



**BIODIVERSITY REPORT**  
**LAND SOUTH OF BRAYS LANE**  
**ROCHFORD**

Submitted To:  
**A W Squier Ltd**  
Rochford, Essex



Submitted By:  
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## REPORT SUMMARY

1. This document represents an ecological assessment of land south of Brays Lane, Rochford. This was required to support a planning application for a development including residential housing with associated infrastructure, a bus turning and waiting area to serve the existing school and a sports playing field.
2. A site walkover survey of the main part of the site was conducted on the 18 March 2010 by an experienced AMEC Earth & Environmental ecologist. An additional area of arable farmland, proposed as a sports playing field, was added to the design at a later date, and this area was assessed using internet aerial imagery. This report provides a habitat map and information regarding existing habitats and any potential within the site for protected species or species of conservation concern. A desk study was also conducted in which wildlife records were reviewed and information concerning designated nature conservation sites was gathered.
3. The site comprised two parcels of land on the edge of the town of Rochford. The larger parcel immediately south of Brays Lane was approximately 5.4ha (hectares) and comprised mainly horse grazing and stabling. The second parcel of land of approximately 1.9ha and to the east of Oxford Road comprised arable farmland.
4. The desk study revealed one statutorily designated Local Nature Reserve (LNR) and three non-statutorily designated Local Wildlife Sites (LoWs) within 1 km of the site. All of these sites were considered too distant to be adversely impacted by the proposals, and therefore recommendations for their protection are not required.
5. It was considered that the boundary hedgerows of the proposed playing field potentially provided suitable habitat for reptiles and great crested newt (GCN), however, the current Master Plan indicates that these are to remain and are not be impacted. Furthermore, recent surveys revealed that GCN are likely absent from this area. It is therefore considered that no further action is required with regards reptiles or GCN.
6. Additionally, the site is mainly horse grazed pasture and arable farmland and consequently it is considered unlikely that reptiles would use these habitats.
7. All of the trees, hedgerows and scrub had the potential to be used by nesting birds. It is therefore recommended that, if this vegetation is cleared during the nesting season, the trees and scrub are checked for breeding birds immediately prior to any clearance works by a suitably trained and experienced ecologist.
8. Several trees along the boundaries of the main site were considered to have a low - medium potential to be used by roosting bats. Should the trees highlighted be impacted by the development proposals then it is recommended that reasonable avoidance measures are put in place, although, no further survey of these trees is considered necessary. There are seasonal constraints in respect of bat surveys.
9. Several hedgerows surrounded the site that had the potential to be used by foraging / commuting bats however, the current Master Plan indicates that the hedgerows are to remain and therefore no further action is required.
10. It is recommended that any lighting used within the scheme is directed away from the hedgerows and any trees with bat roost potential. If this is not possible then bat activity surveys may be required.

11. Recommendations have also been made with regards to Biodiversity Action Plan species, other species of conservation concern and the ecologically important habitats that are present on the site.

## **1. INTRODUCTION**

### **1.1 Background**

1.1.1 AMEC Earth & Environmental (UK) Limited (AMEC) was commissioned by A W Squier Ltd to conduct an ecological assessment of land south of Brays Lane, Rochford in Essex. This was required to support a planning application for the a residential housing development with associated infrastructure, a bus turning and waiting area to serve the existing school and a new sports playing field.

1.1.2 The site comprised two parcels of land; the main area of land was approximately 5.4ha (hectares) to the south of Brays Lane comprising mainly pasture (horse grazing) and stabling. The second parcel of land, of approximately 1.9ha and to the east of Oxford Road, comprised of arable farmland, and is proposed as a sports playing field.

1.1.3 The work reported here involved a site walkover survey to identify habitats present and any potential for protected species or species of conservation concern, and/or ecological features of importance within the site boundary. The assessment of the site enables the importance of the site for protected species and species of conservation concern to be determined. A desk study was also conducted to identify designated wildlife or nature conservation sites within, or near to the site, as well as protected species records within the area.

1.1.4 There are a range of legal and policy issues that may be pertinent to the site/proposals, forming the basis for the requirement for this report. Such issues may include the presence, or potential presence of protected species, designated sites, and/or other species and habitats of conservation concern, such as Biodiversity Action Plan (BAP) species or habitats, and species or habitats listed on Section 41 of the Natural Environment and Rural Communities Act 2006 (S41). Full details regarding the ecological legislation and policy requirements are provided in Annexes A and B of this document.

