Common Bullfinch
	Common kestrel
	Common lizard
	Common pipistrelle
	Common snipe
	Common starling

	Common Toad
	Corn buttercup
	Dyer's Greenweed
	European otter
	European water vole
	Feathered gothic
	Good king henry
	Grass Snake
	Greater Butterfly-orchid
	Green Woodpecker
	Grey Wagtail
	House Martin
	House Sparrow
	Insect - Hymenopteran
	Knot Grass
	Lesser Spotted Woodpecker
	Little Kneeling Eyebright
	Mallard
	Northern Lapwing
	Pink waxcap
	Pipistrelle
	Reed bunting
	Rosy rustic
	Slow worm
	Small heath
	Song Thrush
	Spotted flycatcher
	Stock Dove
	Tree Bumble Bee
	Tufted duck
	Wall
	Western European hedgehog
	Willow Warbler
	Yellow Meadow Ant
	Yellowhammer
INV	American mink
	Canadian waterweed
	Greater Canada Goose
	Indian Balsam
	Japanese knotweed
	Rhododendron

E/ UK PS	A bat
	Barn Owl
	Bluebell
	Brown long eared bat
	Common kingfisher
	Common lizard
	Common pipistrelle
	Daubenton's bat
	Eurasian Badger
	European otter
	European water vole
	Grass Snake
	Natterer's bat
	Pipistrelle
	Slow worm

BAP – Biodiversity Action Plan Species, INV – Invasive weed species,
E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Semi-improved species rich calcareous grassland
- Semi-natural broadleaved woodland
- Scattered scrub
- Species poor hedgerows
- Tall ruderal vegetation

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
UCG	0.40	60
TR	0.03	4
SS	0.10	15
BW	0.12	18
OTHER	0.02	3
TOTALS	0.67	100

UCG – Unimproved calcareous grassland, TR – Tall ruderal vegetation,
SS – Scattered scrub, BW – Broadleaved woodland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	Red fescue *Festuca rubra*, sweet vernal grass *Anthoxanthum odoratum*, crested dog's tail *Cynosurus cristatus*, common knapweed, bird's foot trefoil *Lotus corniculatus*
Hedgerows/ trees/ scrub	Silver birch *Betula pendula*, ash *Fraxinus excelsior*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

Weeds listed under the Weeds Act 1959 including curled dock *Rumex crispus,* creeping thistle *Cirsium arvense* have been recorded within the tall ruderal vegetation.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of broadleaved woodland, scrub, hedgerows and possibly within the March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SK0406847271	Encroaching broadleaved woodland, needs management
2	SK0401747257	Encroaching tall ruderal vegetation needs management
3	SK0397147249	Requires additional botanical survey
4	SK0402647245	Requires management

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Semi-improved species rich calcareous grassland			x		
Semi-natural Broadleaved woodland				x	
Species poor hedgerows					x
Scattered scrub					x
Tall ruderal vegetation					x
Overall site importance			x		
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of the site and each habitat in terms of their potential loss to the wider countryside.

The site is bordered by domestic dwellings to the north with the remaining habitats consisting of species poor grasslands which are fairly well connected to the wider countryside by a network of hedgerows.

Unimproved species rich grassland are generally rare in the UK due to intensive agricultural practices that have resulted in declines of over 90% of unimproved/ species rich hay meadows in recent times.

The area has been classified as species rich due to the high floral biodiversity in patches and presence of species such as betony *Stachys officinalis*, small scabious *Scabiosa columbaria*, fairy flax *Linum catharticum*, salad burnet *Sanguisorba minor*, blue fleabane *Erigeron acer* and orchid species that would not thrive in areas that have been agriculturally improved. The sward also has frequent crested dog's tail, common bent *Agrostis stolonifera*, locally frequent tormentil *Potentilla erecta*, harebell *Campanula rotundifolia*, bird's foot trefoil and common vetch *Viccia sativa*. Although the area is classified as species rich there is encroachment from tall ruderal vegetation, hawthorn, ash, goat willow and silver birch scrub that will out-compete the uncommon floral assemblage over time. Although the site was surveyed in September the sward is very likely to support a more complex biodiversity feeding off its wealth of nectar and seed sources within the main flowering season from May to August.

The habitats present on site are uncommon in the UK, have fairly high biodiversity value and therefore are deemed to have a regional value within the matrix.

A number of European and UK protected species have been recorded within 2km and it is fairly likely that the site would support a limited number of the species including foraging bats and badger.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to

migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

It is recommended that the site is not developed due to the regional importance of species rich grasslands. It is recommended that the site has an appropriate management applied by strimming of the encroaching goat willow, silver birch and ash scrub as well as areas of rank tall ruderal vegetation, and mowing of the whole sward at least once a year.

