

Preliminary Ecological Appraisal And Nocturnal Bat Survey

Pennycroft Lane,
Uttoxeter



Final Report

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Dave Haslam MSc MIEEM
Richard Pearce BSc (Hons) AIEEM

Staffordshire
Ecological Services
The Wolseley Centre
Wolseley Bridge
Stafford
ST17 0WT

Tel: 01889 880124



Project

Preliminary Ecological Appraisal and Nocturnal Bat Survey
Pennycroft Lane, Uttoxeter

Report No: P70.T99.12
Date: 25th September 2012

Description: Preliminary Ecological Appraisal, Preliminary Bat Roost Appraisal and
Nocturnal Emergence / Re-entry Surveys for Bats

Client Details

East Staffordshire Borough Council
Contact: Ranbir Sahota
Senior Economic Regeneration Officer
Economic Regeneration
Built Environment
East Staffs Borough Council

Authors

Principal Ecologist: Dave Haslam MSc MIEEM
Ecologist: Richard Pearce BSc AIEEM
(Natural England Bat Licence no. 20121506)

Checked by

Dave Haslam

Disclosure

The information which I have prepared and provide is true, and has been prepared and given in accordance with the guidance of my professional institution's Code of Professional Conduct, and I confirm that the opinions expressed are my true and professional opinions

Dave Haslam MSc MIEEM
Principal Ecologist
Staffordshire Ecological Services
Direct dial: 01889 880 124
Switchboard: 01889 880 100
Email: d.haslam@ses-gb.co.uk
Web: www.ses-gb.co.uk

This report has been prepared by an ecologist and does not purport to provide legal advice. You may wish to take separate legal advice.

Sections 4 and 5 of this report provide a concise ecological evaluation of the site and recommendations regarding ecological mitigation, compensation, working practices and licensing, where applicable.

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1 Introduction

1.1 Site Description

The 1.4ha site is located approximately 600m to the north of Uttoxeter town centre, on the eastern periphery of the town's main residential area.

The site is comprised of both artificial and semi-natural habitats. The artificial habitats consist of industrial buildings arranged around areas of tarmac car parking and a small area of mown amenity grassland with mature tree planting. Semi-natural habitats consist of a thin strip of first stage successional deciduous woodland that bisects the site and areas of spontaneous herbaceous vegetation. A location plan of the site is presented in Figure 1.1 and an aerial overview in Figure 1.2.

Habitats to the south and west are predominantly urban residential. Habitats to the north and east are predominantly agricultural / pastoral.

1.2 Proposed Works

The ecological surveys were commissioned to inform a planning application to re-develop the site for residential housing. A feasibility proposal is presented in Figure 1.3. However, this may be subject to alteration prior to final submission.

Briefly, the proposal consists of the following:

- Demolition and clearance of all buildings on the site
- Clearance of approximately 0.3ha of tall herb / scattered scrub
- Removal of several landscaping trees and mature self sets from the site
- Development of 35 residential dwellings, gardens and an access road on the site.
- Retention of a 0.1ha strip of woodland that traverses the site along the path of an open drain

1.3 Aims of Survey

Staffordshire Ecological Services Ltd. was commissioned by East Staffordshire Borough Council in June 2012 to undertake a Preliminary Ecological Appraisal of the site, including nocturnal bat surveys and checks for other protected species.

The aims of the survey and appraisal are as follows:

- Record and map habitats on the site
- Record dominant botanical species and check for invasive species
- Assess the presence, potential presence or likely absence of protected/BAP species presence
- Evaluate, where appropriate, the ecological features recorded
- Assess which ecological features may be subject to impact and advise on the need for any more detailed surveys in order to further establish the level of impacts
- Identify potential for contravention of statutory and non-statutory nature conservation legislation and policy
- Make recommendations regarding precautions, mitigation, enhancements and/or management to ensure compliance with statutory and non-statutory nature conservation legislation and policy

For the purposes of this appraisal, the 'site' as defined in Figure 1.1 and the immediate adjacent habitats which may be affected by the works were assessed. The 'survey area' includes the site, and accessible areas within approximately 30m radius of the site boundary.

Figure 1.1: Site location plan

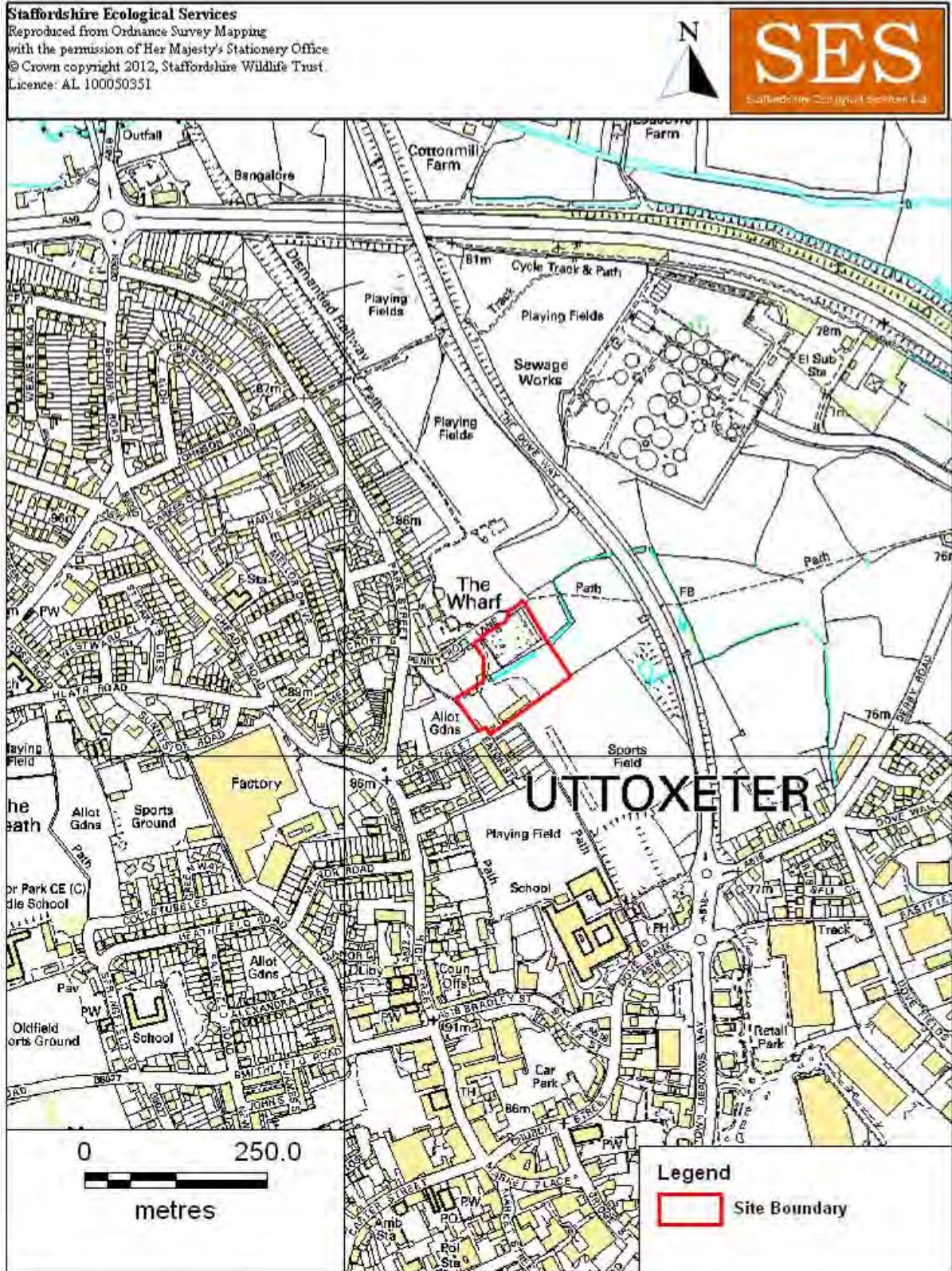


Figure 1.2: Aerial overview



Figure 1.3: Sketch drawing - feasibility plan



2 Methodology

2.1 Summary of Survey Methods

Survey Design

The following criteria were used to determine the type and extent of the surveys carried out:

- Habitats present both on and immediately around the site,
- Habitat connectivity between the site and the wider area (e.g. hedgerows, water courses, shelter belts etc.)
- The proximity and nature of local protected / notable species records and designated sites compiled in the Pre-survey Data Search (2.2)

Using the above criteria, the surveys as presented in Table 2.1 below were deemed sufficient to allow an effective appraisal of the ecological value of the site and the potential ecological impacts that may occur from the proposed works. In order to best achieve survey aims, all methodologies were in accordance with relevant established nature conservation guidance.

Assessment

In accordance with *Guidelines for Ecological Impact Assessment in the United Kingdom* (IEEM, 2006), the following geographical frame of reference is used when ascribing a value or potential value to an ecological resource:

- **International importance** – e.g. Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites
- **National importance** – e.g. Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR)
- **Regional importance** – e.g. Environment Agency regional biodiversity indicators, important features in Natural England Natural Areas
- **County importance** – e.g. Local Nature Reserves (LNR), Site of Biological Interest (SBI), Site of Importance for Nature Conservation (SINC)
- **Local or parish importance** – e.g. Biodiversity Alert Site (BAS), Site of Local Importance for Nature Conservation (SLINC), ecological features or resources such as hedge rows, woodlands, ponds

- **Within the zone of influence** - e.g. Locally or regionally common habitats that provide ecological resources within the site and / or immediately surrounding area e.g. scrub, tall herbaceous vegetation
- **Secondary value** – e.g. Features that are of little ecological interest in themselves but perform an ecological function such as areas of scrub that that may buffer more sensitive habitats from the effects of development or intensive farming.
- **Negligible importance** – e.g. urban areas, hard standing, intensely farmed agricultural fields.

Negative and positive impacts on nature conservation features have been characterised based on predicted changes as a result of the proposed activities. In order to characterise the impacts on each feature, the following parameters are taken account of:

- The magnitude of the impact
- The spatial extent over which the impact would occur
- The temporal duration of the impact
- Whether the impact is reversible and over what timeframe
- The timing and frequency of the impact.

Table 2.1: Summary of Survey Methods and Scope

Survey details	Appropriateness of Methods	Geographical extent
21st July 2012 Pre-survey Data Search	Timing: Suitable (any time of year) EEM Guidelines for Preliminary Ecological Appraisal (IEEM, 2012) Bat Surveys Good Practice Guidelines (BCT, 2012).	1km of site boundary; 10km for European Designated Sites designated for bat interest
26th July 2012 Extended Phase 1 Habitat Survey	Timing (Habitat Survey): Suitable (March-Oct) In accordance with the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Survey Methodology (JNCC, 1990). Extended to include survey for field signs of or habitat suitability for protected and notable species.	All areas within the site boundary. All accessible areas within 30m
26th July 2012 Preliminary Bat Roost Assessment	Timing: Suitable (any time of year) In accordance with the Bat Worker's Manual (Mitchell-Jones & McLeish, 2004), the Bat Mitigation Guidelines	All buildings within the application site boundary

	(Mitchell-Jones, 2004) and the Bat Surveys Good Practice Guidelines (BCT, 2012).	
Presence/Absence & Roost Characterisation Surveys		
12th August 2012 Dusk Emergence survey	Timing: Optimal (May-August) In accordance with the methodologies outlined in the Bat Worker's Manual (Mitchell-Jones & McLeish, 2004), the Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Surveys Good Practice Guidelines (BCT, 2012).	Two East Staffordshire Street Scene depot buildings and shared toilet block
13th August 2012 Dawn re-entry survey		
16th August 2012 Dawn re-entry survey		

2.2 Pre-survey Data Search

Staffordshire Ecological Record provided records of designated sites and protected species within 1km of the site boundary. Google maps and Ordnance Survey maps were reviewed.

2.3 Surveyor Information

Table 2.2: Surveyor information

SES Surveyors	Freelance Assistants
<p>Dave Haslam MSc MIEEM SES Principal Ecologist</p> <p>Holly Bowler BSc (Hons) MIEEM SES Senior Ecologist NE GCN Licence no. CLS00991 NE Bat Licence no. 20114896 NE Crayfish Licence no. 20111889</p> <p>Richard Pearce BSc (Hons) AIEEM SES Ecologist NE GCN Licence no. CLS001514 NE Bat Licence no. 20121506</p> <p>Charlotte Eva BSc SES Assistant Ecologist</p> <p>Sophie Foster SES Undergraduate Trainee</p>	<p>Pete Morris BSc Freelance ecologist</p> <p>Scott Petreck Trainee bat worker</p>

2.4 Field Survey

2.4.1 Extended Phase 1 Habitat Survey Methodology

The habitat survey was carried out on the 26th July 2012 in accordance with the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Survey Methodology (JNCC, 1990) – extended to include targeted searches for field signs of, and habitat suitability for, protected and / or notable species.

Each distinct habitat type on the site was mapped and described, with the descriptions including dominant and notable species and a record of habitat condition where appropriate.

Any invasive botanical species seen were also recorded.

2.4.2 Preliminary Roost Assessment Methodology- Bats

Table 2.3: Preliminary Roost Assessment Weather Conditions

Survey	Date & Time	Average Weather Conditions
Preliminary Roost Assessment of: 1) Buildings 2) Trees	26 th July 2012 10:00 – 14.00	Temp: 22 °C Humidity: 59% Wind speed: 0 Beaufort Wind direction: N/A Cloud cover: 5% Precipitation: None Light level: Unknown

A Preliminary Roost Assessment was carried out of all buildings on the site. The location of each building is shown in Figure 2.1. Table 2.54 below details the level of inspection carried out on each building.

Table 2.4: Building inspection

Building	Level of inspection
1 - Street Scene depot building	External inspection completed. 4 Separate roof voids, all inspected internally.
2 - Street Scene depot building	External inspection completed. Recent fire has rendered building unsafe. No internal inspection carried out. No separate roof void present.
3 - Shared toilet block	External inspection completed. Single roof void, inspected internally.
4 – Industrial unit	External inspection completed. Internal inspection completed, no internal void.

The external inspection included a thorough search for bat droppings on the ground, walls, window ledges, and other horizontal surfaces. Suitable entry and exit points were examined for signs of bats.