### **1.2 Location**

1.2.1 The assessment site, hereafter referred to as the 'site', consisted of two areas of land both south of Brays Lane, Rochford SG8 5JD in the district Rochford. The central Ordnance Survey grid reference for the main area of land is TQ 871 922 and for the area east of Oxford Road is TQ 876 919.

## 2. METHODOLOGY

### 2.1 Desk Study

- 2.1.1 Evidence of protected, UK Biodiversity Action Plan (BAP) and Essex BAP species in the area was checked using the National Biodiversity Network (NBN) website<sup>1</sup> and the Essex Field Club website<sup>2</sup>. A search was undertaken on the Multi-agency Geographic Information for the Countryside (MAGIC) website<sup>3</sup> for any statutorily designated wildlife sites located within 2 km of the site. The Essex Wildlife Trust's Local Wildlife Site website<sup>4</sup> was also checked to identify the presence of any non-statutory sites within 1 km of the site.

### 2.2 Field Survey

- 2.2.1 A Phase 1 Habitat Survey was completed based on the methods detailed by the Joint Nature Conservation Committee (JNCC)<sup>5</sup>. The survey involved the recording of the habitat types and ecological features present on the site, and included the identification of any species present within the site. Furthermore, the site was examined for the presence of any signs/evidence of, and/or the appropriate habitats and potential for protected species and/or species of conservation concern to be present. Habitats were mapped (Figure 1) and target notes made of any features of interest.
- 2.2.2 The parcel of land to the east of Oxford road was not visited during the field survey as this area was added to the assessment site after the site visit. Therefore, internet aerial imagery was used to make an assessment of the ecological features present.

### 2.3 Limitations and Assumptions

- 2.3.1 The baseline conditions reported and assessed in this report represent those identified at the time of the site survey.
- 2.3.2 Site conditions will influence the results of the field survey, and further limitations may become apparent during the site survey.
- 2.3.3 Protected species and species of conservation concern/valued species may travel over wide areas and/or may have large home ranges/territories. Furthermore, species may colonise a new site or re-colonise a previously used site at any time. Therefore such species may be absent at the time of survey but may require consideration within the assessment. The desk study exercise and timing and survey methodology aims to reduce the likelihood of overlooking such potential presence.

<sup>1</sup> url: <http://www.nbn.org.uk/>

<sup>2</sup> url: <http://www.essexfieldclub.org.uk/>

<sup>3</sup> url: [www.magic.gov.uk](http://www.magic.gov.uk)

<sup>4</sup> url: <http://maps.localwildlifesites.org.uk/>

<sup>5</sup> JNCC (revised reprint 2010). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. JNCC, Peterborough.

### **3. RESULTS**

#### **3.1 Desk Study**

##### ***Designated Sites***

##### ***Statutory Sites***

- 3.1.1 According to 'MAGIC' , Magnolia Fields Nature Reserve, designated as a Local Nature Reserve (LNR), is located approximately 815 m to the west of the site on the far side of Rochford town. This site comprises pastures, areas of rough grassland, scrub and woodland. A large population of great crested newt (GCN) has been recorded at this site as well as grass snake and lizard.

- 3.1.2 The desk study did not reveal any other statutory sites within 2 km of the site.

##### ***Non-statutory Sites***

- 3.1.3 According to the Essex Wildlife Trust's Local Wildlife Site website, there are three non-statutory Local Wildlife Sites (LoWs) within the 1 km search area from the site, namely:

- Magnolia Fields Nature Reserve (also the LNR above),
- Doggett's Pond, located approximately 400 m to the south of the site, a former gravel pit noted for its general wildlife interest, with both GCN and water vole recorded there; and
- Wood Sloppy, a small oak and ash woodland approximately 730 m east of the application site.

##### ***Environmental Stewardship Agreement***

- 3.1.4 According to 'MAGIC' the majority of the site and the arable land in the vicinity of the site is part of an entry level environmental stewardship agreement, which is a voluntary scheme to encourage farmers to deliver basic levels of environmental management, such as hedgerow management.

