

**Marchmont Farm
Hemel Hempstead**

Update Phase 1 Habitat Survey
27th July 2012

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 27th July 2012
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1.0 Summary

A Phase 1 habitat survey was undertaken for the land at Marchmont Farm, Hemel Hempstead on 7th June 2012. The site is approximately 18.4ha in extent, situated on the northern edge of Hemel Hempstead, in the district of Grovehill in Hertfordshire. The site includes nine fields to the west of Marchmont Farm dwelling.

The site was previously surveyed in 2004, at which time a number of ecological features including badgers, reptiles and trees with potential to support roosting bats were identified. Due to the age of the previous survey information, and the fact that ecological resources are not static and change over time, an updated Phase 1 habitat survey and desk study have been conducted to re-assess the ecological resources currently associated with the site.

The site does not appear to have substantially changed since the previous surveys were undertaken in 2004. Currently, five of the fields are horse grazed pasture and four are managed meadows currently comprising long grassland. The fields are bordered by fences, hedgerows and/or woodland. Some of the grasslands and hedgerows appear to be a little more species-rich than previously recorded. Phase 2 vegetation surveys will need to be undertaken to confirm the communities present which in turn will inform the assessment of ecological value and guide an appropriate mitigation or management response.

The survey was extended to identify the presence of invasive species and include an assessment of the potential for the habitats on site and associated features to support protected species. The following observations were made:

- No invasive species such as Japanese knotweed *Fallopia japonica* or giant hogweed *Heracleum mantegazzianum* were recorded within the site, therefore invasive species are not considered to be a management issue for any future development.
- A single badger *Meles meles* sett with two entrances was found in the woodland block to the east of the site boundary. No setts were recorded within the site although their identification may have been constrained by the tall vegetation that is present at this time of year. However, it is unlikely that any substantial setts are present within the site as indicative signs of badger would have been evident. Therefore, although a further survey is recommended prior to development, it is considered unlikely that the presence of badgers will significantly constrain any future development.
- Weather conditions were sub-optimal for reptiles at the time of survey and, although habitats within the site remain generally suitable, no reptiles were sighted. However, it is reasonable to conclude common lizard *Zootoca vivipara* will continue to be present and reptile surveys will therefore be required to establish the species present and make a population assessment such that appropriate measures can be put in place to prevent killing or injuring any reptiles.
- The site provides opportunities for foraging, roosting and commuting bats and further surveys are recommended to determine use of the site by bats, including identifying potential roost sites before drafting a masterplan for the site.

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- A number of bird species with potential to breed within the site were observed during the survey, including a number of red-listed species such as grey partridge *Perdix perdix* and starling *Sturnus vulgaris*. A breeding bird survey is recommended to confirm the assemblage present and areas/features of the site that are of greatest importance in sustaining the assemblage.

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2.0 Introduction

2.1. Site Description

The site is approximately 18.4ha in extent, situated on the northern edge of Hemel Hempstead, in the district of Grovehill in Hertfordshire. The site includes nine fields to the west of Marchmont Farm dwelling. At the time of survey, five of the fields were pasture grazed by horses and four were managed as meadows, comprising long grassland. The fields are bordered by fences, hedgerows and/or woodland. The hedgerows are predominantly machine-cut and many are species-rich.

The site is bordered to the south by the A4147, to the west by a series of arable fields, to the north by a residential area and the eastern boundary is bordered by a woodland strip. In the wider landscape, urban areas of Hemel Hempstead town are south and east of the site and extensive arable land with small patches of woodland are located to the north of the site.

2.2. Background to Commission

A Phase 1 habitat survey of the site was undertaken in 2004, during which time a number of ecological features (badgers, trees with potential to support roosting bats and reptiles) were identified.

Previously the surveys were to inform a developer prior to purchase of the land for a residential housing development. This current survey information is required to inform a Core Strategy public examination. Due to the age of the previous survey information, and the fact that ecological resources are not static and change over time, an updated Phase 1 habitat survey and desk study are required to re-assess the ecological resources associated with the site.

2.3. Aims of Study

- This report provides an ecological appraisal of the site following completion of a desk study and site visit. This report includes the following:
- Confirmation of the outcome of the review of biological records obtained during the desk study;
- Description and evaluation of the habitats present within the site, highlighting any changes from the time of the previous Phase 1 habitat survey;
- An assessment of the potential for the site to support protected or notable species based on the current site condition;
- The legislative and/or policy protection afforded to any habitats present or any species assessed as likely to be associated with the site;
- An assessment of any potential constraints to proposed development of the site, based on our findings; and
- Recommendations for any further ecological surveys considered necessary to inform mitigation requirements for future planning applications within the site.

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3.0 Methods

3.1. Desk Study

Prior to visiting the site the existing Phase 1 habitat survey report (1641_X001_rep_gc_lda issued 15 October 2004) and technical report (1641_X002_tech_tb_rf issued 22 September 2004) were reviewed to gain an understanding of the site previously, including habitats present and key ecological features, including protected or priority species previously identified.

The Hertfordshire Biological Records Centre (HBRC) was commissioned to undertake a standard data search* for any information regarding statutory and non-statutory sites and records of protected and priority species within a 2km radius of Marchmont Farm. The data was received on 30 May 2012.