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If trees, hedgerows and the grassland sward is to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has high potential biodiversity and fairly good connectivity to the wider countryside through the broadleaved woodland to the north and is not recommended for development. Therefore the site is attributed regional ecological importance. The site should also be resurveyed to quantify whether it qualifies for SBI status.

Although the site is not recommended to be put forward for potential development, if the site is considered for potential development the following surveys/ actions are however therefore recommended prior to any potential development works being carried out:

- Floral resurvey
- Vegetation removal at the appropriate time of year

FID 90

Table of Contents

FID 90

1. Introduction

1.1 Background

The Staffordshire Moorlands District Council has commissioned Lockwood Hall Associates to carry out an Extended Phase 1 Habitat Survey according to JNCC (2007) guidelines for FID 90 O.S grid reference SK 0385847020.

FID 90 is located south of Whiston village in the Staffordshire Moorlands District, surrounded by housing and agricultural land.

1.2 Survey

This baseline report has also been committed in taking into consideration the standard for ecological surveys set out in Guidelines for Ecological Impact Assessment in the United Kingdom (2006) and guidelines for Preliminary Ecological Appraisal (April 2013), published by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Figure 1

FID 90

Scale 1:1,135

2. Methodology

2.1 Introduction

Trevor Hall BSc (hons), MSc, MCIEEM carried out a walkover survey for FID 90 during September and October 2014 according to JNCC (2007) guidelines.

2.2 Aims

The aim of this survey is to ascertain in particular the presence of European, UK and UKBAP protected species/ habitats and common species inside the site, immediately surrounding and within 2km of the site, in accordance with CIEEM (2006), methodologies and the contract brief.

A desk study was instigated from available ecological records sources to determine the presence of all European, UK and UKBAP protected species, and European and UK sites designated for nature conservation within 2km of the site.

Therefore, both the desk study and walkover survey when used together culminate in an assessment into the value of importance for each ecological receptor found on site. The intention of these surveys being to determine the ecological value of the site as a prerequisite to potential development.

2.3 Mapping

The following Extended Phase 1 Habitat Survey map has been created using ArcGIS version 10.2.2 (2014).

All maps have been annotated according to the brief guidelines in accordance with the JNCC (2014) colour palette for ArcGIS, apart from one subjective annotation highlighting all trees with bat potential as a red spot instead of the usual green (see legend Appendix 1).

2.4 Desk study

The following statutory and non-statutory organisations were contacted with respect to the identification of existing ecological information in the vicinity, i.e. the survey area plus surrounding area within a minimum of 2 km from the site, following guidelines set out in the contract brief.

- Staffordshire Ecological Record
- RSPB
- British Trust for Ornithology (BTO)

Staffordshire Ecological Record is the primary archive for all ecological records in the Staffordshire Moorlands District area. Most records are up to date to the present day; however some groups such as BTO, local Lepidoptera groups and individual recorders submit their records annually or sporadically. Therefore all records are up to date to at least to December 2013.

In addition, a search for relevant nature conservation information was made on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) and on the National Biodiversity Network website (www.searchnbn.net).

2.5 Aerial photography

Remote sensing through aerial photography obtained from ArcGIS version 10.2.2 and Google Earth have also been studied to help identify local features that would not necessarily be seen or encountered during the walkover, as well as the potential connectivity of various habitats and geographical features that might influence the potential biodiversity of the site.

2.6 Field Survey

An Extended Phase 1 Habitat Survey was carried out in September/ October 2014 and covered the survey area shown in Figure 1. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2007) with target notes made to describe features of interest.

In conjunction with the Extended Phase 1 Habitat Survey, the potential for the site to support any legally protected flora or faunal species and/or floral or faunal species of nature conservation importance, e.g. European, UK and Biodiversity Action Plan (BAP) species was assessed.

Detailed surveys for other faunal species were not undertaken at this time, rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. Particular protected species identified within the desk study were not necessarily discussed within this report if the site was deemed unable to support the species in any way.

All Latin names for species are contained within this report apart from species listed within the desk study, which are detailed in Appendix 2.

All references for the guidelines and methodologies that are needed to carry out all relevant potential protected species surveys are listed in Appendix 3.

2.6.1 Bats

Mature trees can develop features such as rot holes, cavities, peeling bark, split limbs, woodpecker holes and climbing ivy which can allow bats to roost. Trees that had at least one of these features were deemed to have potential to support roosting bats and have been recorded during the walkover survey as such. Any remaining trees on site were either deemed too young or were observed to appear to have no features that would encourage bats to roost, but are considered within this report as being useful for foraging as part of a flight line and possibly for gleaning of invertebrates from species such as brown long eared bats and some *Myotis sp*.