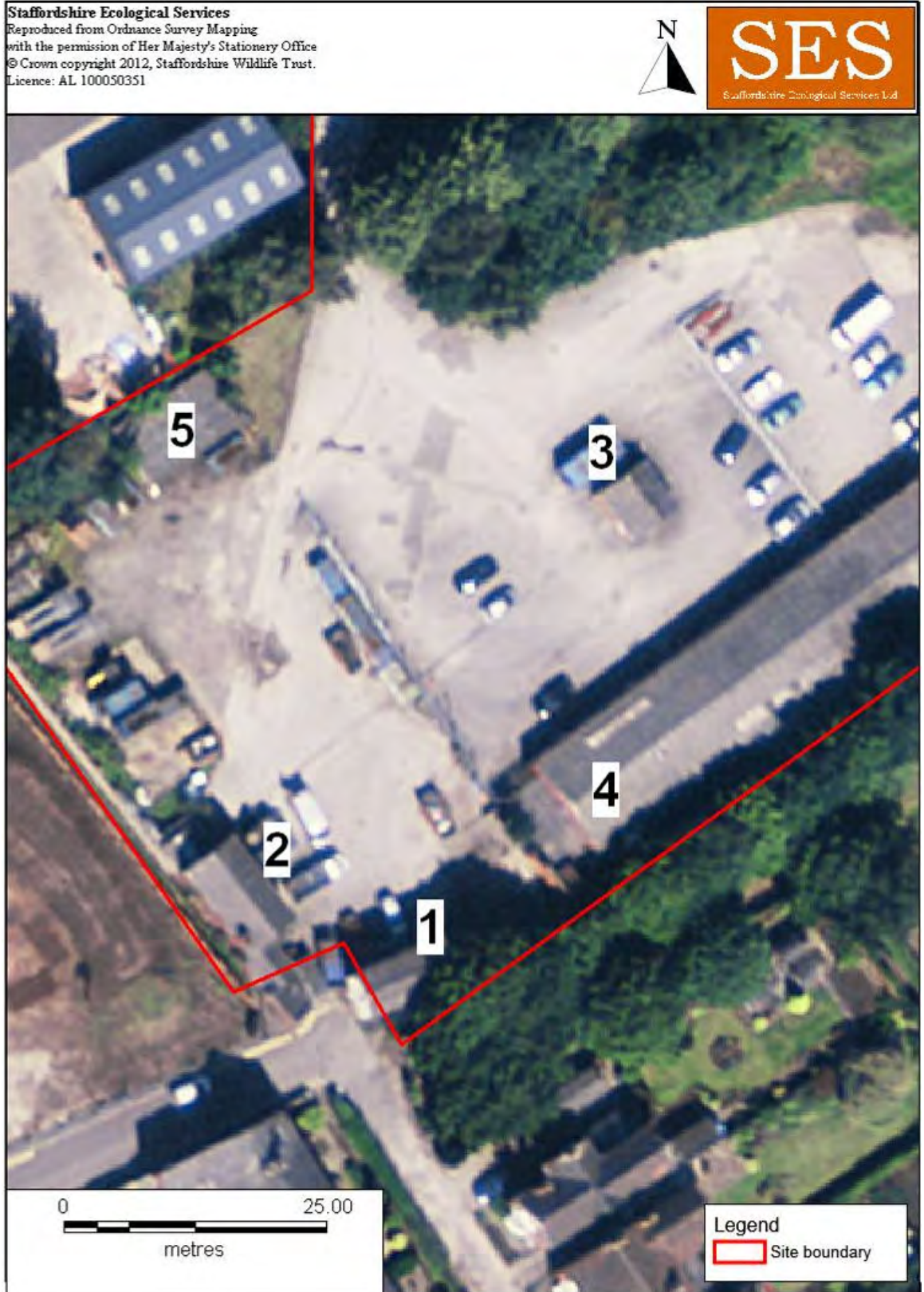
The internal inspection (where applicable) involved searching for droppings, insect remains, staining from bat fur oil and urine, scratch marks, a distinctive 'bat smell', live bats and bat corpses. Equipment used included ladders, torches, binoculars and an endoscope.

Factors affecting the general suitability of the building for bats were also noted. These include:

- Age and structural characteristics of the building
- Features that could provide potential access and roosting areas such as voids, gaps, crevices, cavities, gaps/voids in the brickwork, missing/broken roof tiles, ill-fitting doors and windows, etc.
- Ledges, beams and other areas that could provide potential feeding posts
- Level of disturbance (light, noise, etc.)
- Local landscape and habitat features that could be used by bats and the site's positioning in relation to flight corridors and potential foraging areas

All of the trees on the site were assessed with regard to their likelihood to support bats based on age, size, presence of cavities/crevices etc.

Figure 2.1: Building locations



2.4.3 Presence/Absence Survey Methodology - Bats

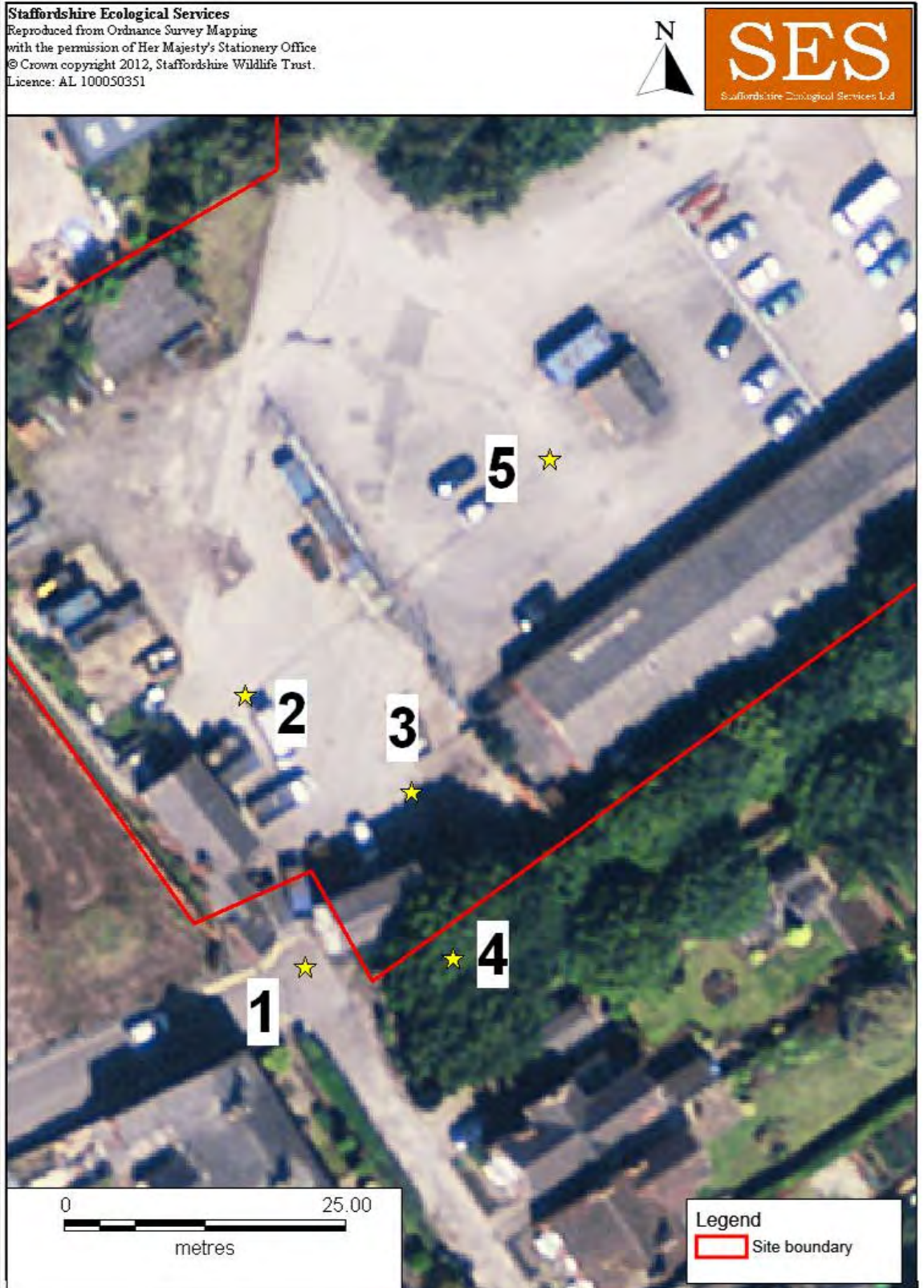
Table 2.5: Nocturnal Surveys Weather Conditions

Survey type	Date, Start & End Times	Start of Survey	End of Survey
Nocturnal surveys of Building 1 Building 2 Building 3 1) Presence/absence of roost	Emergence 12-8-2012 Start 20:20 Sunset 20:37 End 22:30	Temp: 22.5 °C Humidity: 72% Wind speed: 0 B'fort Wind direction: N/a Cloud cover: 0% Precipitation: None Light level: Unknown	Temp: 16 °C Humidity: 90% Wind speed: 0 B'fort Wind direction: N/a Cloud cover: 0% Precipitation: None Light level: Unknown
	Re-entry 13-8-2012 Start 04.15 Sunrise 05:47 End 05:47	Temp: 16.5 °C Humidity: 80% Wind speed: 0 B'fort Wind direction: N/a Cloud cover: 100% Precipitation: None Light level: Unknown	Temp: 13.5 °C Humidity: 85% Wind speed: 0 B'fort Wind direction: N/a Cloud cover: 100% Precipitation: None Light level: Unknown
	Re-entry 16-8-2012 Start 04:22 Sunrise 05:52 End 05:52	Temp: 13 °C Humidity: 80% Wind speed: 1 B'fort Wind direction: W Cloud cover: 90% Precipitation: None Light level: Unknown	Temp: 13.5 °C Humidity: 90% Wind speed: 1 B'fort Wind direction: W Cloud cover: 100% Precipitation: None Light level: Unknown

Presence/absence surveys of the culvert and adjacent trees were conducted in the form of a single dusk emergence survey and two dawn re-entry surveys on the 12th, 13th and 16th of August 2012. This level of survey is considered sufficient for moderate risk structures (BCT, 2012). During the surveys, 5 observers were stationed around the site in locations shown in Figure 2.2. The position of surveyors was the same for each survey visit. The emergence survey commenced 0.25 hour before sunset and lasted until approximately 2 hours after sunset. The re-entry surveys commenced 1.5 hours before sunrise and lasted until sunrise. The weather was suitable for bats to emerge and forage.

Surveyors were variously equipped with Anabat bat detectors, an EM3 bat detector and Bat Box Duet bat detector with MP3 recorder. The surveyors logged and mapped activity observed or heard on site and used their specialist knowledge to interpret the activity. The data recorded on the detectors/recorders was later analysed and cross-referenced with the surveyor's notes to provide species information.

Figure 2.2: Surveyor locations



2.4.4 Scoping Survey Methodology - Other Protected Species

The habitat survey was extended to include targeted searches for field signs of, and habitat suitability for, other protected and / or notable species on the site including water vole, otter . A check for breeding birds was carried out also. Habitat was assessed for its likelihood of supporting white-clawed crayfish.

2.5 Survey Limitations

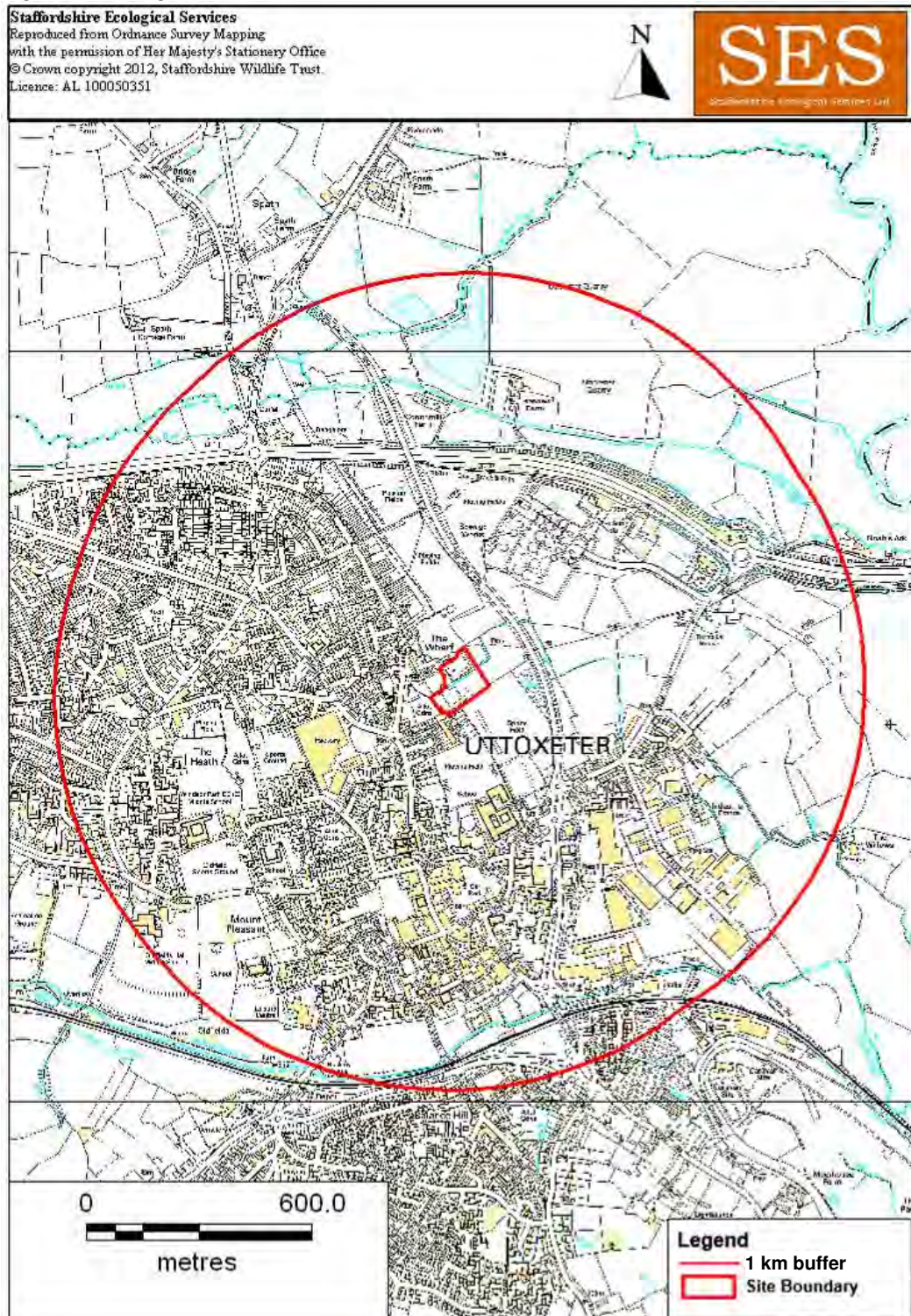
The street scene depot contains a two storey Victorian brick built building that has recently been on fire. The building was unsafe to enter, although it was possible to look through the windows to ascertain that the building had no separate roof void.

3 Results

3.1 Pre-survey Data Search

3.1.1 Designated Sites

Figure 3.1: Designated sites within 1km



Statutory designated sites

There are no statutory designated sites within 1km.

Locally designated sites

There are no non-statutory locally-designated sites within 1km.

Sites designated for bat interest

There are no nature conservation sites designated for their bat interest within 10km of the site.

3.1.2 Protected and BAP Species

Staffordshire Ecological Record (SER) holds a number of records for bats, water vole and otter within a 1 km radius of the site. There are also a large number of records for Schedule 1 and other notable bird species associated with the wetland habitats found at Uttoxeter Quarry, approximately 500m to the north. A full list of protected and BAP species records within 1km of the site is presented in Appendix B.

3.2 Field Surveys**3.2.1 Habitat Description**

A Phase 1 Habitat map of the site is presented in Figure 3.2 followed by target notes with brief descriptions of each distinct habitat type and ecological feature. Botanical species lists representative of each habitat type are provided in Appendix G. The site is comprised primarily of the hard standing and tall non-ruderal herbaceous vegetation with some scattered scrub and a strip of mixed woodland with follows the path of an open drain through the site.