##### ***Protected Species***

- 3.1.5 The desk study revealed that soprano pipistrelle bat has been recorded within 10 km north of the site in 2008.
- 3.1.6 GCN has been recorded at Magnolia Fields LNR and at Doggett's Pond LoW and both these sites are within 1 km of the application site, although Magnolia Fields LNR is separated from the site by a substantial extent of residential housing and roads. GCN have also been recorded approximately 1 km south-east of the site in 2005 and approximately 3 km east of the site at Ballads Gore in 2007.
- 3.1.7 Grass snake and lizard have been recorded at Magnolia Fields LNR.
- 3.1.8 Water vole has been recorded approximately 4 km north of the site in 2008.



- 3.1.9 No other records of protected species were identified, however, a lack of records does not necessarily imply a species absence but might simply indicate a lack of recording effort for that area.

***Biodiversity Action Plan Species and Other Species of Conservation Concern***

- 3.1.10 A number of Essex and UK BAP species such as house sparrow and stag beetle have been recorded within 2 km of the site.

## **3.2 Field Survey**

### ***Site Description***

- 3.2.1 Adele Devonshire, an AMEC Earth & Environmental ecologist, visited the main site on the 18 March 2010. Access was provided to the site, but not to any adjacent land. Figure 1 provides a habitat plan of the site with the Target Note (TN) locations shown.
- 3.2.2 The main area of land was approximately 5.4 hectares (ha) in extent on the edge of the town of Rochford. The land was south of Brays Lane and was approximately 210 m long and 250 m wide and consisted of horse paddocks with hedgerow boundaries and a stable yard and an indoor riding school. The habitats present on the site at the time of the survey comprised of:
- Improved grassland
  - Arable cropland
  - Hedgerow
  - Dense scrub
  - Scattered scrub
  - Scattered trees
  - Buildings (stables and indoor riding school)
  - Hard-standing
- 3.2.3 The main site consisted mainly of horse grazed pasture with a stable yard towards the east (Photograph 1). Blackthorn hedgerows formed the majority of the boundaries, with some dense bramble (TN 1) and the occasional tree. Towards the east of the site within the site boundary was a stable yard, with many stable blocks and piles of manure and general waste (Photograph 2). To the north of the stable yard was a large indoor riding school (Photograph 3).
- 3.2.4 Surrounding land included residential housing and associated gardens to the west of the site with a school to the south and further housing and horse paddocks (pasture) to the east. Brays Lane bounded the site to the north with arable farmland beyond.

**Photograph 1: View East Within Main Site**



**Photograph 2: Stable Yard Buildings**



**Photograph 3: Indoor Riding School**



- 3.2.2 The parcel of land near Oxford Road was a square field of approximately 1.9ha in extent comprising arable farmland (TN 4) with hedgerows (TN 5) along the northern and eastern boundaries. Further arable farmland surrounded much of the site with a tree plantation area to the north.

### **3.3 Ecological Constraints**

- 3.3.1 Certain plant and animal species are protected under the Wildlife and Countryside Act 1981 (as amended). European plant and animal species are protected under the Conservation of Habitats and Species Regulations 2010. Badgers are protected under their own legislation, the Protection of Badgers Act 1992.
- 3.3.2 The findings of the survey in respect of protected species and ecological constraints are presented overleaf, with details of the protected species legislation provided in Annex A.
- 3.3.3 The results of the assessment are shown in Table 1 overleaf. TNs refer to the target notes on the Phase I Habitat plan.

**Table 1: Ecological Constraints**

Species/ Feature	Potential Habitat	Y/N, Brief Detail, Target Notes (TNs)
Reptiles	Suitable foraging	Y – Both parts of the site had boundary hedgerows and some vegetated areas (TN 1 & 5) that could be used by foraging reptiles, however, the grazed pasture and the arable field was considered unsuitable for foraging reptiles.
	Suitable refugia or hibernacula	Y – Some areas along the boundaries had features suitable as hibernacula/refugia for reptiles.
Great Crested Newt (GCN)	Water-bodies within 250 m of site with breeding GCN potential	Y – Ditch on northern side of Brays Lane road (TN 6).
	Suitable terrestrial habitat within site	Y – As with reptiles, terrestrial habitat restricted to the boundaries was considered suitable for GCN.
	Suitable connectivity between water-bodies and site	Y – Hedge lines and tall grass margins.
Badgers	Setts or potential sett habitat within site or within 30 m of site	N – No signs of badger activity found.
	Distance of sett(s) from site	N/A
	Badger signs present	N
Bats	Trees with bat potential (Low, Medium or High) within or adjacent to site	Y – Several trees (TN 2 & 3) within the site were identified as having a low – medium potential for roosting bats.
	Buildings with bat potential (Low, Medium or High) within or adjacent to site	N
	Suitable foraging and/or commuting habitat	Y – Hedgerows and trees connect to the site.
Birds	Suitable nesting habitat	Y – Throughout the site within the scrub, trees and hedges and also within ivy on the main building.
	Potential for Schedule 1 species	N
Dormice	Suitable habitat	N
	Signs of activity	N
Watercourses (water voles, otters, crayfish)	Watercourses within, adjacent or nearby to site	Y – Ditch TN 6.
	Signs of, or potential for riparian mammals	N – Lack of vegetation in TN 6 ditch unsuitable for water voles and not connected to other suitable habitat.
	Potential for crayfish	N