** The standard data search identifies designated sites including:- Ramsar; Special Areas of Conservation; Special Protection Areas; Sites of Special Scientific Interest; National Nature Reserves; Local Nature Reserves; County Wildlife Sites; Regionally Important Geological Sites; Ancient Woodland; and protected and priority species identified by the:- Wildlife & Countryside Act 1981 Schedules 1, 5 & 8; Conservation of Habitats & Species Regulations 2010 Schedules 2 & 5; Protection of Badgers Act 1992; Bonn Convention Appendix 1 & 2; Bern Convention Annex 1 & 2; Birds Directive Annex 1; Habitats Directive Annex 2, 4 & 5; NERC Act 2006 Section 41; UKBAP (both local and national); IUCN Red List species; Red & Amber Bird List; Nationally Scarce / Rare; Locally Scarce / Rare; and Veteran trees.*

3.2. Field Survey

A Phase 1 habitat survey was conducted by Laura Jennings MIEEM on 7 June 2012 in accordance with standard best practice methodology for Phase 1 Habitat survey set out by JNCC (JNCC, 2010). The site was traversed slowly by the surveyor, mapping habitats and making notes on dominant flora using the DAFOR scale (NB: The DAFOR scale is used to determine the relative abundance of each plant species encountered, with the scale including: D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).

The survey was extended to identify the presence of invasive species and include an assessment of the potential for the habitats on site and associated features to support protected species.

Weather during the survey was 100% cloud, with occasional light rain, wind F2-3 on the Beaufort scale and 14°C.

3.3. Constraints on Study Information

There were no constraints to the desk study or identification of habitats within the site during the field survey as it was possible to access all areas of the site.

There were some limited constraint to assessing the potential presence of badger, bats and reptiles as detailed below:

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- Overgrown vegetation along hedgerows meant it was not possible to categorically confirm the presence/absence of badger setts within the site. However, it is considered that if a substantial sett was present within the site this would have been evident; therefore, it is assumed any setts, if present, will be single outlier holes. As such, this constraint has not impacted upon the recommendations made within this report.
- It was not possible to identify all potential features suitable for roosting bats on trees within the site as the trees were in leaf. It is recommended that a ground level tree assessment is undertaken at an appropriate time of year in order to inform any further survey and mitigation requirements.
- Weather conditions were not suitable for identification of reptiles within the site. However, an assessment was made of the suitability of habitats within the site. As such, this does not impact upon the assessment of the site.

There were no other constraints to identifying the potential presence of protected, priority or invasive species.

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4.0 Results and Interpretation

In this section the results of the site survey and desk study are brought together. Consideration is also given to the report produced in 2004 and how the site has changed in the intervening period.

4.1. Habitats

Designated Site Information

The HBRC desk study identified the following designated areas within 2km of the site:

- 1 Statutory Site – a Local Nature Reserve (LNR);
- 12 non-statutory County Wildlife Sites (CWS);
- 4 Ancient Woodland Inventory sites (AWI); and
- 10 known veteran and mature trees (Note: These have no statutory designation but are regarded as important ecological features in the landscape).

In 2004 there were only three designated sites in the area, including 66/001 Howe Grove LNR and CWS; 66/015 Disused Railway Line, Hemel Hempstead; and CWS 65/066 Meadow by the River Gade. A summary of these sites and the additional sites in the area is included in Table 1 below:

Table 1: Records of designated sites returned within 2km of Marchmont Farm on 30-05-12.

| Site Ref, Name & Designation | Location | Area (ha) | Description/Wildlife Site Criteria |
|---|----------------------|-----------|---|
| 66/001 Howe Grove LNR + CWS + AWI | TL060087 0.02km S | 8.55 | Ancient Woodland Inventory site with key woodland indicators and ancient semi-natural coppiced woodland |
| 66/015 Disused Railway Line, Hemel Hempstead CWS | TL069088 0.6km SE | 4.9 | Old secondary woodland with a semi-natural character and varied structure; woodland indicators. |
| 65/066 Meadow by River Gade, S. of Grist House Farm CWS | TL045096 0.9km NW | 9.14 | Grassland indicators (species of interest) within the meadows. |

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| Site Ref, Name & Designation | Location | Area (ha) | Description/Wildlife Site Criteria |
|---|----------------------|------------------|--|
| 53/001 Water End Moor CWS | TL039103 1.7km NW | 4.3 | Non-degraded river supporting good populations of aquatic species; fen and swamp indicators; wet woodland. |
| 54/034 Varney's Wood CWS + AWI | TL052104 1km N | 2.48 | Ancient Woodland Inventory site with restorable elements of its previous semi-natural character including some semi-natural canopy and ancient features. |
| 65/028 Thrift Wood (Ashridge) CWS | TL047099 1km N | 2.36 | Ancient woodland with restorable elements of its previous semi-natural character including some semi-natural canopy and ancient features; shown on Bryant (1822); >1ha; woodland indicators. |
| 65/031 Warners End Wood CWS | TL044088 1km W | 3.05 | Part ancient/part secondary woodland with some semi-natural canopy and field evidence suggesting an ancient origin; part present on Bryant (1822); >1 ha; woodland indicators. |
| 65/098 Former Halsey School Playing Field CWS | TL042088 1.2km W | 10.61 | The site is important for Roman Snail (<i>Helix pomatia</i>), a protected species. |
| 66/005 Widmore Wood CWS + AWI | TL073086 1.3km E | 3.41 | Ancient Woodland Inventory site; woodland indicators. |
| 65/017 Dell Wood (N. of Gadebridge) CWS + AWI | TL039090 1.6km W | 4.09 | Ancient Woodland Inventory site and old secondary woodland with a semi-natural canopy and varied structure; woodland indicators. |
| 65/038 Gravel Hill Spring Wood CWS | TL045074 1.7km SW | 1.79 | Part ancient/part secondary broadleaved woodland with a semi-natural canopy and features suggesting an ancient origin; part shown on Bryant (1822); >1 ha; woodland indicators. |
| 66/013 Paradise Fields (part) CWS | TL060068 1.9km S | 3.97 | Grassland indicators – species diversity. |