Figure 3.2: Phase 1 Habitat Map

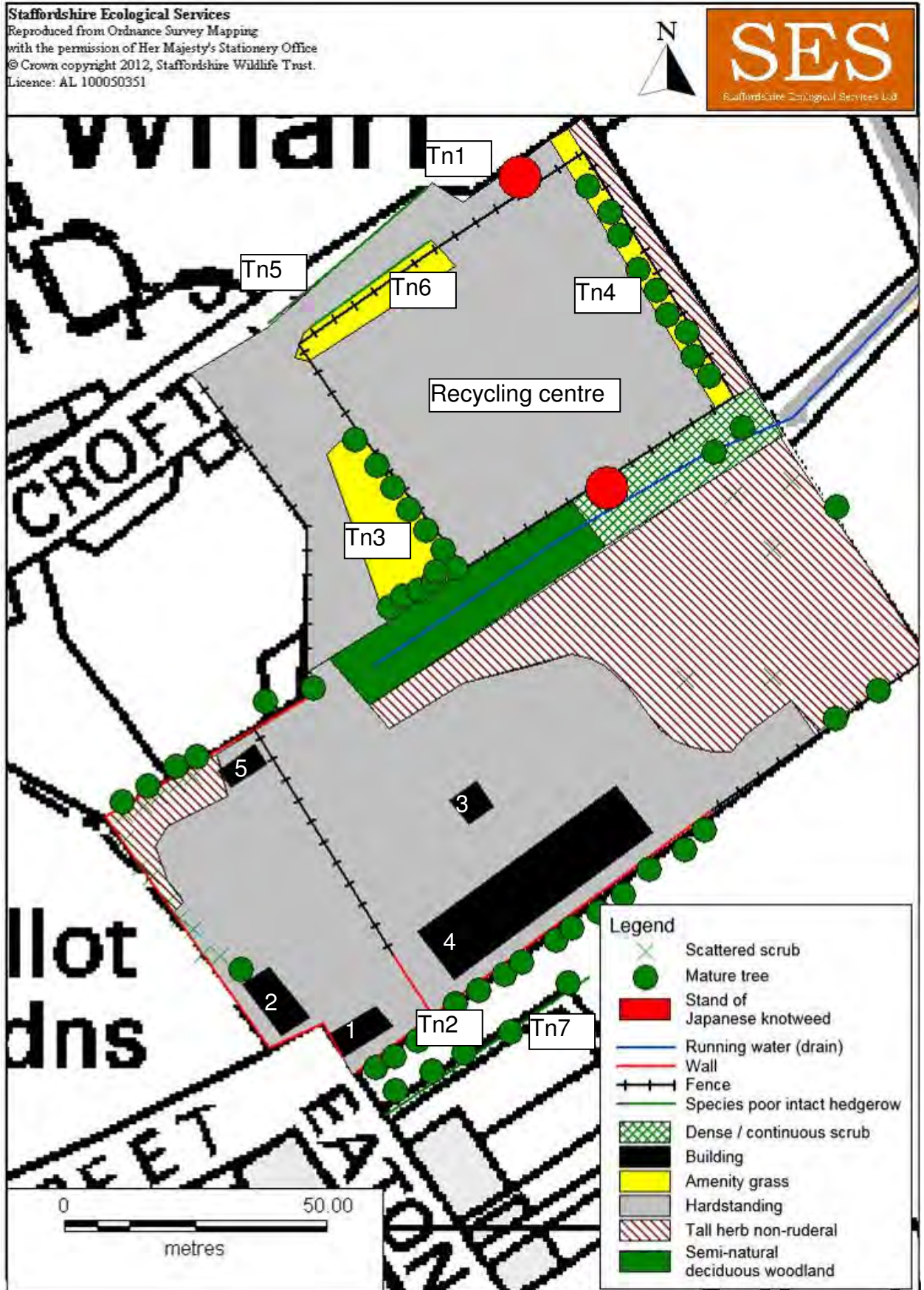


Table 3.1: Target Notes

Target note	Habitat Type/Feature	Description & Representative Species List
1-5	Buildings	Site buildings – detailed descriptions given in Section 3.2.2
TN1	Japanese knotweed	Adjacent to far side of palisade fence that surrounds recycling depot
TN2	Tree line	Avenue of mature beech trees on far side of site boundary wall. Not over mature, but some features which may be used by bats
TN3	Landscaping trees	Line of planted ornamental acer sp. along palisade fence of recycling depot
TN4	Landscaping trees	Line of semi-mature field maple and hybrid lime. Two bird boxes present in these trees
TN5	Species poor intact hedgerow	Native hawthorn hedge. No ground flora, species poor, intact. Single young elder present.
TN6	Species poor intact hedgerow	Very heavily managed boundary hedge. Hawthorn that has been dominated by ivy, which has killed off hawthorn in places. No ground flora

Habitat descriptions

Tall herb non-ruderal

Totalling an area of 0.35ha, this habitat is co-dominated by rank grasses including false oat grass and cocks foot along with large stands of rosebay willowherb, nettle and bramble. Relatively diverse mix of common species is present in lesser abundance including ribbed melilot, wormwood, oxeye daisy, and teasel. Scattered scrub is present in the form of hawthorn, elder, buddleia and blackthorn.

Semi-natural deciduous woodland

0.06ha of semi-natural deciduous woodland follows the path of the open drain through the middle of the site. The woodland appears early successional. The canopy is dominated by early mature sycamore along with frequent silver birch and occasional ash. The understory contains occasional hawthorn, goat willow and bramble. Ground flora is sparse and consists predominantly of common nettle, ivy and wood avens.

Dense / continuous scrub

The woodland gives way to continuous scrub that lines the open drain to the east. Totalling an area of 0.04ha, the continuous scrub is dominated by hawthorn. A stand of Japanese knotweed is present in this area.

Species poor intact hedgerow

TN5 and TN6 are two short lengths of hawthorn hedgerow approximately 40m and 30m respectively. No significant ground flora present as both are over amenity grassland. TN6 is very well managed and is heavily ivy infested, to the point where the ivy appears to have killed sections of the hedge.

TN7 is an ornamental beech hedge off the site.

Amenity grass

Approximately 0.04ha of regularly mown amenity grass are present on the site. These are dominated by perennial rye grass and have a low diversity of common herbaceous species present such as daisy, dandelion and ribwort plantain.

Invasive species

Two stands of Japanese knotweed were identified during the survey, and are shown in red on Figure 3.2.

Mature trees

There are several mature / semi-mature trees on the site outside the area of woodland. The largest collection is a row of mature ornamental acer species (TN3) planted in an area of amenity grassland along a palisade fence that surrounds the recycling depot. Another row of landscaping trees is planted on amenity grassland in the east of the recycling centre, including hybrid poplar and field maple. These trees contain two bird boxes.

An avenue of mature beech exists immediately to the south of the site's southern boundary. As this extends east, it becomes a single line of mature trees, containing native and naturalised species such as ash, willow sp., hawthorn, silver birch, elder and sycamore.

3.2.2 Preliminary Roost Inspection - Bats

Recorded status within 1km

There are Twenty five records of bats within a 1km radius of the site, the majority of which were taken in the last 20 years. The large majority of the records are for unknown pipistrelle species (*Pipistrellus pipistrellus* sens. lat.) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats, and include several records of known or potential roosts. There are also a small number of records for brown long-eared (*Plecotus auritus*) and myotis (*Myotis* sp.) species bats recorded in flight.

Surrounding Habitat

Habitats to the north and east include pasture, hedgerows, and open water, providing potentially excellent foraging habitat for bats. The site is well connected to these habitats by hedgerows and tree lines that emanate eastwards from the site.

Habitat to the west is predominantly urban and therefore less suitable for bats, although some foraging opportunities do exist, particularly in the form of residential gardens.

Evidence of presence on site

A description of each building and a general description regarding the trees on the site and their suitability for bats is given below.

Building numbers refer to those defined in Figure 2.1.

Building 1 – Street Scene depot building

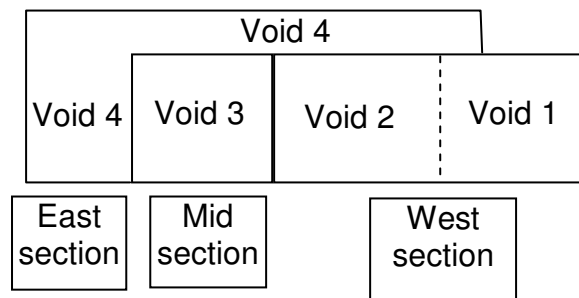
Plate 3.1: Street Scene Depot Building



Building 1 is a two storey brick built building with a corrugated fibreboard roof. The lower storey is in use as an office for East Midlands Council Street Scene. The upper storey is not used, has broken windows and is in a state of general disrepair. The building has a line of trees growing along its southern elevation which provide direct habitat connectivity with the semi-natural habitats that lie in the landscape to the east.

The building is comprised of three distinct sections, for reference here referred to as the western, mid and eastern sections. Each section has its own separate roof void, with the roof void above the western section is divided into two. Figure 3.3 shows a plan view layout of the building.

Figure 3.3: Plan layout of building 1 (not to scale)



The majority of the building appears to be of early 20th century construction, with later extensions added. The western section appears to be the original part of the building, and is constructed from single skin brickwork, which is rendered on the western gable end. The brickwork is in generally good condition, with few very few evident gaps and crevices which may provide potential access points and roosting locations for bats. The upper storey windows in this section are broken, and provide potential access points for bats and birds into the interior of the building. The lower storey windows are intact.

The roof covering above this section is constructed from corrugated fibre board (potentially asbestos) over a timber frame and forms and two enclosed void spaces (voids 1 and 2), separated by brick wall that contains a chimney breast. Voids 1 and 2 are accessible via loft hatches, although the loft hatch for void 1 was not in situ at the time of the survey. Externally, the roof covering appears in good condition and tight fitting, although some gaps along the ridge were evident from the interior, and appeared to allow water ingress. The timber frame is lined with hardboard, creating a crevice between the fibreboard roof covering and the hard board lining. The hardboard lining of the roof is quite damp, and large areas of it have fallen off and / or disintegrated. Dampness generally makes crevices such as those behind the hardboard lining undesirable as a roosting location for bats. Some crevices are present in the brickwork around the chimney breast that have potential to be exploited by roosting bats, although no evidence of bat occupation associated with them was found. A bird nest was found

in void 1, probably that of a pigeon. It would appear that the nesting bird had gained access to the roof void via the broken windows and open loft hatch.

No evidence of bat occupation such as droppings, corpses, scratch marks etc. was found in voids 1 or 2.

The mid section of the building is of similar age to the western section, although it appears to be an addition. The mid section is of the same construction, although the roof line is lower, resulting in a mid-section gable end. Most of the hard board lining in this area has peeled away and fallen off, apparently due to damp. Gaps were evident along the ridge and eaves which may provide potential access points for bats, although no evidence of bat occupation such as dropping, scratch marks or corpses were found in this void (void 3). Evidence of bird nests is present along the eaves in the form collections of grass / straw, and may be attributable to house sparrow (*Passer domesticus*) or starling (*Sturnus vulgaris*). This section also contains a large defunct wasp nest.

The eastern section of the building is a single storey addition that appears to be of later construction, although it is still constructed of single skin, solid brick walls. The roof over this section is constructed from interlocking clay tiles over a timber frame and is lined with felt. The extension forms an L shape around the building, forming a small storage area to the rear. The roof void above this section (Void 4) follows the shape of the building below. The brick walls and interlocking roof tiles are in excellent condition and contain very few obvious gaps or crevices that may be exploited by bats. In addition, this section of the building does not appear to be affected by damp. No evidence of bat occupation such as droppings, scratch marks, corpses etc. were found in void 4.

Overall, this building is judged to have **moderate potential for roosting bats** as it contains a number of potential access points and some crevice roosting habitat. However, the areas accessible by bats are quite damp.

Building 2 – Street Scene Depot Building

Building 2 is a Victorian brick built building with solid, single skin walls and a clay tile roof over a timber frame (Plate 3.2). The building is predominantly two storey, although there is a small single storey extension to the south, of similar construction.

This building has recently been on fire, and although the external brickwork and roof covering are intact, the damage to the timbers on the upper floor and roof make it too dangerous to enter. In addition, the building is suffering from subsidence.

Plate 3.2: Building 2



The building has no separate roof void, and the roof is unlined. Large windows result in the entire interior of the building being lit during the day, conditions that are generally undesirable to roosting bats. Building 2 possesses a number of cracks and fissures in its external brickwork as a result of the subsidence it has suffered. These appear deep enough to be exploited by crevice roosting bats. There are also gaps present in the roof tilting, and particularly along the ridge line, underneath and between the ridge tiles. As the roof is unlined, the gaps underneath the plain tiles are unlikely to be exploited by bats, as there is no crevice below in which to roost. However, gaps under ridge tiles are often exploited by crevice roosting species.

No access was available into the single storey extension; however its roof contained the same potential crevices below the ridge tiles as the main part of the building. This single storey section is well lit from above by adjacent street lighting and several cats were seen on the roof, basking on the ridge line during the survey.

The building has no immediate habitat connectivity with the surrounding landscape, but the tree line adjacent to building 1 is close by.

Overall, the **single storey part of building two is considered to have low potential for roosting bats**, whilst the **remainder of building 2 is of moderate potential**.

Building 3 – Shared toilet block

Plate 3.3: Shared toilet block



Building 2 is a modern cavity wall toilet block with a corrugated fibre board (possibly asbestos) roof. The roof covering is unlined and supported by modern timber purlins which are in excellent condition. Below the roof covering is an enclosed void which is accessed via an internal loft hatch. The roof covering is very well fitting, although a small gap is present at the apex of each gable end underneath a cap that fits over the weather boarding and the end of the ridge cover. This gap may potentially allow access for bats to the roof void, the wall cavity and there some crevices that exist in the internal block work at the top of the gable ends where the ridge purlins meet the wall tops.

No evidence of bat presence such as droppings, scratch marks, corpses etc. were found in the roof void.

The building is quite isolated and exposed in the middle of a car parking area, although the woodland on the site is close by and offers habitat connectivity with the semi-natural habitats that lie to the east.

Overall, the building is judged to have moderate potential for roosting bats due to the presence of a limited number of access points and crevice habitat.

Building 4 – Industrial units

Plate 3.4: Industrial units



Building 4 is a brick built industrial unit with a fibreboard roof. There is no separate roof void, with the underside of the roof covering visible form within the building. The walls are in excellent condition, with no obvious gaps or crevices that could be exploited by roosting bats.

Overall, the building is judged to be of negligible potential for roosting bats.

Building 5 – Garages

Plate 3.5: Garages



Brick built garages with tight fitting doors and a corrugated fibreboard roof that has very few roosting locations suitable for bats. Weather boarding hangs off end of corrugated roof panels and does not form a soffit box / crevice. A cat was seen on the roof during survey, a factor that is further likely to deter bats.

Overall, the building is judged to be of negligible potential for roosting bats.

3.2.3 Nocturnal Surveys - Bats

A summary map of recorded activity is presented in Figure 3.4, followed by a description of significant activity, including roosting locations and foraging areas in Table 3.2. The raw data for the results of the nocturnal surveys is presented in Appendix F.