3.2.5 No habitats suitable for notable invertebrates/assemblages were found, neither was there any potential for botanical interest or important hedgerows or any invasive species found.

#### ***Biodiversity Action Plan Species and Other Species of Conservation Concern***

3.2.6 Certain plant and animal species are of conservation concern, such as those listed on the UK and local BAPs and Section 41 of the Natural Environment and Rural Communities Act. Details of BAP and S41 species are provided in Annex A.

- 3.2.7 The site provided potential habitat for song thrush, with the arable site also potentially providing habitat for brown hare and grey partridge, all three of these species are Essex and UK BAP Species and S41 species.

## **4. CONCLUSIONS**

### **4.1 Designated Sites**

#### *Statutory Sites*

- 4.1.1 The desk study found there to be one statutory designated site within the 2 km search area of the site. Magnolia Fields LNR is approximately 780 m to the west of the site, however, it is separated from the site by the town Rochford and is therefore unlikely to be directly impacted by the proposals. A possible indirect impact could be an increase in recreational pressure from the new residents of the development, however, the Magnolia Fields LNRs management plan would provide ways of dealing with visitor pressure, such as the encouraged use of footpaths etc, therefore, no further recommendations regarding this designated site are made.

#### *Non-statutory Sites*

- 4.1.2 The desk study found there to be three non-statutory designated site within the 1 km search area of the site. Namely Magnolia Fields LNR (mentioned in paragraph 4.1.1 above), Doggetts Pond, and Wood Sloppy. All three LoW Sites are considered too distant to be directly impacted by the proposals, furthermore, they are likely to be on private land and therefore are unlikely to suffer from any increase in visitor pressure, therefore, no further recommendations regarding designated sites and the proposals are provided.

### **4.2 Habitat**

- 4.2.1 The main area of the site consisted largely of heavily grazed pasture and the smaller land parcel was largely arable, both these habitats are considered to be of relatively limited nature conservation value.
- 4.2.2 Hedgerows, a Habitat of Principle Importance, ran along the majority of the boundaries of the main area of land, but were considered not to be species rich, containing mainly blackthorn with occasional bramble. The master plan<sup>6</sup> indicates that these hedgerows are to remain. Intact hedgerows also ran along two of the boundaries of the smaller parcel of land and according to the master plan these hedgerows are to remain also, and the land adjacent is to change from arable to improved/amenity grassland.
- 4.2.3 There were several mature trees along the boundaries of the main site. Recommendations regarding habitats on the site are presented in Section 5.

### **4.3 Species**

#### *Protected Species*

##### *Reptiles*

<sup>6</sup> Andrew Martin Associates. Illustrative Masterplan Land south of Brays Lane, Rochford. Drawing No' 010036/22A. 27/01/11.



- 4.3.1 Due to the presence of a large population of horses within the main area at the time of the survey and the consequently high level of disturbance it is considered unlikely that reptiles would use the site for foraging, refuge or hibernation.
- 4.3.2 The second parcel of land to the east of Oxford Road was arable farmland with boundary hedgerows to the north and east of the site. It is possible that reptiles could use the boundary hedgerows as foraging, refuge and for hibernation. However, the current Master Plan indicates that this area of land and the boundary hedgerows are to remain and therefore no further action is required with regards to the proposals and reptiles.

#### *Great Crest Newt*

- 4.3.3 As with reptiles, the presence of a large population of horses in the main area of land at the time of the survey and the consequently high level of disturbance it is considered unlikely that GCN would use the site for foraging or for refuge or hibernation. Furthermore, recent presence/absence surveys<sup>7</sup> concluded that GCN were likely absent from this area. It is considered that no further action with regards to GCN and the proposals are therefore required.