Comprehensive building inspections were not carried out during the walkover survey. Buildings that were recorded on site were preliminarily assessed, often with binoculars where buildings were inaccessible, for bat roosting potential. Potential assessment was usually determined according to building structure, for example a warehouse or shed with corrugated roof and steel design is relatively unlikely to support roosting bats, whereas a derelict building made from bricks with missing roof tiles is recognised to have much more potential. All obvious or potential entrance points were however noted whenever observed.

2.6.2 Badger

The site was examined for field signs of badger and all habitats within the site and at least 30m from the site were searched for setts, especially if adjacent to semi-natural broadleaved woodland or similarly suitable habitat.

2.6.3 Reptiles and amphibians

The site was searched for ponds and standing water, ditches, rubble/ log piles and wet areas or any habitat that could help support amphibian and reptile populations.

2.6.4 Birds

The site was assessed for the potential to support breeding birds and opportunities to support European, UK and UK BAP protected as well as common bird species.

2.6.5 Incidental records

In addition any field signs or incidental sightings of all species were recorded as seen.

3. Limitations

The walkover survey as part of the Extended Phase 1 Habitat Survey was carried out at an appropriate time of year according to CIEEM guidelines (2006). The only limitations to the survey were that specific flora and fauna might have been missed due to their phenology.

There were no access or other issues at the time of survey that limited the scope of this survey.

4. Results

4.1 Desk study - Habitats

The following statutory and non-statutory protected sites designated for nature conservation were located within 2km of the site.

Table 1

SITE DESIGNATION	NAME
SSSI	Churnet Valley
SSSI	Froghall Meadow and Pastures
SSSI	Whiston eaves
AWI	Ashbourne Wood
AWI	Shirley Hollow
AWI	Harston Wood
AWI	Ruelow Wood
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AWI	Jackson Wood
AWI	Oakamoor CP
AWI	Murrel's Wood
AWI	Hag Wood
AWI	Banktop Woods
AWI	StraighthillsWood
AWI	Booth's Wood, Newhouse Wood
AWI	Moseymoor Wood, Cloughhead Wood, Whieldon's Wood, Massey's Wood, Blackbank Wood
AWI	Cotton Banks
AWI	Ashbourne Hey
AWI	Lock Wood/ Lockwood Waste
AWI	Bank Sprink
AWI	Gibridding Wood
BAS	Gorsey Wood
BAS	Bank Sprink
BAS	Garston House (north of)
BAS	Garston Villa (west of)
WTNR	Cotton Dell
WTNR	Side Farm Meadows
SBI	Harston Hill, Froghill Wharf
SBI	Lockwood Pastures
SBI	Fernylee Farm (south of)
SBI	Foxt Wood
SBI	Jackson Wood

SBI	Little Eaves Farm (south west of)
SBI	Whieldon's Wood
SBI	Garston Villa (east of)
SBI	Tank Wood
SBI	Kingsley Holt (east of)
SBI	Whiston Bridge (west of)
SBI	Hawksmoor Nature Reserve
SBI	Gibridding Wood
SBI	Heathly Gore (south)
SBI	Heathy Gore (north)
SBI	Foxt Wood (north of)
SBI	Oldridge Farm (south-east of)
SBI	Ashbourne Hey
SBI	Foxt Banks
SBI	Upper Garston Rocks
SBI	Whiston Hall
SBI	Upper Cotton Dell
SBI	Whistonbrook

AWI – listed in Ancient Woodland Inventory, WTNR – Wildlife Trust Nature Reserve, BAS – Biodiversity Alert Site, SBI – Site of Biological Importance, SSSI – Site of Special Scientific Interest

4.2 Desk study - Species

The following table illustrates all UKBAP, invasive species and European/ UK protected species found within 2km of the site.

Table 2

SPECIES TYPE	COMMON NAME
BAP	A flowering plant
	A moth
	A true fly
	Barn Owl
	Barn Swallow
	Brown birch bolette
	Brown Hare
	Brown long eared bat
	Brown trout
	Buff tailed bumble bee
	Common Bullfinch
	Common kestrel
	Common lizard
	Common pipistrelle