Figure 3.4: Summary of map bat activity

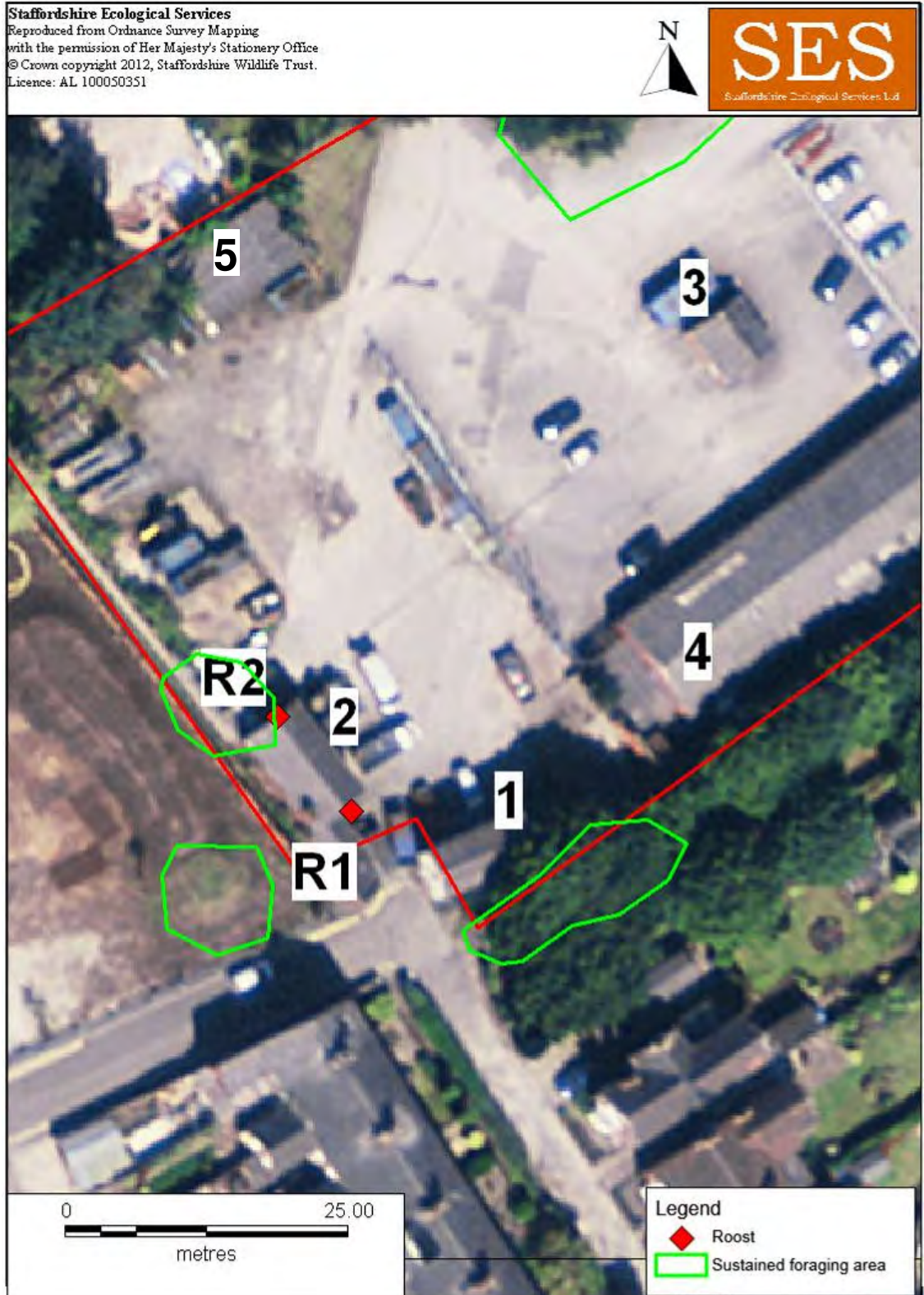


Table 3.2: Description of bat activity

Survey Date	Activity	Description
12 August 2012 Dusk emergence survey	<p>27 minutes after sunset. Single common pipistrelle bat emerge from Building 2.</p> <p>43 minutes after sunset. Single common pipistrelle bat emerge from Building 2.</p> <p>General foraging.</p>	<p>Emerge from R1 - crack in brickwork on Building 2.</p> <p>Emerge from R1 - crack in brickwork on Building 2.</p> <p>General foraging around site by common pipistrelle bats recorded by all surveyors. First bat recorded was 25 minutes after sunset, arriving at the site from the south east. Most foraging generally intermittent and by single bats, however sustained foraging recorded under canopy of tree line to the south of Building 1.</p>
13 August 2012 Dawn re-entry survey	<p>33 Minutes before dawn. Single common pipistrelle bat return to roost in Building 2.</p> <p>28 Minutes before dawn. Single soprano pipistrelle return to roost in Building 2.</p> <p>Occasional foraging / commuting.</p>	<p>Roost in R1 – crack in brickwork on southern gable of Building 2 (Plate 3.6).</p> <p>Roost in R1 – crack in brickwork on southern gable of Building 2 (Plate 3.6).</p> <p>Very intermittent foraging recorded by all surveyors. Virtually all activity recorded attributable to common pipistrelles. However, single passes by brown long-eared and soprano pipistrelle bats were recorded.</p> <p>Main areas of foraging were under the canopy of the tree line to the south and along the alleyway and over gardens to the south west corner (constructed after aerial photograph was taken).</p>
16 August 2012 Dawn re-entry survey	<p>43 Minutes before sunrise. Two common pipistrelle bats swarm around northern gable of Building 2.</p> <p>42 minutes before sunrise. Single common pipistrelle bat return to roost at in Building 2.</p> <p>Sustained foraging</p>	<p>Swarm around gable end, but did not enter.</p> <p>Roost in R2 – area of missing brickwork on northern gable of Building 2 (Plate 3.7)</p> <p>Main areas of sustained foraging activity recorded above alley way / tree to north west of Building 2, over</p>

		the garden and alleyway (not yet constructed on aerial photograph) to the South West of Building 2 and under canopy of tree line to south of Building 1. Foraging predominantly attributable to lone common pipistrelle bats, with occasional passes by soprano pipistrelle bats recorded.
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Plate 3.6: Roosting location on south gable of Building 2



Plate 3.7: Roosting location on north gable of Building 2



3.2.4 Nesting Birds

Recorded status

There are also a large number of records for Schedule 1 and other notable bird species associated with the wetland habitats found at Uttoxeter Quarry, approximately 500m to the north. These represent the closest bird records held by SER to the site.

Surrounding Habitat

On site penitential bird nesting habitat consists woodland, landscaping trees and the area of tall herb vegetation which contains some scattered scrub.

Evidence of presence on site

Past evidence of bird nesting was found in the eaves and roof space of Building 1, although these nests did not appear to have been recently active, and the initial site inspection was carried out during the main bird nesting season. The vegetation in the tall herb / scattered scrub area was too dense to search thoroughly, although no obvious nests were observed.

All of the mature trees and scrub within the site boundary and the tree line that lies adjacent to the site's southern boundary are potential nesting sites, although no active nests were observed during the survey.

3.2.6 Water Vole and Otter

Recorded status within 1km

There are three records of water vole (*Arvicola amphibius*) within 1km of the site. All of the records are over 10 years old, with the closest being 755m away on the River Tean, which shares no hydrological connection to the site. The drain that flows through the site is a tributary of the Picknal Brook, for which records of water vole as recent as 2006 exist. There are no records of Otter within 1km of the site, although

there are records further afield and otter have territories that run into 10's of Km.

A previous survey of the length of the drain that flows for 170m eastwards from the site was surveyed for otter and water vole by SES in 2011 in conjunction with the proposed Dove Way Phase 1 development (SES Report T36.T46.11 Phase 1 Habitat Survey and Protected Species Scoping Report, Dove Way, Uttoxeter). The 2011 survey found no evidence of otter or water vole.

Habitat

An underground land drain exits into an open concrete channel on the site. The concrete channel has no substrate atop the concrete bed, and appears devoid of wildlife. With no burrowing opportunities, it is highly unsuitable for water vole. Similarly, the drain offers no foraging potential for otter, and as it is fed by an underground pipe, has no potential as a commuting corridor.

Evidence of presence on site

No evidence of water vole or otter presence was found at the site.

3.2.7 White-clawed Crayfish

Recorded status within 1km

None

Surrounding Habitat

The drain on the site is a tributary of the Picknal Brook, which has recent records for white-clawed crayfish.

Evidence of presence on site

The drain that flows through the site is concrete, has no substrate and therefore lacks refugia for crayfish. It is therefore considered to be highly unsuitable for this species.

4 Evaluation and Impacts

The following section provides an indication of the ecological value of features present. The valuation is based on the Guidelines for Ecological Impact Assessment (IEEM, 2006).

4.1 Constraints on Survey Information

Bats, birds and badgers are highly mobile and the status of the site regarding any of these species may alter over time. The relevance of any survey information included in this report, and the conclusions and recommendations drawn from it, therefore degrades over time.

4.2 Constraints on Equipment Used

Due to an unforeseen equipment shortage, Surveyor 4 was not able to record bat calls for later analysis and had to rely on carrying out species ID in real time using a heterodyning bat detector. This is not considered a major constraint as no emergence or re-entry activity associated with the buildings was observed by Surveyor 4.

Data recorded on the detectors used by the remainder of the surveyors indicated that the large majority of the commuting and foraging activity was attributable to common pipistrelle bats. These results are comparable to those recorded by Surveyor 4.

4.3 Designated sites and surrounding habitats

Evaluation

No sensitive habitats or designated sites are within the predicted zone of influence of the proposed development. The drain that runs through the site is a tributary of the Picknal Brook, which has recent records of white-claw crayfish.

The site also contains Japanese Knotweed.

Impacts

Any equipment brought to the site has the potential to introduce crayfish plague into the waters of the drain, and eventually the Picknal Brook. This has the potential to devastate native white-claw crayfish populations in the brook. The removal of soil from the site has the potential to spread Japanese knotweed off the site.

However, the implementation of appropriate precautions regarding pollution and bio-security should result in a very low risk of negative impact on surrounding habitats and designated sites.

4.4 On-site Habitats

Evaluation

A large proportion of the site is comprised of industrial buildings and hard standing which are in themselves of negligible conservation importance. However, the surveys have confirmed Building 2 to be a bat roost and Building 4 to have been used by nesting birds in the past. Evaluation of the site with regard to bats and birds is discussed in Sections 4.5 and 4.6 respectively.

The woodland on the site is early successional woodland and extremely limited in its extent. As such, it is not considered to be 'of importance' and therefore not Staffordshire Biodiversity Action Plan (BAP) or UK BAP priority habitat. The two short lengths of native hedgerow to the north of the site, although species poor, do meet UK BAP habitat criteria. However, due to their species poor status and lack of connectivity to other hedgerows their importance is considered to be limited to the site and its immediate surrounds.

None of the remainder of the habitats on the site are UK or Staffordshire BAP habitats of importance, and none meet Site of Biological Importance criteria.

The areas tall herb vegetation, scrub and woodland are considered to be of importance within the site and its immediate surrounds as they represent the site's only semi-natural habitats, and are likely to provide invertebrate habitat and a foraging resource for bats and birds, as well as potential bird nesting areas. They are not considered to be of importance beyond this scale as the area concerned is small and these habitats are common and widespread at a local, regional and national scale.

Off the site, the mature tree line to the south is considered to have importance with regard to the site and its immediate surrounds as the survey showed that it provides functionality in terms of foraging and commuting routes for local bat populations and may provide a nesting site for breeding birds.

Impacts

The demolition of Building 2 will result in the loss of a bat roost. This is discussed in further detail in section 4.5 Bats.

Of the habitats which are of importance within the site and its immediate surrounds, the woodland and continuous scrub which line

the drain are to be retained, although the tall herb non-ruderal vegetation, scattered scrub and some mature trees away from the drain are to be lost. The loss of these habitats is considered to be of high impact within the site, as they provide a large proportion of the site's non-artificial habitat and are suitable for a number of invertebrate species as well as providing foraging areas for birds, bats and small mammals.

However, the extent of these habitats on the site is very limited, and they are considered to be common and wide spread at a local, county and regional scale.

Therefore, the impact resulting from the loss of these habitats is considered to be low at a local scale, and negligible at a regional and county scale.

4.5 Bats

Evaluation

Building 2 provides satellite roost and / or day roost for low numbers of common and soprano pipistrelle bats that are making use of gaps in the brickwork of the building in which to roost. Both types of roosts are used throughout the summer months. Satellite roosts are usually used by breeding females from nearby associated maternity colonies, day roosts are generally occupied by small numbers / single male bats (BCT, 2012).

None of the other buildings on the site appear to be of value for roosting bats.

None of the trees on the site appear to have features commonly associated with roosting bats. However, the tree line immediately to the south of the site contains mature trees which possess some splits, fissures etc. which may be exploited by bats in which to roost.

The tree line to the south of the site appears to be used by small numbers of common pipistrelle bats as a foraging resource. It would seem reasonable to assume that the woodland that lines the drain which runs through the site, and the areas of tall herb vegetation to the east are also utilised by bats for foraging, although no survey was carried out to confirm this.

Bat Status at Local and National Level

Common and soprano pipistrelle bats are considered to be relatively common throughout the majority of Britain. The status of these species within Staffordshire is similar to those at a national scale.

Impacts

The demolition of Building 2 would result in the loss of a small day roost and / or satellite roost used by common and soprano pipistrelle bats and may result in the injury or death of small numbers of common or soprano pipistrelle bats. This will have a large negative impact on the population of pipistrelle bat species at the site scale, and a predicted small negative impact on common pipistrelle bats at a local level.

Impacts on common and soprano pipistrelle bats at county scale and above are considered negligible.

Demolition of Building 2 without first acquiring the relevant Natural England licensing will result in committing an offence under the Habitats Regulations 2010.

4.6 Nesting Birds

Evaluation

The site contains potential breeding habitat associated with common bird species. Building 4 would appear to have had previous nesting activity by either starling or house sparrow, which are both Birds of Conservation Concern 3 red list species (RSPB, 2009).

The tall herb / scrub vegetation has potential to be used by common bird species as a nesting site, although no obvious nests were observed.

The woodland strip that follows the path of the drain through the site provides a multitude of potential nesting habitat.

In addition, the two bird boxes mounted to trees in the recycling centre also provide potential nest sites, although they do not appear to be in use at the time of the survey.

Impacts

Demolition of Building 4 may result in the loss of sparrow and / or starling nesting habitat. The predicted scale of impact on populations at site level is moderate, as although there are a small number of nests involved, there are few similar opportunities on the site. The predicted scale of impact is negligible at a higher scale.

Removal of the scrub / tall herb vegetation may also have a negative impact on small numbers of common nesting birds, although due to the common nature of this habitat at a local scale, the impact is considered low. None of the landscaping trees appeared to be used as nest sites and their removal is considered to be of low impact to breeding birds.

Demolition / disturbance / removal of any buildings or vegetation that contains an active bird nest of any species will result in committing an offence under the Wildlife and Countryside Act 1981 (as amended).

4.8 Water Voles and Otters

Evaluation

The site is of negligible value to otter and water vole.

Impacts

The risk of negative impact to water vole and otter is negligible.

4.9 White-clawed Crayfish

Evaluation

The site is of negligible value to native fresh water white-clawed crayfish.

Impacts

There is low potential for negative impact to freshwater white-clawed crayfish off the site, should equipment or materials contaminated with crayfish plague enter the drain. This potential can be easily mitigated by following appropriate sterilisation procedures.

5 Recommendations & Mitigation

It should be noted that all recommendations are provided as information only and specialist legal advice may be required. The conclusions of this report are based on current information. If works are delayed for more than one year, reassessment may be required.

Further Actions

- 5.1** In order to avoid committing an offence under the Habitats Regulations 2012, a Natural England License regarding bats will be required to cover the demolition of Building 2.
- 5.2** The Natural England license will require the formulation of a relevant mitigation strategy. In order to enable a planning decision, an outline mitigation strategy is provided in section 5.5 below. However, this strategy may be subject to alteration under consultation from Natural England during the licensing process.
- 5.3** It is recommended that standard precautions regarding protected and notable species, pollution and bio-security as detailed in section 5.x are followed throughout the development.
- 5.4** It is recommended that, where possible, recommendations regarding habitat replacement and enhancement detailed in sections 5.16 – 5.24 are implemented.
- 5.5** Bat Mitigation Measures

The mitigation proposed for the roost is subject to agreement from the relevant licensing body, in this case, Natural England, and may be amended. Mitigation is designed to provide optimal conditions for the species present onsite, as determined by the surveys covered in this report. Any mitigation agreed under the licence will become a legal requirement and the licence must be acquired before any of the following works can legally take place.

NB: Reference to the word ‘Ecologist’ signifies either the licensed ecologist or their accredited agent (if applicable).

5.5.1 Timing of Works

The demolition of Building 2, or any other works that may affect bats, must be timed to commence during the period when bats are least likely to be present and least vulnerable. Work should be started

during the period when bats are coming out of hibernation, but not yet rearing young (March/April) or once bats have finished breeding but are not yet in hibernation (September/October).