#### *Birds*

- 4.3.4 All of the trees, hedgerows and scrub had the potential to be used by nesting birds. In the UK the Wildlife and Countryside Act, 1981 (as amended) makes it illegal to damage, take, or destroy a wild bird's nest whilst it is being built or is in use, or to take or destroy its eggs (see Annex A). Therefore measures should be put in place to prevent any birds' nests being damaged or destroyed by any proposed works. Recommendations regarding nesting birds are provided in Section 5.

#### *Bats*

- 4.3.5 The trees marked TN 2 & 3 on the Phase 1 Habitat plan were considered to have a low to medium potential for roosting bats since they had either a dense covering of ivy or small amounts of damage. The hedgerows surrounding both parts of the site potentially provided bats with foraging habitat and connectivity to other potential foraging areas in the surrounding countryside.
- 4.3.6 All native species of bat are strictly protected under the Wildlife and Countryside Act 1981 (as amended) and under the Conservation of Habitats and Species Regulations 2010 (see Annex A). Bat roosts are afforded protection whether bats are present or not. In the event that the proposed works should impact the trees highlighted or hedgerows adverse impacts on bats and potential breaches in the law could result. Recommendations regarding roosting and foraging bats are therefore provided in Section 5.

<sup>7</sup> AMEC E & E Ltd. GCN Survey Report Brays Lane, Rochford. - A W Squier Ltd.  
Ref:7888010042.R3829. 01/06/10

- 4.3.7 According to the internet aerial imagery, there did not appear to be any mature trees within the second parcel of land, furthermore, the boundaries of the second parcel of land are to be unaffected by the proposals.

**Photograph 4: View Of Trees Within Main Area Of Site With Bat Roost Potential**



*Other Protected Species*

- 4.3.8 The site was assessed as being unsuitable for, or had no evidence of any other protected species. Therefore, no further surveys or mitigation are recommended for any other species.

***Biodiversity Action Plan Species and Other Species of Conservation Concern***

- 4.3.9 The site provided potential habitat for song thrush, grey partridge and brown hare, all of which are Essex BAP, UK BAP and S41 species (see Annex A). It is considered that the proposed development works will not have any adverse impacts on these species as the current master plan indicates that the hedgerows and the trees, that may be used by these species, are to remain. Furthermore the area of arable farmland to be lost represents a small area of this habitat which is well represented in the wider area surrounding the application site. Further recommendations regarding species of conservation concern are provided in Section 5.



## 5. RECOMMENDATIONS

### 5.1 Habitats

- 5.1.1 The current Master Plan indicates that the development will involve landscaping/removal of habitats. Therefore replacement habitat/appropriate landscape planting are recommended to compensate for the loss of any hedgerows and trees and to provide enhancements within the site.

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### 5.2 Species

#### *Protected Species*

- 5.2.1 The presence of protected species is a material consideration in decisions made by a local planning authority on individual planning applications and appeals (see Annex A). Therefore it is advised that any protected species surveys recommended in this report (see below) should be undertaken and the results assessed in conjunction with proposals for the site before any planning application is submitted to allow development of appropriate mitigation.

#### *Birds*

- 5.2.2 Due to the potential for birds to nest within the site it is recommended that any works to the trees, hedgerows, scrub and woodland should avoid the nesting season. Such works should ideally be undertaken between the end of August and mid-February to avoid the nesting season. Caution should still be taken during this period, though, as birds occasionally breed outside the main nesting season. Alternatively, immediately prior to any clearance the vegetation should be checked for nests and any nests found should be avoided and protected. Suitably trained and experienced ecologists should carry out such checks.

#### *Bats*

- 5.2.3 Several trees along the boundary of the main site (TN 2 & 3) were considered to have the potential for roosting bats. Should the trees highlighted be impacted by the development proposals it is recommended that reasonable avoidance measures are put in place, although, no further survey of these trees is considered necessary.
- 5.2.4 Reasonable avoidance measures are considered to be good practice. 'Soft felling' is a generic term used to describe more cautious felling approaches, using lowering and cushioning techniques to reduce the impact of felling limbs which may still have bats within cavities. Where proportionate to the impact, best practice approaches to felling may include methods such as additional dusk emergence or dawn re-entry surveys immediately prior to felling (during the active bat season) or the use of non-return valves to ensure that bats can leave but not return to a roost cavity before works begin.
- 5.2.5 The hedgerows on site were considered to have the potential to be used by commuting / foraging bats. The current master plan indicates that the hedgerows on the site are to remain, however, should any lighting incorporated into the scheme be directed at the hedgerows, or trees, then there may be impacts to

commuting/foraging bats and dedicated surveys may be needed to determine any bat use. There are seasonal constraints in respect to bat surveys (see annex D).