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4.2. Phase 1 Habitat Survey Results

Habitats within the site were mapped to show their nature and extent and are included on Figure 1 along with Target Notes (TN) which locate and describe different parts of the site. Each habitat type is described below and photographs are included in Appendix 1. The target notes are detailed in Appendix 4. Where plant species are included within the text, their relative abundance is described using the DAFOR scale as discussed in Section 3.3. A summary of relevant legislation and policy afforded to habitats and species within the site is included in Appendix 3.

4.2.1. Grassland

The site includes three fields comprising species-rich semi-improved calcareous grasslands (TN1-2), five fields comprising poor semi-improved grasslands (TN3), and one field comprising coarse improved grassland (TN4).

The poor semi-improved grasslands are located within the south-west and north-west of the site. Those in the south-west (TN3 – photo 4) are heavily grazed by horses. Common bent *Agrostis capillaris* and fescue *Festuca* sp. are abundant within the sward with frequent perennial rye-grass *Lolium perenne*, Timothy *Phleum pratense*, false oat-grass *Arrhenatherum elatius*, cock's-foot *Dactylis glomerata* and occasional tor grass *Brachypodium pinnatum*. Wild flower species are occasional/rare with species present including meadow buttercup *Ranunculus acris*, creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, field bindweed *Convolvulus arvensis*, germander speedwell *Veronica chamaedrys*, field madder *Sherardia arvensis*, daisy *Bellis perennis*, common bird's-foot-trefoil *Lotus corniculatus*, lady's bedstraw *Galium verum* and common mouse-ear *Cerastium fontanum*.

The field in the north-west (TN4 – photo 5) is improved grassland with coarse grasses circa 60cm tall at the time of survey. The grassland is less diverse than the grazed fields, being dominated by cock's-foot with frequent false oat-grass, occasional fescue, and rare Yorkshire fog *Holcus lanatus*, perennial rye-grass, soft brome *Bromus hordeaceus*, white clover and ribwort plantain *Plantago lanceolata*.

The calcareous semi-improved grasslands in the east of the site (TN1 & TN2) contain similar species of grass and herb to those at TN3 although they are not grazed by horses and have greater species diversity. Additional species within the sward include occasional rough hawksbeard *Crepis biennis*, common broomrape *Orobanche minor* and common vetch *Vicia sativa*, and rare yellow-rattle *Rhinanthus minor*, yarrow *Achillea millefolium*, cow parsley *Anthriscus sylvestris*, oxeye daisy *Leucanthemum vulgare*, dandelion *Taraxacum officinale* agg., red clover *Trifolium pratense*, creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare* and field scabious *Knautia arvensis* (Photo 1-2). The field at TN2 is rich in wild flower species, being dominated by meadow buttercup with abundant oxeye daisy, frequent field scabious, occasional broad-leaved dock *Rumex obtusifolius*, ribwort plantain and yarrow (Photo 3).

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4.2.2. Hedgerows

The site contains 11 hedgerows, or sections of hedgerow (Numbered 1-11 on Figure 1 – photos 3 and 8-15). All hedgerows within the site have been managed by machine cutting previously. They range from 1.5-5m tall and 1.5-2m wide with occasional standard trees. During the hedgerow survey in 2004, 7 of the hedgerows met the criteria for “important” hedgerows under The Hedgerows Regulations 1997. A hedgerow survey was not undertaken as part of the update phase 1 survey in June 2012 although the species within each hedgerow was confirmed. Although individual hedgerows varied in their species composition, common woody species include hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, ash *Fraxinus excelsior*, dog rose *Rosa canina*, dogwood *Cornus sanguinea* and field maple *Acer campestre*. Occasional/rare hedgerow species include pedunculate oak *Quercus robur*, blackthorn *Prunus spinosa*, wayfaring tree *Viburnum lantana*, wild privet *Ligustrum vulgare*, holly *Ilex aquifolium*, bird cherry *Prunus avium*, spindle *Euonymus europaeus*, and sycamore *Acer pseudoplatanus*.

The ground flora of the hedgerows includes frequent cleavers *Galium aparine*, bramble *Rubus angustifolia* agg., nettle *Urtica dioica* and ivy *Hedera helix*, occasional white bryony *Bryonia dioica*, perforate St John’s-wort *Hypericum perforatum*, hedge woundwort *Stachys sylvatica*, broad-leaved dock, garlic mustard *Alliaria petiolata*, white dead-nettle *Lamium album*, cow parsley *Anthriscus sylvestris*, herb Robert *Geranium robertianum*, and rare bluebell *Hyacinthoides non-scripta* and dog’s mercury *Mercurialis perennis*. Bluebell was recorded in Hedge 1 and dog’s mercury in Hedge 10.