5.5.2 Works to be undertaken by Ecologist

Capture and Exclusion

Prior to works commencing on Building 2, three bat boxes suitable for crevice roosting species will need to be installed on retained mature trees on the site, or immediately adjacent to it, such as the mature tree line that lies to the south. It is understood that the tree line to the south is under the ownership of East Staffs Borough Council, and no additional permissions or agreements will be required.

The ecologist should conduct pre-works inspections of Building 2 to look for bats. Due to the instability of the building, the inspections may take the form of further emergence / re-entry surveys and inspections of external brickwork crevices with an endoscope. If any bats are found, the ecologist should assess whether the numbers found are in accordance with the numbers specified in the required licence. If numbers or species not covered by the requisite license are found, Natural England should be consulted immediately, works may have to be delayed and the mitigation strategy altered appropriately.

If species and numbers found are in accordance with the license, the process of excluding bats from the building will begin. Any external crevices that have potential to be used by bats should be inspected with an endoscope and if it is 100% clear that a crevice is absent of bats, it should be blocked with a safe and suitable material e.g. Rockwool. Where crevices cannot be determined to be free of bats, exclusion devices will be constructed using approved methods outlined in the Bat Worker's Manual i.e. Constantine devices or acetate flaps (whichever is most suitable). Example exclusion devices are shown in Figure 5.1. As the interior of the building cannot be checked, any gaps etc. that may allow bats access to the interior should be excluded using similar devices.

Any exclusion devices should be left in place for the period stated in the license, usually 5 consecutive days and nights when the night-time temperature has not dropped below 8°C, or where there has been no prolonged cold heavy rain, snow, high winds, etc.

Once the ecologist is satisfied that all practical efforts have been made to exclude bats from the building, the licensed works can commence. The ecologist should give a site induction to workers/contractors on bat presence and provide the Method Statement and a summary sheet of guidance for workers / contractors. The talk would cover bat legislation,

bats onsite, where bats might be present, identification of a bat, what do to when encountering a bat, avoiding handling, etc.

A 'soft strip and dismantle' of the existing roof and areas of brickwork that may harbour bats should be carried out under the supervision of the ecologist, who will advise on the careful hand removal of roofing materials and sections of brickwork where bats may be present. Where it has not been possible to exclude any bats using the previously detailed methods, bats will be removed with gloves or a hand net. The bat will be checked for injury and placed in a draw-string cloth bag and transferred to the near by pre-installed bat boxes.

Figure 5.1: One way exclusion devices

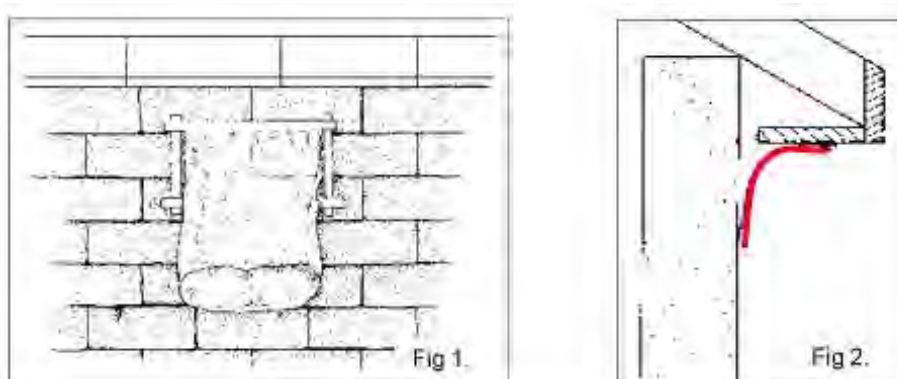


Fig 1. Constantine device constructed from polythene sheeting rolled into a tube / cone using double sided cello tape and attached to surface using gaffer tape.

Fig 2. One way flap constructed from acetate sheet or rectangle of polythene sheet secured at top and sides.

Designs based on design shown in Bat workers manual and online various websites.

5.5.3 New roost creation

The bat boxes installed on the adjacent mature trees should be made of woodcrete or other durable materials which are able to last the life of the development and should be suitable for crevice roosting bat species, such as common and soprano pipistrelle. It is recommended that three boxes should be erected. The precise location, height and orientation of the boxes should be based upon advice from the ecologist, and will be stipulated in the Natural England license.

In addition to the bat boxes, it is recommended that four of the proposed dwellings contain roosting space suitable for crevice roosting species. This will 'like for like' replace the roosting habitat currently available to bats in Building 2, which will be lost upon demolition.

It is recommended that the replacement roosting space should take the form of 'Bat Bricks' installed as high as possible on the gable ends on four of the new dwellings. The bat bricks should be installed to take advantage of nearby habitat features, and in locations so that they are not lit with street lighting. Suggested locations for the bat bricks are shown in Figure 5.2, and example of a bat brick in Figure 5.3. Although usual advice is to install bat features on a southerly aspect, it is recommended that north facing bricks should also be installed to provide a variance in temperature regime. A bat was observed roosting in a north facing crevice on Building 2 during the surveys.

Figure 5.2: Proposed location of bat bricks



Figure 5.3: Example bat brick



Suitable for Pipistrelle species bats, available in a range of different brick finishes, available from Ibstock.

Protected Species Precautions

- 5.6** Any increase in badger activity (fresh excavation of setts, dung pits etc.) close to working areas should be immediately reported to consultants or the local badger group and their advice implemented.
- 5.7** In order to avoid contravention of the Wildlife and Countryside Act 1981 (as amended), any site clearance of areas that could be potentially be used as nesting sites, such as buildings, tall vegetation and trees should be timed to avoid impact on nesting birds. The nesting season generally runs from March to August, but is species-dependent. Autumn through to very early spring clearance is a well-established means of preventing this impact. If this is not possible, further advice from an ecologist should be sought, as works to certain areas of the site may be permissible if a pre-works inspection confirms the absence of nesting birds.

- 5.8** Please note that timing of works to Building 2 will be constrained due to presence of a bat roost and works to this building are only permissible during the times stipulated in the required Natural England license.

Invasive Species Precautions

- 5.9** All works on the site should adhere to Environment Agency guidance regarding Japanese Knotweed. The relevant guidance can be found in The Knotweed Code of Practice (Environment Agency, 2006) which may be downloaded for free from the following internet link:

http://www.environment-agency.gov.uk/static/documents/Leisure/japnkot_1_a_1463028.pdf

General Precautions

- 5.10** All staff and workers on site, including sub-contractors, should be made aware of species and habitat protection issues at site induction talks. Work must stop immediately and Natural England contacted if any protected species are found onsite. (Tel: 0300 060 0676 – West Midlands Office). Staffordshire Ecological Services (SES) can also be contacted at 01889 880125.
- 5.11** Follow the advice provided in Appendix D to avoid the spread of crayfish plague in streams and rivers.
- 5.12** Site staff should be made aware that all snakes, slow worms and other reptiles are protected from deliberate killing. If any are found, they should be safely removed outside of the working area.
- 5.13** Trees should be retained following relevant guidance, which is outlined in BS 5837:2005 Trees in Relation to Construction. No work, storage, damage, soil-level changes, soil compaction or heavy machinery should occur within the Root Protection Zone of the trees to be retained. The trees to be retained should be securely fenced off. Avoid destruction, displacement, removal or cutting of any plant/tree to be retained.
- 5.14** It is recommended that any trenches or other excavations left open for more than 12 hours should be provided with an escape ramp (simply a plank of wood with no step at the base, reaching up to ground level or slightly above) for any wildlife to be able to escape.
- 5.15** All proposed work must strictly be in accordance with all relevant Pollution Prevention Guidelines (PPG) published by the Environment Agency including but not limited to PPG1 (general) and PPG6 (work at

construction & demolition sites). Contingency plans should be drawn up to address chemical spillage, collision, etc.

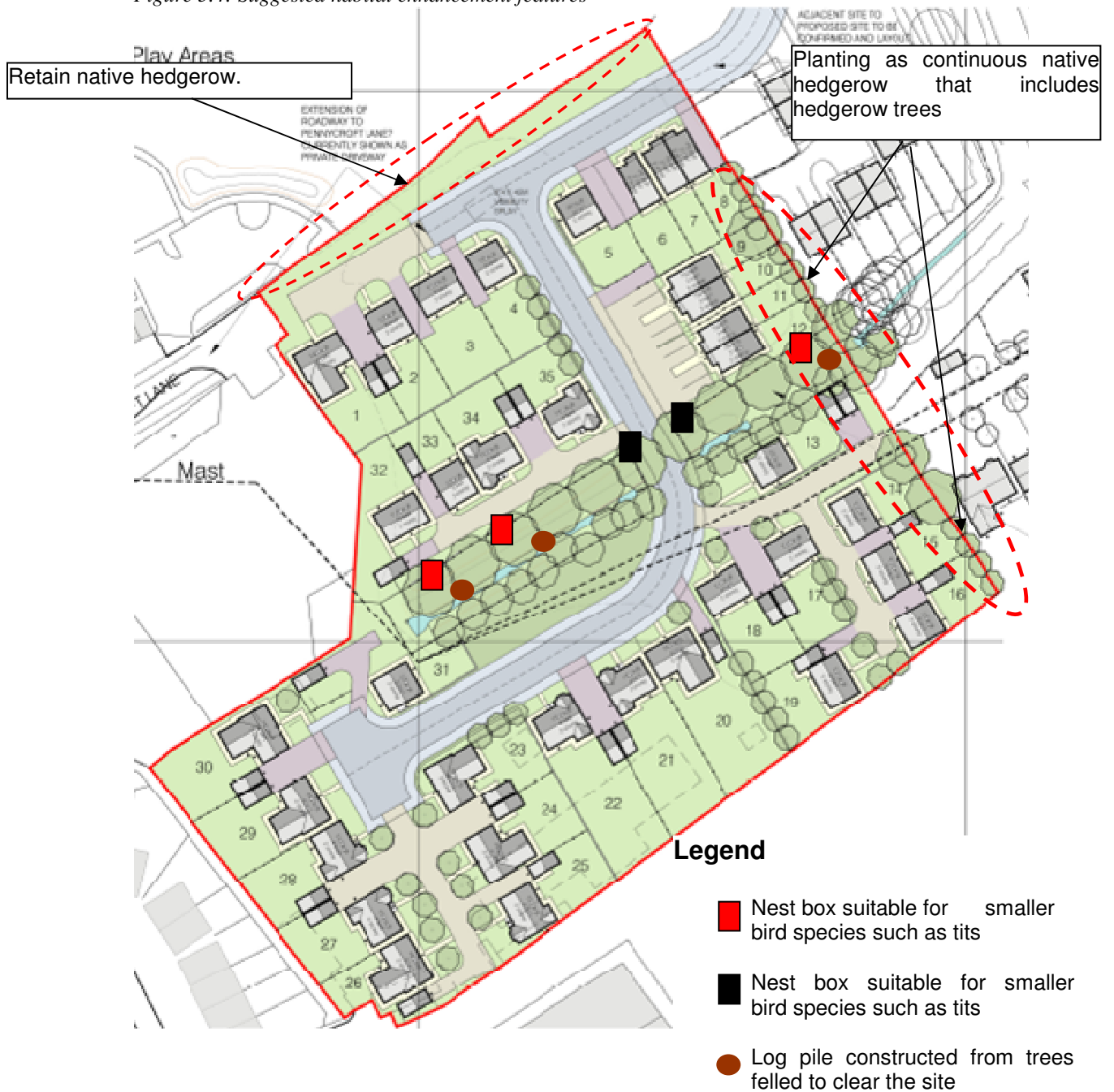
Habitat Replacement/Enhancement

- 5.16** It is suggested that the value of the site as a foraging resource for bats may be enhanced by including 'bat friendly' planting where possible in the landscaping scheme. Plants from the list supplied in Appendix E may be used. Native plants should be of local provenance where possible, and of genuine native British provenance in any case. Incorporate plants that produce berries or nectar into the scheme.
- 5.17** Encourage the linkage of habitats through the planting of trees, shrubs scrub and/or native hedgerows. Wherever possible these should form lines and avenues with some width and density of planting. A diversity of native woody species and hedgerow herbs would support the greatest diversity of invertebrates.
- 5.18** If at all possible, include areas that may be left unmanaged to create 'wild' areas on the site. Target areas include the strip of retained woodland in the centre of the site and surrounding area immediately to the south and area of landscape grass to the north of the site.
- 5.19** When clearing trees from the site, try and retain as much cut wood as possible in the form of small log piles, which may be placed in the retained woodland. Small log piles might be beneficial to small mammals, amphibians, reptiles and invertebrates.
- 5.20** Retain the northern most species poor intact hedgerow (TN5, Figure 3.2)
- 5.21** By way of mitigation for the loss of the length of species poor intact hedge identified by TN6, Figure 3.2, plant the proposed tree line planted along the eastern boundary of the site with a native hedgerow comprised of species such as hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), dog rose (*Rosa canina*) and Elder (*Sambucus nigra*). See Figure 5.4.
- 5.22** A nest box scheme is recommended by way of mitigation for the loss of potential nesting habitat by the site clearance. It is recommended that nest boxes suitable for starlings and smaller species such as tits be attached to trees in the retained woodland.
- 5.23** In total, five nest boxes are recommended, two suitable for larger species such as starlings and three suitable for small species such as tits. The smaller boxes may also be used by sparrows. The boxes should be sited north facing, 3m to 5m above ground. It is

recommended that the boxes be constructed from woodcrete, such as those made by Schwegler, as they are long lasting. The boxes should be attached to the trees using stainless steel wire as this does not rust and is likely to be longer lasting than using nails.

5.24 An annotated diagram showing the placement of suggested habitat enhancement features is presented in Figure 5.4.

Figure 5.4: Suggested habitat enhancement features



6 Legislative and planning context

Legalities

NB: Refer to Appendix A for details on the legislation/offences for each species.

- 6.1 If a protected species is discovered onsite and the precautions relating to protected species are not followed, offences may be committed. Information on the legislation relating to different protected species is provided in Appendix A.
- 6.2 Penalties on conviction of a bat-related crime - the maximum fine is £5,000 per incident or per bat, up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.
- 6.3 Badger offences include up to six months imprisonment or a fine at level 5 or both. The fine may be multiplied by the number of badgers. Other penalties may apply depending on the type of offence – see <http://www.wcbg.org.uk/pdf/Badgers%20and%20the%20Law.pdf>
- 6.4 The maximum fine that can be imposed in respect of a single bird, nest or egg receiving ordinary protection is £1,000. For offences involving a Schedule species or an illegal method of killing (e.g. poisoning) the maximum is £5,000.
- 6.5 Water voles and their habitats are now full protected under the Wildlife & Countryside Act 1981. As with water vole, the possessor may be able to rely on the defence (see above), but the onus is on him/her to demonstrate how the defence applies. Offences under Section 9 carry a maximum penalty of a fine not exceeding Level 5 on the standard scale (currently £5,000), imprisonment for up to six months and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.
- 6.6 If you are prosecuted for offences with respect to white-clawed crayfish you could receive a penalty of up to £2,500. Any illegally-held crayfish will be seized and destroyed.
- 6.7 It is an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on Schedule 9 of the Wildlife and Countryside Act, such as Himalayan Balsam and Rhododendron. Offences carry a maximum penalty of a £5,000 fine and/or 6 months imprisonment on summary conviction (i.e. at Magistrates' Court) and an unlimited fine (i.e. whatever the court feels to be commensurate with the offence) and/or 2 years imprisonment on indictment (i.e. at Crown Court). An

offence under the Wildlife and Countryside Act Schedule 9 can result in a criminal prosecution. An infringement under the Environmental Protection Act can result in enforcement action being taken by the Environment Agency which can result in an unlimited fine. You can also be held liable for costs incurred from the spread of Knotweed into adjacent properties and for the disposal of infested soil off site during development which later leads to the spread of Knotweed onto another site.