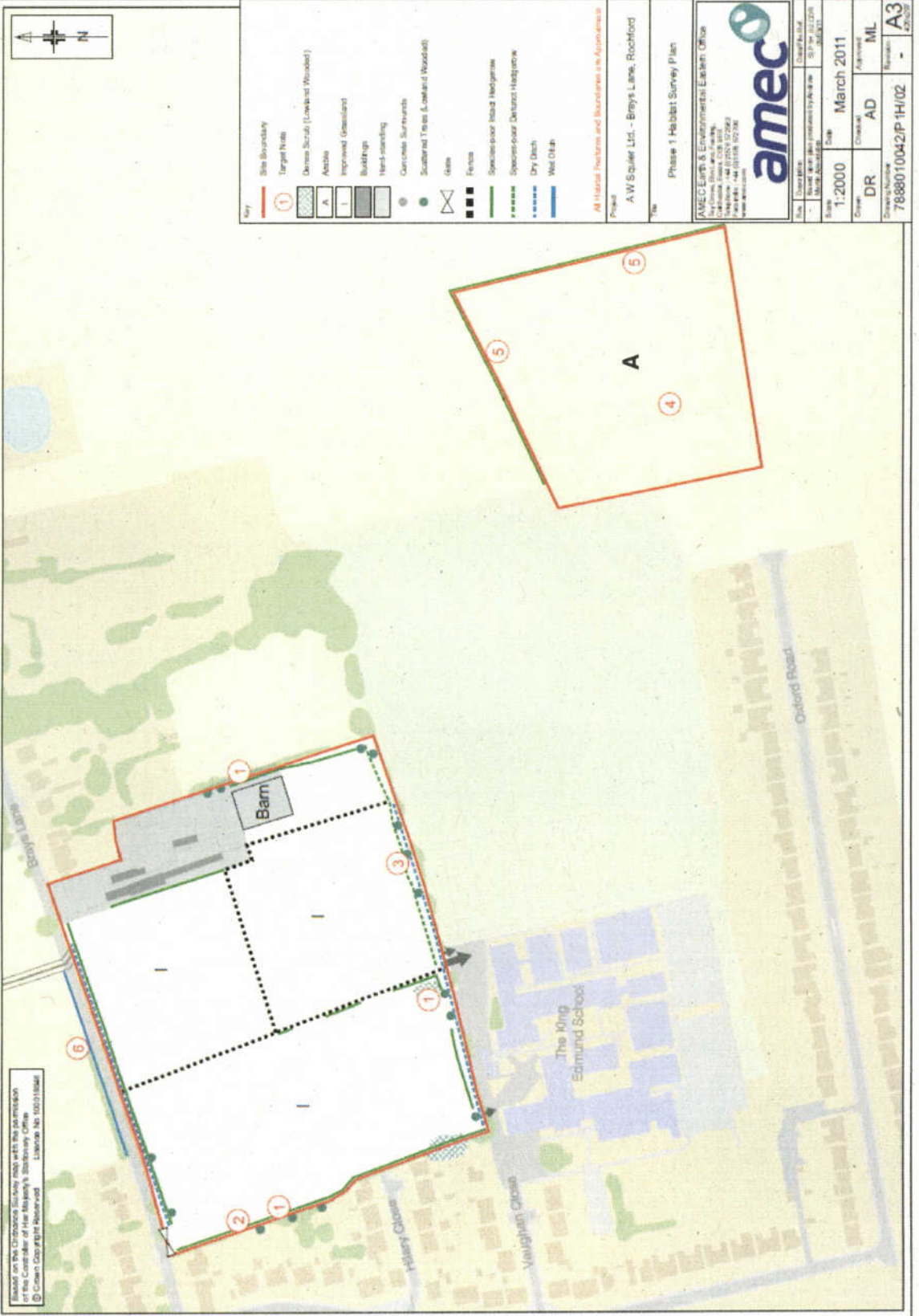
***Biodiversity Action Plan Species and Other Species of Conservation Concern***

- 5.2.6 The site provided potential habitat for a number of Essex BAP, UK BAP and S41 species. In order to further encourage these species and improve the biodiversity value of the site it is recommended that enhancements for wildlife are incorporated throughout the site, examples could include the creation of wild flower margin surrounding the proposed playing field area, log piles to encourage small mammals, amphibians and reptiles, and also the addition of one or more bird boxes.