4.2.3. Woodland

The eastern boundary of the site is bordered by semi-natural broadleaved woodland (TN5 – photo 16). Woody species present include elm *Ulmus sp.*, hazel, hawthorn, sycamore, ash, horse chestnut *Aesculus hippocastanum*, wild privet, elder, dogwood, rose and pedunculate oak. The understory includes dog’s mercury, cleavers, cock’s foot, cow parsley, ivy, bramble, nettle, snowberry *Symphoricarpos albus* and tree saplings.

4.3. Species

Species records obtained from HBRC are summarised below along with an assessment of the potential for the habitats on site and associated features to support these and/or other protected or priority species. The presence/absence of invasive species within the site is also discussed.

4.3.1. Protected Species Data

HBRC have identified 241 individual species records from within 2km of the site. Some of these records are of considerable age (dating back to 1937); however, 152 of the 241 records have been submitted since 1995. The records comprise 70 species, details of which are included below:

- 3 amphibians species prior to 2002 (common frog *Rana temporaria*, common toad *Bufo bufo* and great crested newt *Triturus cristatus*);

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- 1 reptile species in 1964 (grass snake *Natrix natrix*);
- 8 mammal species (brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, brown hare *Lepus europaeus*, Eurasian badger *Meles meles*, European otter *Lutra lutra*, European water vole *Arvicola amphibius*, harvest mouse *Micromys minutus* and west European hedgehog *Erinaceus europaeus*);
- 5 bird species (common buzzard *Buteo buteo*, European robin *Erithacus rubecula*, great tit *Parus major*, song thrush *Turdus philomelos* and winter wren *Troglodytes troglodytes*);
- 33 moth species predominantly from a single recorder 1.6km east of the site
- 1 mollusc species (roman snail *Helix (Helix) pomatia*)
- 8 flowering plant species (bluebell *Hyacinthoides non-scripta*, dwarf spurge *Euphorbia exigua*, large-leaved lime *Tilia platyphyllos*, lime *Tilia platyphyllos x cordata* = *T. x europaea*, opposite-leaved pondweed *Groenlandia densa*, orange foxtail *Alopecurus aequalis*, snowdrop *Galanthus nivalis* and wood barley *Hordelymus europaeus*)
- 1 liverwort species (minute pouncewort *Cololejeunea minutissima*)
- 10 moss species (Floerke's Phascum *Microbryum floerkeanum*, Fountain Pocket-moss *Octodicerias fontanum*, Lesser Screw-moss *Syntrichia virescens*, Nicholson's Beard-moss *Didymodon nicholsonii*, Sand Feather-moss *Brachythecium mildeanum*, Shaw's Bristle-moss *Orthotrichum striatum*, Smallest Pottia *Microbryum davallianum*, Strap-leaved Earth-moss *Ephemerum recurvifolium*, Tall Pottia *Tortula protobryoides* and Yellow-tuber Thread-moss *Bryum tenuisetum*).

The resolution of much of the data is poor such that the precise location of many records is unclear; as 6 figure grid references only provide accuracy to the nearest kilometre. As such, it is not possible to confirm that there are no records from within the site although the likelihood is low due to limited public access of the site.

4.3.2. Protected and Priority Species within the Site

A single badger *Meles meles* sett with two entrances (TN5 – photo 6) and a latrine with 5 active dung pits (TN6 – photo 7) was found in the woodland block to the east of the site boundary. No setts were recorded within the site although their identification may have been constrained by the tall vegetation that was present at the time of survey (June 2012). However, it is unlikely that any substantial setts are present within the site as indicative signs of badger would have been evident.

Weather conditions were sub-optimal for reptiles at the time of survey and although habitats within the site remain generally suitable no reptiles were sighted. However, it is reasonable to conclude common lizard *Zootoca vivipara* will continue to be present as they were recorded on hedgerow 10 in 2004. The site also provides opportunities for slow worm *Anguis fragilis*.

There are no buildings within the site boundary. However, opportunities for roosting bats were identified within trees (TN7 & TN8) which had suitable features including dense ivy cover, woodpecker holes, flaking bark, standing dead wood, splits and rot holes. In addition,

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the landscape is considered optimal for foraging and commuting bats. Habitats within the site are generally species-rich; as such they are likely to provide a large biomass of invertebrate prey. The majority of hedgerows within the site are intact (do not have gaps) and as such enable bats to readily commute to suitable foraging and roosting areas. South of the A4147 is Howe Grove Wood LNR which is also an Ancient Woodland Inventory site. It is likely trees within this woodland provide further opportunities for roosting bats.

During the site visit thirteen bird species were recorded, many of which have potential to breed within the site. These included 5 red-list **, 2 amber-listed and 6 green-listed bird species as follows:

- Red: Yellowhammer *Emberiza citronella*, starling *Sturnus vulgaris*, grey partridge *Perdix perdix*, skylark *Alauda arvensis* and house sparrow *Passer domesticus*,
- Amber: dunnock *Prunella modularis* and swallow *Hirundo rustica*, and
- Green: great tit *Parus major*, blue tit *Cyanistes caeruleus*, goldfinch *Carduelis carduelis*, wood pigeon *Columba palumbus*, magpie *Pica pica* and carrion crow *Corvus corone*.

*** Red-list Birds of Conservation Concern have the highest conservation priority due to one or a combination of the following criteria: (i) being globally threatened; (ii) having a historical population decline in UK during 1800–1995; (iii) there being a severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first BoCC review, starting in 1969); or (iv) a severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period.*

4.3.3. Invasive Species

No invasive species were recorded within the site, therefore invasive species are not considered likely to be a management consideration in bringing forward future development.