Planning

- 6.8** Under the Habitats Regulations, all public bodies have a duty in exercising their functions to have regard to European Protected Species and Sites. This means that planning authorities must determine whether the proposed development meets the requirements of Article 16 of the EC Habitats Directive before planning permission is granted (where there is a reasonable likelihood of European Protected Species being present). Therefore in the course of its consideration of a planning application, where the presence of a European protected species is a material consideration, the planning authority must satisfy itself that the proposed development meets three tests as set out in the Directive – ‘over-riding public interest’, ‘no satisfactory alternative’ and ‘favourable conservation status’.
- 6.9** The National Planning Policy Framework (NPPF, March 2012) has replaced the previous Planning Policy Guidance in relation to protected species, sites and habitats. Circular 06/05 remains an active document, but is now in relation to the NPPF.
- 6.10** Government Circular 06/2005 (from DCLG) accessible for this link -- [Circular 06/2005](#) -- provides guidance on statutory obligations and their impact within the planning system. Paragraphs 98 & 99 make it clear that the presence of a protected species is a material consideration.
- 6.11** Paragraph 84 of the Circular states that the potential effects of a development, on habitats or species listed as priorities in the UK Biodiversity Action Plan (BAP) are capable of being a material consideration in the making of planning decisions.
- 6.12** Section 40 of the Natural Environment and Rural Communities Act 2006 (NERC) requires decision-makers to have regard to the conservation of biodiversity when carrying out their normal functions. The lists of habitats and species covered by NERC which are of principal importance for the conservation of biodiversity in England and Wales comprise the priority habitats and species identified under UKBAP, the potential effects on which can be an important material consideration.

- 6.13** Local planning authorities (and other public bodies) have a duty to have regard for the purpose of conserving biodiversity under the Natural Environment and Rural Communities Act 2006. Government guidance is that they should make reference to the Section 41 list when implementing the duty, which reinforces the policy that planning authorities should consider and protect Biodiversity Action Plan priority species and habitats when making planning decisions.
- 6.14** In taking these factors into account, the local authority should expect you to demonstrate that you have taken into consideration the impact your development will have on local wildlife and taken appropriate measures to avoid or minimise damage to those species and habitats that appear on the UKBAP and LBAPs as well as those that are specifically protected by law.
- 6.15** IEEM Guidance (March 2012) states that:

‘Material considerations in planning and similar types of decisions can be influenced by factors such as local designations, UK or County BAP Priority habitats or species, and species listed in the UK Red Data Book or RSPB Birds of Conservation Concern. Collectively these may also constitute ‘notable’ species. There is likely to be some degree of overlap between these and legally protected species, although a large number of rare habitats or species do not receive direct legal protection.’

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Appendix A – Legal information

b) Bats

All British bat species are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The most recent amendments introduced by the Conservation (Natural Habitats & c.) (Amendment) Regulations 2007 and 2009, removed some of the protection bats enjoyed under this Act where it was duplicated under the Habitats Regulations. Therefore they are subject to the provisions of Section 9:4 (b) and (c), and 5, which, in summary, makes it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection
- Intentionally or recklessly obstruct access to any structure or place which it uses for shelter or protection
- Sell, offer for sale or possess for the purpose of sale any bat or part of a bat or advertise sales or purchases of bats

The Countryside and Rights of Way [CRoW] Act 2000 makes most WCA offences into arrestable criminal offences, and includes offences committed 'recklessly' as well as deliberately.

All bat species are also included in Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations 2010), which consolidates the Conservation (Natural Habitats & c.) Regulations 1995 and amendments in 2007, 2008 and 2009.

Regulation 41 makes it an offence to:

(a) deliberately capture or kill a bat [Regulation 41(1)(a)]

(b) deliberately disturb a bat [Regulation 41(1)(b)]

(c) damage or destroy a breeding site or resting place of a bat [R. 41(1)(d)]

(d) Keep, transport, sell or exchange, or offer for sale or exchange a live or dead bat or any part of a bat [R. 41(3)]

For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

(a) to impair their ability—

(i) to survive, to breed or reproduce, or to rear or nurture their young, or

(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

(b) to affect significantly the local distribution or abundance of the species to which they belong.

c) Nesting Birds

(Taken from the RSPB website, 2012)

Under the Wildlife and Countryside Act, a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. Game birds however are not included in this definition (except for limited parts of the Act). They are covered by the Game Acts, which fully protect them during the close season.

All birds, their nests and eggs are protected by law and it is thus an offence, with certain exceptions (see *Exceptions*), to:

- intentionally kill, injure or take any wild bird
- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built
- intentionally take or destroy the egg of any wild bird
- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954
- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954
- use traps or similar items to kill, injure or take wild birds

- have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations (see *Schedules*)
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Exceptions

There are some exceptions to the offences created by the Wildlife and Countryside Act, the most notable of which are:

- an authorised person (eg a landowner or occupier) may kill or take, in certain situations and by certain methods, so called 'pest species' and destroy or take the nest or eggs of such a bird. This is permissible under the terms of General Licences issues by government departments (see *Licences*).
- it is not illegal to destroy a nest, egg or bird if it can be shown that the act was the incidental result of a lawful operation which could not reasonably have been avoided.
- a person may kill or injure a wild bird, other than one included on Schedule 1, if they can show, subject to a number of specific conditions, that their action was necessary to preserve public health or air safety, prevent spread of disease, or prevent serious damage to livestock, crops, vegetables, fruit, growing timber, or fisheries (contact Defra for more information).
- a person may take or kill (or injure in attempting to kill) a bird listed on Schedule 2, Part I, outside the close season (see *Schedules*).
- a person may take a wild bird if the bird has been injured other than by their own hand and their sole purpose is to tend it and then release it when no longer disabled. These provisions enable people to care for sick, injured or orphaned birds. Additionally, a wild bird may be killed if it is so seriously disabled as to be beyond recovery. Sick and injured birds listed on Schedule 4 should be registered with Defra.

d) Water Voles

Water voles received limited legal protection under the WCA in 1998, but the protection has recently been extended since 2008, so the water vole is now fully protected under Section 9. It is an offence to intentionally kill, injure or take (capture) a water vole; possess or control a live or dead water vole, or any part of a water vole; intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place; sell, offer for sale or advertise for live or dead water voles.

There is no provision under the WCA for licensing what would otherwise be offences for the purpose of development, maintenance or land management. Such activities must be covered by the defence in the Act that permits otherwise illegal actions if they are an incidental result of a lawful operation and could not reasonably be avoided. The

defence requires that reasonable steps are taken to avoid unnecessary damage, and for developers, this can best be achieved by undertaking a water vole survey at the appropriate time prior to planning any work and ensuring that appropriate avoidance or mitigation measures are included in the proposals.

e) Otter

The Otter has been given full protection under the Wildlife and Countryside Act 1981 (as amended) (Sections 9.1 and 9.4, Schedule 5). Accordingly, it is an offence to:

- kill, injure or take an Otter from the wild without a licence
- possess or control a live or dead Otter, or any part of a Otter
- to damage or obstruct a holt; or disturb an Otter in its resting place.

The Otter is listed in the Bern Convention and the Convention on International Trade of Endangered Species (CITES). It requires special protection measures under the European Habitats Directive (92/43/EEC). Its listing in Annex 2 requires the designation of Special Areas of Conservation (SAC) for sites supporting important Otter populations. *Lutra lutra* is listed as globally threatened on the IUCN/SCMC Red Data List and still remains absent from many parts of lowland England. The Otter is one of eighteen priority mammal species listed in the UK BAP.

f) White-clawed Crayfish

The endangered native Crayfish is partially protected from taking and sale (Schedule 5 of the Wildlife & Countryside Act 1981). This means that any 'capture' of a Crayfish can result in an offence. White-clawed Crayfish are included in the IUCN Red Data List, Appendix III of the Bern Convention and are protected internationally under Annexes II and V of the European Habitats Directive.

Non-native species carry a disease that is fatal to the native species, so must not be introduced or returned to any water bodies, and if taken must be killed. Schedule 9 of the Wildlife and Countryside Act (1981) makes it an offence to release or allow to escape into the wild all three non-native species of crayfish found in the UK. Licences are needed for most forms of survey, which is effectively limited to the July to October period.

Appendix B – Data search

Table B1: Protected species records within 1km

Informal Group	Common Name	Scientific name	Location	Year	Dist (m)	Record Type	Count	EU Port	UK Prot
bird	Eurasian Hobby	<i>Falco subbuteo</i>	Uttoxeter CP	2009	691	Field Observation	1 Count	F	T
bird	European Golden Plover	<i>Pluvialis apricaria</i>	Uttoxeter CP	2009	691	Field Observation	10 Count	T	F
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2008	889	Field Observation	1 Count of dead	F	T
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	T	F
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T

bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	F	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	T	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	T	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	T	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	T	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	T	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	T	T
bird	Little Egret	<i>Egretta garzetta</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	T	F
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2007	921	Field Observation		F	T
bird	Red Kite	<i>Milvus milvus</i>	Uttoxeter CP	2011	954	Field Observation	1 Count	T	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter CP	2003	691	Field Observation	1 Count	T	T
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	T	F

bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	8 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	8 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Greylag Goose	<i>Anser anser</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Greylag Goose	<i>Anser anser</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Greylag Goose	<i>Anser anser</i>	Uttoxeter Quarry	2008	464	Field Observation	9 Count	F	T
bird	Greylag Goose	<i>Anser anser</i>	Uttoxeter Quarry	2008	464	Field Observation	11 Count	F	T
bird	Greylag Goose	<i>Anser anser</i>	Uttoxeter Quarry	2008	464	Field Observation	10 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	9 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	10 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	13 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T

bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	15 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	14 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	12 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	8 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter CP	2004	691	Field Observation	1 Count	F	T
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2007	464	Field Observation	1 Count	F	T
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2004	691	Field Observation	1 Count	F	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter CP	2003	691	Field Observation	2 Count	T	T
bird	Eurasian Hobby	<i>Falco subbuteo</i>	Uttoxeter CP	2004	691	Field Observation	1 Count	F	T
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2005	797	Field Observation	1 Count of in flight	F	T
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2008	797	Field Observation	1 Count of Adult	F	T
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2009	954	Field Observation	2 Count	F	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter CP	2003	464	Field Observation	1 Count	T	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Picknal Brook: Hockley Bridge (east of)	2002	891	Field Observation	1 Count of in flight	T	T
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2004	842	Field Observation	1 Count of in flight	F	T
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	12 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	10 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	8 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F

bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	10 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	T	F
bird	Common Tern	<i>Sterna hirundo</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	T	F
bird	Common Goldeneye	<i>Bucephala clangula</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	F	T
bird	Green Sandpiper	<i>Tringa ochropus</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	10 Count	F	T

bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	9 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	19 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	11 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	10 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	9 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	10 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	12 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Peregrine Falcon	<i>Falco peregrinus</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	T	T
bird	Whimbrel	<i>Numenius phaeopus</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Barn Owl	<i>Tyto alba</i>	Uttoxeter CP	2007	797	Dead Field Observation	1 Count of Adult Female	F	T
bird	Common Kingfisher	<i>Alcedo atthis</i>	Uttoxeter CP	2009	691	Field Observation	0 Count	T	T
bird	Barnacle Goose	<i>Branta leucopsis</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	T	F
bird	Common Greenshank	<i>Tringa nebularia</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Common Greenshank	<i>Tringa nebularia</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Common Greenshank	<i>Tringa nebularia</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T

bird	Common Greenshank	<i>Tringa nebularia</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Common Greenshank	<i>Tringa nebularia</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Common Greenshank	<i>Tringa nebularia</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Greylag Goose	<i>Anser anser</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Greylag Goose	<i>Anser anser</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	1 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	6 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	4 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	2 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	8 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	5 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	8 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	7 Count	F	T
bird	Little Plover	<i>Charadrius dubius</i>	Uttoxeter Quarry	2008	464	Field Observation	3 Count	F	T
bird	Mammal	Brown Long-eared Bat	Uttoxeter CP	1996	694	Field Observation	1 Count of Male	T	T
Mammal	Pipistrelle	<i>Pipistrellus pipistrellus sens. lat.</i>	Uttoxeter CP	1998	732	Field Observation		T	T
Mammal	Pipistrelle	<i>Pipistrellus pipistrellus sens. lat.</i>	Uttoxeter CP	1998	481	Field Observation	Present Count of nursery	T	T

Mamma							colony		
							1 Count		
- bat	a bat	<i>Chiroptera</i>	Uttoxeter CP	1988	585	Field	Count of Adult;	T	F
Mamma		<i>Pipistrellus</i>				Observation	1 Count		
		<i>pipistrellus sens. lat.</i>	Uttoxeter CP	1989	872	Field	of possible		
- bat	Pipistrelle					Observation	roost	T	T
Mamma		<i>Pipistrellus</i>					10 Count		
		<i>pipistrellus sens. lat.</i>	Uttoxeter Quarry	2008	921	aural bat	of		
- bat	Pipistrelle					detector	roosting	T	T
Mamma		<i>Pipistrellus</i>							
	Soprano	<i>pygmaeus</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Myotis</i>							
	Myotis Bat	<i>species</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	species					detector		T	T
Mamma		<i>Pipistrellus</i>							
		<i>pipistrellus sens. lat.</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Pipistrellus</i>							
	Soprano	<i>pygmaeus</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Pipistrellus</i>							
		<i>pipistrellus sens. lat.</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Pipistrellus</i>							
	Soprano	<i>pygmaeus</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Pipistrellus</i>							
		<i>pipistrellus sens. lat.</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Chiroptera</i>							
	a bat		Uttoxeter Quarry	2008	921	aural bat			
- bat	a bat					detector		T	F
Mamma		<i>Pipistrellus</i>							
		<i>pipistrellus sens. lat.</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Pipistrellus</i>							
	Soprano	<i>pygmaeus</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Pipistrellus</i>							
		<i>pipistrellus sens. lat.</i>	Uttoxeter CP	1987	701	Field	1 Count		
- bat	Pipistrelle					Observation	of Adult	T	T
Mamma		<i>Pipistrellus</i>					1 Count;		
		<i>pipistrellus sens. lat.</i>	Uttoxeter CP	1999	925	Field	1 Count		
- bat	Pipistrelle					Observation	of possible	T	T
Mamma		<i>Pipistrellus</i>					roost		
		<i>pipistrellus sens. lat.</i>	Uttoxeter CP	1985	961	Field	1 Count		
- bat	Pipistrelle					Observation	of nursery	T	T
Mamma		<i>Myotis</i>					colony		
	Myotis Bat	<i>species</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	species					detector		T	T
Mamma		<i>Pipistrellus</i>							
		<i>pipistrellus sens. lat.</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Pipistrellus</i>							
	Soprano	<i>pygmaeus</i>	Uttoxeter Quarry	2008	921	aural bat			
- bat	Pipistrelle					detector		T	T
Mamma		<i>Chiroptera</i>							
	a bat		Uttoxeter CP	1989	872	Field	10 Count		
- bat	a bat					Observation	of possible	T	F
Mamma		<i>Chiroptera</i>					roost		
	a bat		Uttoxeter CP	2010	865	Field			
- bat	a bat					Observation		T	F

- bat									
mamma									
-									
carnivor	European	<i>Lutra lutra</i>	Uttoxeter CP	2005	1069	Droppings	1 Count of Adult	T	T
e	Otter								
Mamma									
-									