	Common redstart
	Common snipe
	Common starling
	Common Toad
	Common whitethroat
	Corn buttercup
	Dunnock
	Dyer's Greenweed
	Eurasian curlew
	European otter
	European water vole
	Feathered gothic
	Good king henry
	Grass Snake
	Greater Butterfly-orchid
	Green Woodpecker
	Grey Wagtail
	House Martin
	House Sparrow
	Insect - Hymenopteran
	Knot Grass
	Large red tailed bumble bee
	Lesser Spotted Woodpecker
	Linnet
	Little Kneeling Eyebright
	Mallard
	Meadow pipit
	Mistle thrush
	Northern Lapwing
	Pink waxcap
	Pipistrelle
	Reed bunting
	Rosy rustic
	Round fruited rush
	Sky lark
	Slow worm
	Song Thrush
	Spotted flycatcher
	Stock Dove
	Tree Bumble Bee
	Tree pipit
	Tufted duck

	Wall
	Western European hedgehog
	Willow Warbler
	Wood warbler
	Yellow Meadow Ant
	Yellowhammer
INV	American mink
	Canadian waterweed
	Greater Canada Goose
	Indian Balsam
	Japanese knotweed
	Rhododendron
E/ UK PS	Barn Owl
	Bluebell
	Brown long eared bat
	Common kingfisher
	Common lizard
	Common pipistrelle
	Daubenton's bat
	Eurasian Badger
	European otter
	European water vole
	Grass Snake
	Natterer's bat
	Pipistrelle
	Slow worm

BAP – Biodiversity Action Plan Species, INV – Invasive weed species,
E/ UK PS – European/ UK Protected Species

4.3 Field survey

4.3.1 Habitats

The following habitats were recorded during the walkover survey and their individual areas measured through ArcGIS version 10.2.2.

- Species poor hedgerows
- Scattered trees
- Species poor grassland

Table 3

HABITAT	AREA (HECTARES to 2 d.p.)	PERCENTAGE (%)
I	0.46	56
SI	0.29	35
OTHER	0.08	9
TOTALS	0.83	100

SI – Species poor semi-improved grassland, I – Improved grassland

4.3.2 Floral assemblage

No rare or endangered floral species were recorded at the time of survey. The floral assemblage present on site is consistent with typical common floral species encountered within these common habitats.

Table 4

HABITAT	DOMINANT SPECIES
Grassland/ tall ruderal vegetation	False oat grass *Arrhenatherum elatius*, cock's foot *Dactylis glomerata*, common nettle *Urtica dioica*, red clover *Trifolium pratense*, crested dog's tail *Cynosurus cristatus*, creeping bent *Agrostis stolonifera*
Hedgerows/ trees/ scrub	Hawthorn *Crataegus monogyna,* bramble *Rubus fruticosus agg*, ash *Fraxinus excelsior*

4.3.3 Invasive weeds

No noxious weeds such as Japanese knotweed *Fallopia japonica,* Himalayan balsam *Impatiens glandulifera* or any other flora listed in Schedule 9 of the Wildlife and Countryside Act 1981 were found at the time of survey.

4.3.4 Fauna

Breeding birds

No breeding birds were observed during the walkover survey and birds do not usually breed between September and February in the UK. However, a range of common birds are likely to nest in areas of scattered trees and hedgerows from March to August when birds in the UK normally breed.

4.3.5 Target notes

Table 5

TARGET NOTE	OS GRID REFERENCE	COMMENT
1	SK0379447020	Allotment/ garden complex

5. Evaluation

Table 6

Habitat	Ecological Importance				
	I	N	R	D	L
Species poor hedgerows					x
Scattered trees					x
Species poor grassland					x
Overall site importance					x
I=International, N=National, R=Regional, D=District, L=Local					

Table 6 illustrates the ecological importance of each habitat in terms of their potential loss to the wider countryside.

The site is totally surrounded by domestic dwellings to the north and species poor grassland with fairly good connections to the wider countryside through species poor hedgerows. The habitats present on site are particularly common in the UK, have fairly low biodiversity value and therefore are deemed to have a low value within the matrix.

Despite a number of European and UK protected species being recorded within 2km it is unlikely that the site would support most of the species. The exceptions could potentially include foraging bats and badger.

Additionally, species of flora could have been missed due to seasonal constraints such as vegetative die back, grazing or mowing and similarly fauna could have been missed due to migration or specific seasonal life cycles in which they might have been recorded at another time of the year.

6. Recommendations

Vegetation removal

All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

If at all possible it is recommended that as many trees and hedgerows are retained if the site is to be developed.

If trees and hedgerows are to be removed it is recommended that this is completed according to BTO guidelines (September to February) to avoid the breeding bird season and contravention of the aforementioned Act.

7. Conclusion

The site has mostly low biodiversity value overall in terms of area, is adjacent to a main road to the west and species poor grasslands but does have fairly good connectivity to the wider countryside through networks of hedgerows. Overall the site is attributed low ecological importance due to the lack of potential to support protected species.

The following surveys/ actions are therefore recommended prior to any potential development works being carried out:

- Vegetation removal at the appropriate time of year