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5.0 Potential Impacts and Recommendations

5.1. Habitats

It is possible that development within the site may result in increased pressure on Howe Grove LNR, such as increased numbers of visitors and potential pollution effects. The magnitude of the impact is not known at this stage, however, it is considered unlikely to be significant due to the current proximity of urban areas to the south and east of the woodland.

Being as the distance to the remaining designated sites is far higher (with the closest being 0.6km south-east) and the sites are predominantly within urban areas, it is considered that there will be no impact on them as a result of development within the site.

The three fields in the eastern section of the site support species-rich semi-improved grassland with species indicative of calcareous soils. The biodiversity value of these fields is increased due to the paucity of these habitats in the local area, with the majority of land in the vicinity being arable or urban. The single coarse grassland field in the north-west (TN4) and five heavily grazed fields to the south and west (TN3) show signs of improvement. As such, the fields are of more limited biodiversity value, although a number of wild flower species can be found within the sward.

A phase 2 vegetation survey of the fields that are evidently more species-rich is recommended to confirm botanical value and guide an effective and proportionate mitigation response.

There are several species-rich hedgerows within the site (particularly within the northern sector) which not only support a diversity of plant species but also support or have the potential to support a number of protected animal species. These species rich hedgerows should be retained intact wherever possible. However, it is recommended that an update hedgerow survey is carried out in order to identify those hedgerows of greatest value, so that if they are to be breached or removed, appropriate mitigation can be identified.

5.2. Protected Species

5.2.1. Badgers

An active latrine was found on the woodland edge and mammal tracks were found throughout the site. Although no badger setts were recorded within the site, a sett with two entrances was found within 10m of the site boundary. It is possible for badger tunnels to extend up to 20m from entrance holes (Natural England, 2007). If excavation works were to occur within 20m of a sett this may lead to an offence under the Protection of Badgers Act 1992 in that badgers may be killed or injured, or their sett may be interfered with (in that a section of the sett may be destroyed). It is recommended that a badger survey is conducted between October and April (with the optimum time being February to April), at which time the vegetation is low such that evidence is more visible. The survey outcome will guide any necessary management measures required to avoid a breach of the legislation protecting badgers and it is considered unlikely that the presence of badgers will significantly constrain any future development.

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5.2.2. **Bats**

There are opportunities for bats to roost in mature trees within the site and the broad-leaved woodland south of the site. In the absence of mitigation, removal of trees has potential to kill or injure bats and impact upon the ability of bats in the locality to survive or rear their young. Tree assessments should be conducted in winter when the trees are not in leaf so potential opportunities can be identified more reliably. If potential bat roost features are identified, follow-up roost surveys are likely to be required and should ideally be undertaken before preparing a masterplan for the site as tree roosts and connecting features should be retained wherever possible.

It is likely that bats within the area use the hedgerows and woodland edge within the site for commuting and foraging. Bat activity surveys are recommended to determine the level of use by bats. These surveys are likely to require a combination of walked transects and deployment of static detectors with which to remotely monitor bat activity.

5.2.3. **Breeding Birds**

An assemblage of birds is likely to be using the grassland and hedgerows for breeding. Use of the site is not currently known, although a number of red-listed birds were recorded during the site visit. If any clearance of the site is undertaken between March and September there is potential to destroy an active nest or kill birds occupying a nest. A breeding bird survey is recommended to confirm the assemblage present and areas/features of the site that are of greatest importance in sustaining the population.

5.2.4. **Reptiles**

Hedgerows, banks and grasslands are frequently used by reptiles as shelter and foraging areas. Common lizard was previously recorded within the site and the habitats present are considered suitable for slow worm. Disturbance within the site in the absence of mitigation has the potential to kill or injure reptiles. In order to determine the species now present within the site and to make a population assessment, it is recommended that a reptile survey is carried out between March and October with the optimal period being April-May and/or September. This will provide the information needed to develop an appropriate mitigation strategy that will prevent killing or injuring of reptiles and sustain the existing population.

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6.0 References

JNCC (2010) Handbook for Phase 1 Habitat Survey. A Technique for Environmental Audit. JNCC

Communities and Local Government (2012) National Planning Policy Framework. ISBN 9781409834137.

Natural England (2007) Badgers and development. A Guide to best practice and licensing. Natural England, Peterborough.

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Appendix 1: Photographs

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Photograph 1: View north in TN1 with woodland in east



Photograph 2: View north in field at TN1 north of lane



Photograph 3: View east along field TN2 and Hedge 5



Photograph 4: TN3 Looking west



Photograph 5: View north in field at TN4



Photograph 6: Badger sett at TN5

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Update Phase 1 Habitat Survey -
Photograph Panels

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Photograph 7: Badger latrine at TN6



Photograph 8: Standard tree with bat potential in hedge 11



Photograph 9: View east along hedge 1



Photograph 10: View south along Hedge 2 with hedge 9 in the distance



Photograph 11: View west along north side of hedge 3



Photograph 12: View north along west side of hedge 4

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 SCALE@A3 NTS CHECKED LJ
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DWG. NO. 3313_EC_02

PROJECT TITLE
 MARCHMONT FARM,
 HEMEL HEMPSTEAD

DRAWING TITLE
 Update Phase 1 Habitat Survey -
 Photograph Panels

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Photograph 13: Hedge 6 and 10