Mamma	European	<i>Arvicola amphibius</i>	Staffordshire (modern County)	1997	755	Field Observation	Present Count of Adult	F	T
-	Water Vole								
Mamma	European	<i>Arvicola amphibius</i>	River Tean: Dove Bridge	1997	979	Field Observation		F	T
-	Water Vole								
Mamma	European	<i>Arvicola amphibius</i>	Uttoxeter CP	2000	945	Droppings	1 Count of Burrow	F	T
-	Water Vole								

BAP and notable species					
Informal Group	Common Name	Scientific name	Location	Year	Distance
amphibian	Common Toad	<i>Bufo bufo</i>	Uttoxeter CP	1990	691
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter CP	2008	921
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2006	691
bird	Common Snipe	<i>Gallinago gallinago</i>	Uttoxeter CP	2003	691
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter CP	2004	691
bird	Dunnock	<i>Prunella modularis</i>	Uttoxeter CP	2004	691
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter CP	2004	691
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter CP	2004	691
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter CP	2004	691
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter Quarry	2008	464

bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Spotted Flycatcher	<i>Muscicapa striata</i>	Uttoxeter Quarry	2008	464
bird	Common Starling	<i>Sturnus vulgaris</i>	Uttoxeter Quarry	2008	464
bird	Common Starling	<i>Sturnus vulgaris</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Teal	<i>Anas crecca</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464

bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2007	921
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter Quarry	2007	921
bird	Duncock	<i>Prunella modularis</i>	Uttoxeter Quarry	2007	921
bird	Grey Wagtail	<i>Motacilla cinerea</i>	Uttoxeter Quarry	2007	921
bird	House Martin	<i>Delichon urbicum</i>	Uttoxeter Quarry	2007	921
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2007	921
bird	Mallard	<i>Anas platyrhynchos</i>	Uttoxeter Quarry	2007	921
bird	Meadow Pipit	<i>Anthus pratensis</i>	Uttoxeter Quarry	2007	921
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2007	921
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2007	921
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2007	921
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter Quarry	2007	921
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2007	921
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter Quarry	2010	1019
bird	Lesser Redpoll	<i>Carduelis cabaret</i>	Uttoxeter CP	2009	691
bird	House Sparrow	<i>Passer domesticus</i>	Uttoxeter CP	2011	345
bird	Grey Wagtail	<i>Motacilla cinerea</i>	Uttoxeter CP	2011	345
bird	Common Starling	<i>Sturnus vulgaris</i>	Uttoxeter CP	2011	345
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2008	691
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2004	691
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2005	691
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2007	691
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2003	691
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter CP	2003	691
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter CP	2003	691
bird	Yellowhammer	<i>Emberiza citrinella</i>	Uttoxeter CP	2004	691
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter CP	2005	691
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter CP	2004	691
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter CP	2001	691
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter CP	2004	691
bird	Willow Warbler	<i>Phylloscopus trochilus</i>	Uttoxeter CP	2004	691
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Black-headed Gull	<i>Larus ridibundus</i>	Uttoxeter Quarry	2008	464
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter Quarry	2008	464
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter Quarry	2008	464
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter Quarry	2008	464

bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellowhammer	<i>Emberiza citrinella</i>	Uttoxeter Quarry	2008	464
bird	Yellowhammer	<i>Emberiza citrinella</i>	Uttoxeter Quarry	2008	464
bird	Yellowhammer	<i>Emberiza citrinella</i>	Uttoxeter Quarry	2008	464
bird	Yellowhammer	<i>Emberiza citrinella</i>	Uttoxeter Quarry	2008	464
bird	Yellowhammer	<i>Emberiza citrinella</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Rural CP	2009	989
bird	Spotted Redshank Eurasian	<i>Tringa erythropus</i>	Uttoxeter Quarry	2010	464
bird	Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter CP	2008	921
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter CP	2008	921
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter CP	2008	921
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter CP	2006	691
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2007	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2002	691
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter CP	2004	691
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2000	691
bird	Common Swift	<i>Apus apus</i>	Uttoxeter CP	2001	691
bird	Willow Warbler	<i>Phylloscopus trochilus</i>	Uttoxeter CP	2003	691

bird	Yellowhammer	<i>Emberiza citrinella</i>	Uttoxeter CP	2003	691
bird	Willow Warbler	<i>Phylloscopus trochilus</i>	Uttoxeter CP	2004	691
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter CP	2004	691
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter CP	2004	691
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter CP	2004	691
bird	House Martin	<i>Delichon urbicum</i>	Uttoxeter CP	2004	691
bird	House Martin	<i>Delichon urbicum</i>	Uttoxeter CP	2004	691
bird			Uttoxeter Rural CP		
	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	CP	2002	856
bird	Common Snipe	<i>Gallinago gallinago</i>	Uttoxeter CP	2003	667
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter CP	2008	691
bird	Eurasian Curlew	<i>Numenius arquata</i>	Uttoxeter CP	2003	691
bird	Common Redstart	<i>Phoenicurus phoenicurus</i>	Uttoxeter CP	2003	691
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter CP	2004	691
bird	Dunnock	<i>Prunella modularis</i>	Uttoxeter CP	2005	691
bird			River Tean:		
	Common Kestrel	<i>Falco tinnunculus</i>	Dove Bridge	1997	755
bird			River Tean:		
	Black-headed Gull	<i>Larus ridibundus</i>	Dove Bridge	1997	755
bird			River Tean:		
	Grey Wagtail	<i>Motacilla cinerea</i>	Dove Bridge	1997	755
bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	Uttoxeter CP	2008	930
bird	Common Gull	<i>Larus canus</i>	Uttoxeter Quarry	2008	464
bird	Common Gull	<i>Larus canus</i>	Uttoxeter Quarry	2008	464
bird	Common Gull	<i>Larus canus</i>	Uttoxeter Quarry	2008	464
bird	Common Gull	<i>Larus canus</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Uttoxeter Quarry	2008	464
bird	Dunnock	<i>Prunella modularis</i>	Uttoxeter Quarry	2008	464
bird	Dunnock	<i>Prunella modularis</i>	Uttoxeter Quarry	2008	464
bird	Dunnock	<i>Prunella modularis</i>	Uttoxeter Quarry	2008	464
bird	Dunnock	<i>Prunella modularis</i>	Uttoxeter Quarry	2008	464
bird	Dunnock	<i>Prunella modularis</i>	Uttoxeter Quarry	2008	464
bird	House Sparrow	<i>Passer domesticus</i>	Uttoxeter Quarry	2008	464
bird	House Sparrow	<i>Passer domesticus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464

bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Common Kestrel	<i>Falco tinnunculus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Uttoxeter Quarry	2008	464
bird	Mallard	<i>Anas platyrhynchos</i>	Uttoxeter Quarry	2008	464
bird	Mallard	<i>Anas platyrhynchos</i>	Uttoxeter Quarry	2008	464
bird	Mallard	<i>Anas platyrhynchos</i>	Uttoxeter Quarry	2008	464
bird	Mallard	<i>Anas platyrhynchos</i>	Uttoxeter Quarry	2008	464
bird	Meadow Pipit	<i>Anthus pratensis</i>	Uttoxeter Quarry	2008	464
bird	Meadow Pipit	<i>Anthus pratensis</i>	Uttoxeter Quarry	2008	464
bird	Meadow Pipit	<i>Anthus pratensis</i>	Uttoxeter Quarry	2008	464
bird	Mistle Thrush	<i>Turdus viscivorus</i>	Uttoxeter Quarry	2008	464
bird	Mistle Thrush	<i>Turdus viscivorus</i>	Uttoxeter Quarry	2008	464
bird	Mistle Thrush	<i>Turdus viscivorus</i>	Uttoxeter Quarry	2008	464
bird	Mistle Thrush	<i>Turdus viscivorus</i>	Uttoxeter Quarry	2008	464
bird	Mistle Thrush	<i>Turdus viscivorus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464

bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Reed Bunting	<i>Emberiza schoeniclus</i>	Uttoxeter Quarry	2008	464
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter Quarry	2008	464
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter Quarry	2008	464
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter Quarry	2008	464
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter Quarry	2008	464
bird	Sky Lark	<i>Alauda arvensis</i>	Uttoxeter Quarry	2008	464
bird	Common Snipe	<i>Gallinago gallinago</i>	Uttoxeter Quarry	2008	464
bird	Common Snipe	<i>Gallinago gallinago</i>	Uttoxeter Quarry	2008	464
bird	Common Snipe	<i>Gallinago gallinago</i>	Uttoxeter Quarry	2008	464
bird	Common Snipe	<i>Gallinago gallinago</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Song Thrush	<i>Turdus philomelos</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464
bird	Common Swift	<i>Apus apus</i>	Uttoxeter Quarry	2008	464

bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Sand Martin	<i>Riparia riparia</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Stock Dove	<i>Columba oenas</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Barn Swallow	<i>Hirundo rustica</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Tufted Duck	<i>Aythya fuligula</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Common Whitethroat	<i>Sylvia communis</i>	Uttoxeter Quarry	2008	464
bird	Willow Warbler	<i>Phylloscopus trochilus</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464

bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
bird	Yellow Wagtail	<i>Motacilla flava</i>	Uttoxeter Quarry	2008	464
flowering plant	Smooth Cat's-ear	<i>Hypochaeris glabra</i>	Uttoxeter CP	2011	345
flowering plant	Common Cudweed	<i>Filago vulgaris</i>	SK03W	2007	928
flowering plant	Wild Pansy	<i>Viola tricolor</i>	SK03W	2002	482
insect - beetle (Coleoptera)	insect - beetle	<i>Anaglyptus mysticus</i>	Uttoxeter CP	2008	921
insect - hymenopteran	insect - hymenopteran	<i>Halictus (Halictus) rubicundus</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Tawny Mining Bee	<i>Andrena (Andrena) fulva</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Common Carder Bee	<i>Bombus (Thoracombus) pascuorum</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Grey Mining Bee	<i>Andrena (Melandrena) cineraria</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Small Garden Bumble Bee	<i>Bombus (Megabombus) hortorum</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Common Wasp	<i>Vespula (Paravespula) vulgaris</i>	Uttoxeter CP	2008	921
insect - hymenopteran	insect - hymenopteran	<i>Nomada lathburiana</i>	Uttoxeter CP	2008	921
insect - hymenopteran	insect - hymenopteran	<i>Andrena (Trachandrena) haemorrhoea</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Early Mining Bee	<i>Bombus (Bombus) lucorum</i>	Uttoxeter CP	2008	921
insect - hymenopteran	insect - hymenopteran	<i>Bombus (Bombus) terrestris</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Large Red Tailed Bumble Bee	<i>Bombus (Melanobombus) lapidarius</i>	Uttoxeter CP	2008	921
insect - hymenopteran	Gooden's Nomad Bee	<i>Nomada goodeniana</i>	Uttoxeter CP	2008	921
insect - moth	Mouse Moth	<i>Amphipyra tragopoginis</i>	Uttoxeter CP	1974	691
insect - moth	Rosy Rustic	<i>Hydraecia micacea</i>	Uttoxeter CP	1974	691
insect - moth	Small Square-spot	<i>Diarsia rubi</i>	Uttoxeter CP	1974	691
insect - moth	Dot Moth	<i>Melanchra persicariae</i>	Uttoxeter CP	1974	691
insect - moth	Dusky Brocade	<i>Apamea remissa</i>	Uttoxeter CP	1974	691
insect - moth	Buff Ermine	<i>Spilosoma luteum</i>	Uttoxeter CP	1974	691
insect - moth	Shoulder-striped Wainscot	<i>Mythimna comma</i>	Uttoxeter CP	1974	691
mammal - insectivore	West European Hedgehog	<i>Erinaceus europaeus</i>	Uttoxeter CP	2009	464
mammal - insectivore	West European Hedgehog	<i>Erinaceus europaeus</i>	Uttoxeter CP	2009	805
mammal - insectivore	West European Hedgehog	<i>Erinaceus europaeus</i>	Uttoxeter CP	2010	745
mammal - insectivore	West European Hedgehog	<i>Erinaceus europaeus</i>	Uttoxeter CP	2009	972
mammal - insectivore	West European Hedgehog	<i>Erinaceus europaeus</i>	Uttoxeter CP	2009	799
mammal - insectivore	West European Hedgehog	<i>Erinaceus europaeus</i>	Uttoxeter CP	2009	1083
mammal - lagomorph	Brown Hare	<i>Lepus europaeus</i>	Uttoxeter Quarry	2007	921
mammal - lagomorph	Brown Hare	<i>Lepus europaeus</i>	Uttoxeter CP	2001	435
mammal - lagomorph	Brown Hare	<i>Lepus europaeus</i>	Uttoxeter CP	2007	937
mammal - lagomorph	Brown Hare	<i>Lepus europaeus</i>	Uttoxeter Quarry	2010	919
mammal - lagomorph	Brown Hare	<i>Lepus europaeus</i>	River Tean: Dove Bridge	1997	979

Appendix C – Bat survey data

Surveyor number relates to their location as shown in Figure C1

Figure C1: Surveyor locations



Dusk emergence survey 12 August 2012

Key to activity

E – Emerge

R – Re-enter roost

F – Forage

C – Commute

No Visual – Bat not observed but heard on detector

? – Observation or call hard to determine

Surveyor 1

Pete Morris – Anabat 04782

Time	Activity	Species	Description
21.06	E	Common Pipistrelle	Emerged from the end of Building 2 facing me
21.13	E?	Common Pipistrelle	Possibly emerging or came from down the alley then flew towards Surveyor 3
21.14	C	Common Pipistrelle	Heard not seen
21:16	C/F	Big Bat – most likely Noctule	Noctule flew distantly and high to the right
21:18	F	Common Pipistrelle	Flew from Surveyor 2 past me
21:19		Common Pipistrelle	Possibly same bat then flew over the building towards charlotte
21:22	E	Common Pipistrelle	Not heard but seen possibly emerging from guttering on the corner marked with a *. Same area as possible emergence at 9:06
21:27	F	Common Pipistrelle	Flew towards me across the gardens
21:30	F	Common Pipistrelle	Around the end of the building.
21:35		Common Pipistrelle	2 flew towards surveyor 2 from between the buildings
21:37	F	Common Pipistrelle	And another one foraging here.
21:48		Common Pipistrelle	No Visual
21:59		Common Pipistrelle	No visual
22:13	F?	Common Pipistrelle	Flew towards surveyor 2 through gap between buildings
22:16		Common Pipistrelle	Same activity as above

22:22		Common Pipistrelle	Fragments of small bat call heard
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Surveyor 2

Richard Pearce - Anabat 03030

Time	Activity	Species	Description
20:20			Start
21:04	C		X1
21:15	C	Big bat – most likely Noctule	X1
21:18		Common Pipistrelle	
21:22	F	Common Pipistrelle	1 Emerge from under guttering?? on Building 2
21:36	C	Common Pipistrelle	X2 from by Surveyor 3
21:36	F	Common Pipistrelle	X1 into and straight back out of Building 4 via 2 nd storey window
21:37	F	Common Pipistrelle	Forage
			From 21:45 activity really dropped off
22:14	C	Common Pipistrelle	X1
22:26	C	Common Pipistrelle	X1
22:37			End

Surveyor 3

Charlotte Eva – Anabat 06022

Time	Activity	Species	Description
21:04		Common Pipistrelle	No visual
21:27		Common Pipistrelle	No visual
21:32	F	Common Pipistrelle	No visual, over tree line to south behind building?
21:40		Common Pipistrelle	No visual
21:51		Common Pipistrelle	No visual
21:59		Common Pipistrelle	No visual
22:00		Common Pipistrelle	No visual

22:02		Common Pipistrelle	Faint call picked up, probably from near surveyors 1 & 4?
22:11	C	Common Pipistrelle	No visual
22:12	F	Common Pipistrelle	No visual
22:18		Common Pipistrelle	No visual
22:20		Big bat – most likely Noctule	Noctule? Not seen, faint clicks.

**Surveyor 4
Scott Petrek - Batbox IID Heterodyne**

Time	Activity	Species	Description
20:58	F	Pip sp.	Underneath tree canopy
21:01	F	Pip sp.	Not seen
21:02	F	Pip sp.	Underneath tree canopy
21:03	F	Pip sp.	From around corner by surveyor 1
21:03 – 21:05	Constant F	Pip sp.	Constant foraging along tree line until 21:25 approx
21:34	F	Pip sp.	Underneath tree canopy
21:50	F	Pip sp.	Underneath tree canopy
22:23	F	Pip sp.	Underneath tree canopy

**Surveyor 5
Sophie Foster – Anabat 05971**

Time	Activity	Species	Description
21:05	C	Common Pipistrelle	No Visual
21:13	C	Common Pipistrelle	No Visual
22:14	C	Myotis sp.	No Visual

Dawn re-entry survey 13 August 2012

Key to activity

E – Emerge

R – Re-enter roost

F – Forage

C – Commute

Blank – Bat not observed but heard on detector

? – Observation or call hard to determine

Surveyor 1

Pete Morris – Anabat 04782

Time	Activity	Species	Description
04:16	F	Soprano Pipistrelle	No Visual - seemed to be at least 2 bats foraging
05:01	F/C	Born Long-eared?	1 Bat came from between the buildings and over my head
05:06		Common Pipistrelle	No visual
05:13	F	Common Pipistrelle	Over gardens and road (also heard)
05:15	R	Common Pipistrelle	Entered small gap between bricks above night heard side of boarded up window
05:17	F/C?	Common Pipistrelle	No visual
05:19	R	Soprano Pipistrelle	Another entered same gap- both made very little noise on detector

Surveyor 2

Richard Pearce - Anabat 03030

Time	Activity	Species	Description
4:15			Start
5:03	F	Brown Long-eared?	1 X Foraging for short period around southern gable of building 2 - didn't set off detector
4:20 – 4:29	F	Common Pipistrelle	No Visual. Occasional foraging + social calls
5:04	C	Common Pipistrelle	X1 Commute north over Building 2
5:45			Finish

Surveyor 3
Charlotte Eva – Anabat 06022

Time	Activity	Species	Description
4:21		Common Pipistrelle	No visual
4:27		Common Pipistrelle	No visual – Broken call
4:38		Common Pipistrelle	No visual - Short call
4:56		Common Pipistrelle	No visual – Short call
5:05	C	Common Pipistrelle	Commute west over building 1
5:16	C	Common Pipistrelle	Commute west in front of building 1

Surveyor 4
Scott Petrek - Batbox IID Heterodyne

Time	Activity	Species	Description
4:13	F	Pip	Forage under tree canopy
4:57	F	Pip	Forage under tree canopy
5:03	F	Pip	Forage under tree canopy
5:04	F	Pip	Forage under tree canopy
5:10	F	Pip	Forage under tree canopy
5:13	F	Pip	Forage under tree canopy

Surveyor 5
Sophie Foster – Anabat 05971

Time	Activity	Species	Description
4:27		Common Pipistrelle	No visual, think behind me.
4:43	C	Common Pipistrelle	Possibly over trees
4:54		Common Pipistrelle	No Visual
4:59		Common Pipistrelle	No Visual
5:02	C/F	Common Pipistrelle	Flew to north of building then into woodland in centre of site
5:04	C	Common Pipistrelle	Commute east between woodland and building

Dawn re-entry survey 16 August 2012

Key to activity

E – Emerge

R – Re-enter roost

F – Forage

C – Commute

Blank – Bat not observed but heard on detector

? – Observation or call hard to determine

Pipistrelle sp – Recorded call borderline between common and soprano pipistrelle

Surveyor 1

Richard Pearce – EM3

Time	Activity	Species	Description
4:22			Start
4:51		Common Pipistrelle	Behind me?
4:52	F	Common Pipistrelle	1x over skips between buildings 1 and 2
4:53	F	Common Pipistrelle	1x over skips between buildings 1 and 2
4:55	F	Common Pipistrelle	1x over skips between buildings 1 and 2
4:57	F	Common Pipistrelle	1x over skips between buildings 1 and 2
5:10	C	Common Pipistrelle	1x north between buildings 1 and 2
5:17	C	Common Pipistrelle	1x south between buildings 1 and 2
5:17	C	Brown Long-eared?	2x south between buildings 1 and 2
5:18	C	Common Pipistrelle	1x south between buildings 1 and 2
5:20	F	Common Pipistrelle	1x Up and down alleyway and over gardens to east of Building 2
5:21	F	Common Pipistrelle	1x Up and down alleyway and over gardens to east of Building 2
5:22	F	Common Pipistrelle	1x Up and down alleyway and over gardens to east of Building 2
5:28	S	Common Pipistrelle	X1 briefly up to crack in southern gable of building 2 wall and the fly away
5:52			End

Surveyor 2
Holly Bowler – Batbox Duet + recorder

Time	Activity	Species	Description
4:26	C	Common Pip?	No visual, detected not recorded
4:29	C	Common Pip	No visual
4:31	Foraging + social	Common Pip	Constant pattern of foraging around building until 4:40
4:41		Common Pip	Social call
4:45		Soprano	No visual
4:50		Common pip	Distant then came nearer over building - social calls
4:52		Common Pip	Eastwards over Building 2
4:54		Common Pip	No visual
5:56		Common Pip	No visual
4:57		Common Pip	From behind building 2 towards east
5:00		Common Pip	No call visual only
5:04		Common Pip	No visual
5:06	?		No call
5:10			Not recorded too brief
5:14	S	Common Pip	2 bats around southern gable of building 2
5:15	R	Common Pip	1 went in to missing brickwork at apex of northern gable of building 2.
5:15	E+F? or S?	Common Pip	Either same bat came out to forage or another one swarming then flew off
5:17	C	?	2 flew around building 2 no calls
5:17	C	?	No call
5:20	F	Common Pip	Feeding off gable wall
5:21	C	Common Pip	Flew around building
5:22	?	?	Brief on other side out of range
5:27	?	?	Over garden to west of building 2? too brief & to distant to verify

Surveyor 3
Becky Payne- Anabat 04782

Time	Activity	Species	Description
5:07	C	Common Pipistrelle	Flew around side of building
5:08	C	Common Pipistrelle? Detected by Surveyor 4	Briefly seen above building, not detected
5:11	F	Common Pipistrelle? Detected by Surveyor 4	Briefly seen above building, not detected
5:14	C	Common Pipistrelle	Flew over right shoulder towards roof
5:17	C	Not detected	Flew towards the west
5:18	S	Common Pipistrelle	1x Swarming around southern gable of Building 2 to the right of me
5:23	S	Common Pipistrelle?	1x Swarming above Building 2 to the right of me – probably bat feeding over alley and garden observed by surveyor 1
5:32	C		Didn't hear on detector – commuting westwards

Surveyor 4
Charlotte Eva – Anabat 03030

Time	Activity	Species	Description
4:36	C		No visual
4:35		Common Pipistrelle?	No visual – Very broken call
4:43		Soprano Pipistrelle	No visual
4:50		Pipistrelle sp	No visual
4:52		Pipistrelle sp	No visual
4:55		Pipistrelle sp	No visual
4:56		Pipistrelle sp	No visual
4:59		Pipistrelle sp	No visual
5:04		Common Pipistrelle	No visual
5:06		Common Pipistrelle	No visual
5:10		Common Pipistrelle	No visual
5:12	F	Pipistrelle sp	Flew from west to forage under tree canopy

5:15		Pipistrelle sp	No visual
5:19		Common Pipistrelle	No visual
5:19		Pipistrelle sp	No visual
5:22	F	Pipistrelle sp	Under tree canopy
5:24	F?	Pipistrelle sp	No visual
5:28	F?	Pipistrelle sp	No visual
5:31	F	Pipistrelle sp	Foraging under trees

Surveyor 5
Sophie Foster – Anabat 06022

Time	Activity	Species	Description
4:32	C	Pipistrelle sp	Flew along tree line of woodland
4:38		Common Pipistrelle	No visual
4:43		Soprano Pipistrelle	No visual
4:51		Common Pipistrelle	No visual, possibly using woodland edge
4:54	C/F	Common Pipistrelle	Looped overhead from the east
4:58		Common Pipistrelle	No visual
5:14	C/F	Pipistrelle sp.	Around woodland
5:20		Common Pipistrelle	From around trees again

Appendix D – Site Photographs

Plate C.1: Tall non-ruderal habitat



Plate C.2: Open drain through woodland



Plate C.3: Landscaping trees – ornament acer sp.



Plate C.4: Hedgerows along northern site boundary



Plate C.5: Japanese knotweed on northern edge of the site



Plate C.6: Avenue of beech trees along southern site boundary – used by foraging bats



Plate C.7: Lining of roof of Building 1 damaged by damp



Plate C.8: Weather boarding along roof edge of building 5 – not suitable for bats



Appendix E – Bat-Friendly Planting

List of species taken from the Bat Conservation Trust Leaflet: “*Encouraging Bats. A Guide for Bat Friendly Gardening and Living*” (BCT, Unknown)

*Plants marked * are hybrids or exotics that may be useful in the garden*

Flowers For Borders

*Aubretia (spring to early summer)	*Michaelmas daisy (summer to autumn)
Bluebell (spring)	*Night-scented stock (summer)
*Candytuft (summer to autumn)	Ox-eye daisy (summer)
*Cherry pie (summer to autumn)	*Phacelia (summer to autumn)
Corncockle	*Poached egg plant (summer)
Cornflower	Primrose (spring)
Corn marigold	Red campion (spring)
Corn poppy	*Red valerian (summer to autumn)
*Echinacea	Scabious (summer)
*Evening primrose (summer to autumn)	St John's wort (spring)
Field poppies (summer)	*Sweet William (summer)
*Honesty (spring)	*Tobacco plant
*Ice plant 'Pink lady' (early autumn)	*Verbena (summer to autumn)
Knapweed (summer to autumn)	*Wallflowers (spring to early summer)
Mallow (summer to autumn)	Wood forget-me-not (spring)
*Mexican aster (summer to autumn)	Yarrow (early summer)

Herbs

Angelica	Hyssop (summer to early autumn)
Bergamot (summer to early autumn)	Lavenders
Borage (spring to early autumn)	Lemon balm
Coriander (summer)	Marjoram (summer)
Fennel (summer to early autumn)	Rosemary (spring)
Feverfew (summer to autumn)	Sweet Cicely (spring to early summer)
English marigolds	Thyme (summer)

Trees, shrubs and climbers

*Bramble (climber)	Hazel (suitable for coppicing)
Buddleia (shrub)	Honeysuckle (native honeysuckle)
Common alder (suitable for coppicing)	Hornbeam
Dog rose (climber)	Ivy (climber)
Elder (small)	*Jasmine (night-scented)
English oak (large gardens only)	Pussy willow (suitable for coppicing)
Gorse (shrub)	Rowan
Guelder rose (shrub)	Silver birch
Hawthorn (suitable for coppicing)	

Wild flowers for pond edges and marshy areas

Bog bean	Marsh marigold (spring)
Bugle	Marsh woundwort
Creeping Jenny (spring to summer)	Meadowsweet (summer to early autumn)
Flag iris	Purple loosestrife (summer)
Hemp agrimony (summer)	Water avens
Lady's smock (spring to summer)	Water forget-me-not (summer to autumn)
Marsh mallow	Water mint (summer to autumn)

Appendix F - Avoiding Crayfish Plague

Additional Information: Crayfish Plague

Crayfish plague, carried by signal crayfish, is a serious threat to White-clawed Crayfish. It can eliminate whole populations of White-clawed Crayfish within weeks. Plague can be carried on wet nets, boots and other gear.

- If working on several sites, work on those with White-clawed Crayfish first.
- After working on any site which has alien crayfish, ensure all equipment and vehicles which have been in water are cleaned of mud.
- After working on any watercourse with alien crayfish disinfect with hypochlorite bleach or an iodophor (at least 100ppm available iodine). If this cannot be done, ensure all machinery and other equipment is thoroughly cleaned and allowed to dry completely.
- If carrying out any re-stocking with fish in any watercourse which may have White-clawed Crayfish ensure the fish come from a source which is free of alien crayfish; or seek advice from EA on disinfection to avoid risk of crayfish plague.
- If stocking with aquatic plants during habitat restoration, do not use material from stockists or watercourses which have alien crayfish.
- If you find any alien crayfish at a site where the species is not already known to the Environment Agency, report it immediately.
- If working on any watercourse with alien crayfish, make sure everyone knows it is illegal to move them to any new site. Introductions can cause severe, long-term damage to the other life in watercourses.
- Signal crayfish can also badly affect angling interests when they reach high densities.

(Guidance on Works Affecting White Clawed Crayfish - Peay, 2000)

Appendix G - Botanical Species List

Woodland

Silver Birch	<i>Betula pendula</i>
Sycamore	<i>Acer psuedoplatanus</i>
Ash	<i>Fraxinus excelsior</i>
Hawthorn	<i>Crataegus monogyna</i>
Goat willow	<i>Salix caprea</i>
Crack willow	<i>Salix fragilis</i>
Ivy	<i>Hedera helix</i>
Bramble	<i>Rubus fruticosus</i>
Common nettle	<i>Urtica dioica</i>
Wood avens	<i>Geum urbanum</i>

Tall Herb non-ruderal

Ribbed melilot	<i>Melilotus officinalis</i>
False oat-grass	<i>Arrhenatherum elatius</i>
Cock's foot	<i>Dactylis glomerata</i>
Timothy	<i>Phleum pratense</i>
Yorkshire fog	<i>Holcus lanatus</i>
Creeping buttercup	<i>Ranunculus repens</i>
Bramble	<i>Rubus fruticosus</i>
Yarrow	<i>Achillea millefolium</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Mugwort	<i>Artemisia vulgaris</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Smooth hawksbeard	<i>Crepis capilaris</i>
Lesser hop trefoil	<i>Trifolium dubium</i>
Marjoram	<i>Origanum marjorana</i>
Crested dogs tail	<i>Cynosurus cristatus</i>
Blackthorn	<i>Prunus spinosa</i>
Dog rose	<i>Rosa canina</i>
Rosebay Willowherb	<i>Chamerion angustifolium</i>
Oxeye daisy	<i>Leucthemum vulgare</i>
Hogweed	<i>Heracleum sphondylium</i>
Creeping thistle	<i>Cirsium arvense</i>
Teasel	<i>Dipsacus fullonum</i>
Common ragwort	<i>Senecio jacobaea</i>
Elder	<i>Sambucus nigra</i>
Hazel	<i>Corylus avellana</i>
Buddleja	<i>Buddleja davidii</i>

Hedgerows to north of site (Target notes Tn5 & Tn6)

Hawthorn	<i>Crataegus monogyna</i>
Ivy	<i>Hedera helix</i>
Elder	<i>Sambucus nigra</i>

Standard trees on site

Ornamental acer sp.	<i>Acer sp.</i>
Hybrid lime	<i>Tilia x europaea</i>

Silver birch *Betula pendula*
Field maple *Acer campstre*

Tree line to the south of the site

Beech *Fagus sylvatica*
Sycamore *Acer pseudoplatanus*
Ash *Fraxinus excelsior*
Silver birch *Betula pendula*
Hawthorn *Crataegus monogyna*
Goat willow *Salix caprea*