Photograph 14: View west along hedges 10 and 6



Photograph 15: Hedge 7,8 and 9



Photograph 16: View south along broad-leaved woodland edge

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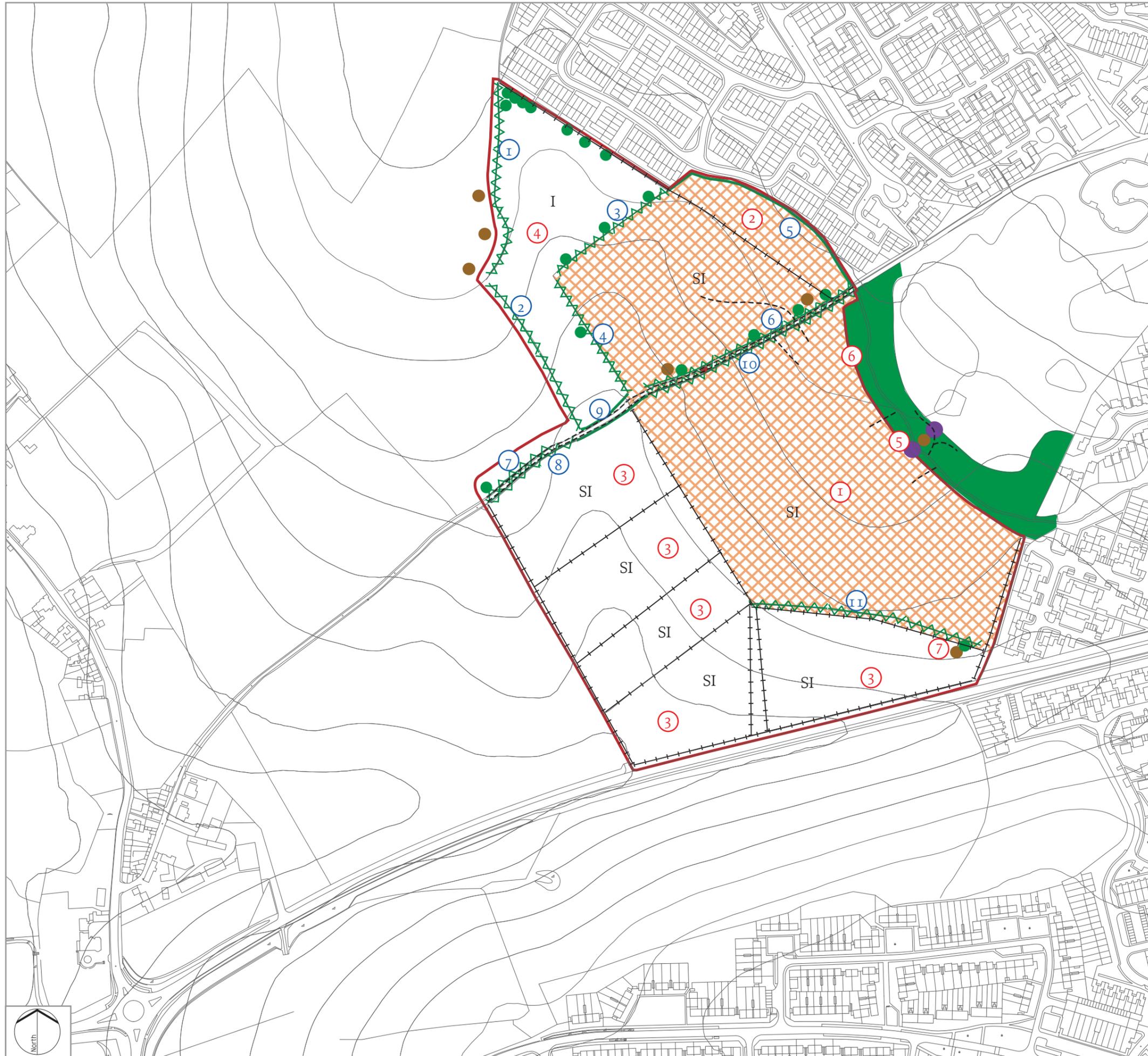
PROJECT TITLE
MARCHMONT FARM,
HEMEL HEMPSTEAD

DRAWING TITLE
Update Phase 1 Habitat Survey -
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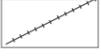
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Appendix 2: Figures

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LEGEND

-  Site boundary
-  Semi-natural broad-leaved woodland
-  Species-poor intact hedge
-  Species-rich intact hedge
-  Fence
-  Poor semi-improved grassland
-  Semi-improved calcareous grassland
-  Improved grassland
-  Mammal tracks
-  Scattered broad-leaved trees
-  Badger sett
-  Tree with bat roost potential
-  Hedgerow number
-  Target note

| REV. | DESCRIPTION | APP. | DATE |
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**MARCHMONT FARM
HEMEL HEMPSTEAD**

DRAWING TITLE
Extended Phase 1 Habitat Survey

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No dimensions are to be scaled from this drawing.
All dimensions are to be checked on site.
Area measurements for indicative purposes only.
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Sources: Ordnance Survey; BSG Ecology survey data

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Appendix 3: Summaries of Relevant Legislation, Policy and Other Instruments

This section briefly summarises the relevant legislation, policy and related issues that are mentioned in the main text of the report. The following text does not constitute legal advice.

National Planning Policy Framework

The government published the National Planning Policy Framework (NPPF) on 27th March 2012. The NPPF states that, “the planning system should contribute to and enhance the natural and local environment by...minimising impacts on biodiversity and providing net gains in biodiversity, where possible contributing to the Government’s commitment to halt the overall decline in biodiversity” (Paragraph 109).

Planning – land allocation and policies

Local planning authorities are advised further to ‘*set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure...*’ (Paragraph 114).

The NPPF also states that, “*to minimise impacts on biodiversity and geodiversity, planning policies should...Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets; and identify suitable indicators for monitoring biodiversity in the plan...*’ (Paragraph 117).

Planning applications and biodiversity

“When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted; and
- Opportunities to incorporate biodiversity in and around developments should be encouraged”. (Paragraph 118)

Species and Habitats of Principal Importance

The NPPF (paragraph 117) indicates that local authorities should take measures to “*promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species*” linking to national and local targets through local planning policies. Priority species are those species shown on the England Biodiversity List published by the Secretary of State under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Planning authorities have a duty under Section 40 of

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the NERC Act to have regard to priority species and habitats in exercising their functions including development control and planning.

Badgers

Badgers are protected under the Protection of Badgers Act 1992. This makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so, and to intentionally or recklessly interfere with a sett.

Bats

Bats are afforded a greater level of protection than birds which is applicable throughout the year. All British species of bat are listed as European Protected Species (EPS) under The Conservation of Habitats and Species Regulations 2010. They are also protected under the Wildlife and Countryside Act 1981 (as amended by the Crow Act 2000). Taken together (and in summary) these pieces of legislation make it illegal to:

- Deliberately capture or intentionally take any bat;
- Deliberately or intentionally kill or injure a bat;
- Be in possession or control of any live or dead bat or any part of, or anything derived from a bat;
- Damage or destroy a breeding site or resting place of any bat, or intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection;
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection;
- Deliberately disturb a bat, in particular any disturbance which is likely to:
 - impair the ability of bats to survive, breed or reproduce, or to rear or nurture their young; or
 - impair the ability of bats to hibernate or migrate; or
 - affect significantly the local distribution or abundance of bats.

Breeding Birds

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs.

Common Reptiles

All species of British reptile are protected by the Wildlife and Countryside Act 1981 (as amended). The common species (adder, grass snake, slow worm and common lizard) are only protected against intentional killing and injuring (but not taking).

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Appendix 4: Target Notes

Target Note 1

Species-rich semi-improved calcareous grassland (see photos 1-2)

| Scientific name | Common name | Abundance |
|------------------------------|----------------------------|------------------|
| <i>Agrostis capillaris</i> | Common bent | A |
| <i>Anthriscus sylvestris</i> | Cow parsley | R |
| <i>Arrhenatherum elatius</i> | False oat-grass | F |
| <i>Brachypodium pinnatum</i> | Tor grass | O |
| <i>Cerastium fontanum</i> | Common mouse-ear | R |
| <i>Cirsium arvense</i> | Creeping thistle | R |
| <i>Cirsium vulgare</i> | Spear thistle | R |
| <i>Crepis biennis</i> | Rough hawksbeard | O |
| <i>Dactylis glomerata</i> | Cock's-foot | F |
| <i>Festuca</i> sp. | Fescue species | A |
| <i>Galium verum</i> | Lady's bedstraw | R |
| <i>Knautia arvensis</i> | Field scabious | R |
| <i>Leucanthemum vulgare</i> | Oxeye daisy | R |
| <i>Lolium perenne</i> | Perennial ryegrass | F |
| <i>Lotus corniculatus</i> | Common bird's-foot-trefoil | F |
| <i>Orobanche purpurea</i> | Common broomrape | O |
| <i>Phleum pratense</i> | Timothy | F |
| <i>Plantago lanceolata</i> | Ribwort plantain | O |
| <i>Ranunculus acris</i> | Meadow buttercup | R |
| <i>Rhinanthus minor</i> | Yellow-rattle | R |

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| | | |
|----------------------------------|---------------------|---|
| <i>Senecio jacobaea</i> | Common ragwort | R |
| <i>Taraxacum officinale agg.</i> | Dandelion | R |
| <i>Trifolium pratense</i> | Red clover | R |
| <i>Veronica chamaedrys</i> | Germander speedwell | R |
| <i>Vicia sativa</i> | Common vetch | O |

Target Note 2

Semi-improved calcareous grassland dominated by wild flowers (see photo 3).

| Scientific name | Common name | Abundance |
|----------------------------------|----------------------------|------------------|
| <i>Achillea millefolium</i> | Yarrow | O |
| <i>Bellis perennis</i> | Daisy | R |
| <i>Cirsium arvense</i> | Creeping thistle | R |
| <i>Dactylis glomerata</i> | Cock's-foot | F |
| <i>Knautia arvensis</i> | Field scabious | R |
| <i>Leucanthemum vulgare</i> | Oxeye daisy | A |
| <i>Lolium perenne</i> | Perennial ryegrass | O |
| <i>Lotus corniculatus</i> | Common bird's-foot-trefoil | R |
| <i>Plantago lanceolata</i> | Ribwort plantain | O |
| <i>Ranunculus acris</i> | Meadow buttercup | D |
| <i>Rumex obtusifolius</i> | Broad-leaved dock | O |
| <i>Senecio jacobaea</i> | Common ragwort | R |
| <i>Taraxacum officinale agg.</i> | Dandelion | O |
| <i>Trifolium pratense</i> | Red clover | F |
| <i>Trifolium repens</i> | White clover | O |

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Target Note 3

Poor semi-improved grassland grazed by horses (see photo 4).

| <i>Scientific name</i> | Common name | Abundance |
|-------------------------------|----------------------------|------------------|
| <i>Agrostis capillaris</i> | Common bent | F |
| <i>Arrhenatherum elatius</i> | False oat-grass | O |
| <i>Brachypodium pinnatum</i> | Tor grass | R |
| <i>Cerastium fontanum</i> | Common mouse-ear | R |
| <i>Cirsium vulgare</i> | Spear thistle | R |
| <i>Convolvulus arvensis</i> | Field bindweed | R |
| <i>Dactylis glomerata</i> | Cock's-foot | A |
| <i>Festuca</i> sp. | Fescue species | F |
| <i>Galium verum</i> | Lady's bedstraw | R |
| <i>Lotus corniculatus</i> | Common bird's-foot-trefoil | R |
| <i>Phleum pratense</i> | Timothy | R |
| <i>Ranunculus acris</i> | Meadow buttercup | R |
| <i>Ranunculus repens</i> | Creeping buttercup | R |
| <i>Sherardia arvensis</i> | Field madder | R |
| <i>Trifolium repens</i> | White clover | O |
| <i>Veronica chamaedrys</i> | Germander speedwell | R |

Target Note 4

Managed improved grassland containing coarse grasses c. 60 tall with a limited number of forb species (see photo 5)

| <i>Scientific name</i> | Common name | Abundance |
|-------------------------------|--------------------|------------------|
|-------------------------------|--------------------|------------------|

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| | | |
|------------------------------|---------------------|---|
| <i>Arrhenatherum elatius</i> | False oat-grass | F |
| <i>Bromus hordeaceus</i> | Soft brome | R |
| <i>Convolvulus arvensis</i> | Field bindweed | R |
| <i>Dactylis glomerata</i> | Cock's-foot | D |
| <i>Festuca</i> sp. | Fescue species | O |
| <i>Holcus lanatus</i> | Yorkshire fog | R |
| <i>Lolium perenne</i> | Perennial rye-grass | R |
| <i>Plantago lanceolata</i> | Ribwort plantain | R |
| <i>Trifolium repens</i> | White clover | R |

Target Note 5

Badger sett within woodland belt with two active entrance holes (see photo 6).

Target Note 6

Badger latrine on woodland edge with 5 active dung pits and a number of unused scrapes (see photo 7).

Target Note 7

Mature tree with crown removed to 6m height. Very dense ivy cover which may provide opportunities for roosting bats (see photo 8).

Hedgerows I-II – See photos 3, 8-16

| Scientific name | Common name | Abundance |
|------------------------------|--------------------|------------------|
| <i>Acer campestre</i> | Field Maple | A |
| <i>Anthriscus sylvestris</i> | Cow parsley | R |
| <i>Arctium minus</i> | Lesser burdock | R |
| <i>Arrhenatherum elatius</i> | False oat-grass | F |
| <i>Bryonia dioica</i> | White bryony | R |
| <i>Calystegia sepium</i> | Hedge bindweed | A |

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| | | |
|----------------------------------|------------------|---|
| <i>Carpinus betulus</i> | Hornbeam | R |
| <i>Clematis vitalba</i> | Traveller's joy | R |
| <i>Centaurea nigra</i> agg. | Black knapweed | R |
| <i>Cornus sanguinea</i> | Dogwood | F |
| <i>Corylus avellana</i> | Hazel | F |
| <i>Crataegus monogyna</i> | Hawthorn | F |
| <i>Dactylis glomerata</i> | Cock's-foot | F |
| <i>Euonymus europaeus</i> | Spindle | R |
| <i>Fraxinus excelsior</i> | Ash | F |
| <i>Galium aparine</i> | Cleavers | F |
| <i>Geranium robertianum</i> | Herb Robert | O |
| <i>Hedera helix</i> | Ivy | F |
| <i>Hyacinthoides non-scripta</i> | Bluebell | R |
| <i>Ilex aquifolium</i> | Holly | R |
| <i>Knautia arvensis</i> | Field scabious | O |
| <i>Lamium album</i> | White deadnettle | O |
| <i>Ligustrum vulgare</i> | Wild Privet | O |
| <i>Malus/Pyrus</i> sp. | Apple/pear tree | R |
| <i>Mercurialis perennis</i> | Dog's mercury | R |
| <i>Prunus spinosa</i> | Blackthorn | F |
| <i>Prunus</i> sp. | Cherry species | R |
| <i>Quercus robur</i> | Pedunculate Oak | O |
| <i>Rhamnus cathartica</i> | Buckthorn | R |

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| | | |
|------------------------------|-------------------|---|
| <i>Rosa canina</i> | Dog rose | F |
| <i>Rubus fruticosus agg.</i> | Bramble | F |
| <i>Rumex obtusifolius</i> | Broad-leaved dock | F |
| <i>Sambucus nigra</i> | Elder | F |
| <i>Urtica dioica</i> | Common nettle | F |
| <i>Viburnum lantana</i> | Wayfaring-tree | O |
| <i>Vicia sativa</i> | Common vetch | O |