## FIGURES

**FIGURE 1:**  
**Phase 1 Habitat Survey Plan**







## **ANNEXES**

**ANNEX A**  
**Wildlife Legislation and Policy Context**



## WILDLIFE LEGISLATION AND POLICY CONTEXT

### PROTECTED SPECIES LEGISLATION

The following provides background to the current legislation in England - for full details reference should be made to the relevant legislation.

A number of wild animals are classified as Protected Species as they are protected by various pieces of legislation. The most commonly encountered Protected Species of animal are listed in the Table 1. This table summarises which sections of legislation each species is protected by and the legislative text is provided on the following page.

**Table A1. Protected Species Legislation**

Species	Legislation	Wildlife and Countryside Act 1981 (as amended), Part 1						EPS	PBA
		S.1 (1)	S.1 (4 and 5)	S.9 (1)	S.9 (2)	S.9 (4)(a)	S.9 (4)(b)	S.9 (5)	
Adder ( <i>Vipera berus</i> )				•*				•	
Common lizard ( <i>Lacerta vivipara</i> )				•*				•	
Grass snake ( <i>Natrix natrix</i> )				•*				•	
Slow-worm ( <i>Anguis fragilis</i> )				•*				•	
Smooth snake ( <i>Coronella austriaca</i> )				•	•	•	•	•	
Sand lizard ( <i>Lacerta agilis</i> )				•	•	•	•	•	
Great crested newt ( <i>Triturus cristatus</i> )				•	•	•	•	•	
All UK bats ( <i>Chiroptera</i> )				•	•	•	•	•	
Water voles ( <i>Arvicola terrestris</i> )				•	•	•	•	•	
Otter ( <i>Lutra lutra</i> )				•	•	•	•	•	
Dormouse ( <i>Muscardinus avellanarius</i> )				•	•	•	•	•	
Badger ( <i>Meles meles</i> )									•
All Nesting Birds		•							
Specific Nesting Birds e.g. Barn owl and black redstart		•	•						

#### Key

S = Section of Part 1 of the Wildlife and Countryside Act 1981

( ) = Paragraph of section

EPS = European Protected Species, i.e. listed under Regulation 40 of the Conservation of Habitats and Species Regulations 2010

PBA = Protection of Badgers Act 1992

\* = Only part of this section

## **Legislative Text**

### ***Wildlife and Countryside Act 1981 (as amended)***

The Wildlife and Countryside Act 1981 (as amended), transposes into domestic law the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention). It is an offence under the various sections of Part 1 of the Act to-

- S.1(1)** intentionally kill, injure, or take any wild bird or their eggs or nests.
- S.1(4)** intentionally kill, injure, or take any wild bird listed on Schedule 1 of the Act, or their eggs or nests (special penalties apply if convicted) (For a full list of Schedule 1 bird species see the full text of the Wildlife and Countryside Act 1981 [as amended])
- S.1(5) (a)** disturb any wild bird listed on Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or  
**(b)** disturb dependent young of such a bird
- S.9(1)** intentionally kill, injure or take any wild animal included in Schedule 5 (certain reptiles are only protected from killing and injuring);
- S.9(2)** be in possession or control of any live or dead wild animal included in Schedule 5 or any part or derivative;
- S.9(4)(a)** intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a Schedule 5 animal for shelter or protection;
- S.9(4)(b)** disturb any such animal while it is occupying such a structure or place which it uses for that purpose
- S.9(5)(a)** sell, offer for sale, possess or transport any live or dead wild animal included in Schedule 5 for the purpose of sale or any part or derivative;
- S.9(5)(b)** advertise for buying or selling such things.

### ***European Protected Species (EPS)***

EPS and their breeding sites or resting places are protected under Regulation 40 of the Conservation of Habitats and Species Regulations 2010. These Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

The Regulations make it an offence (subject to exceptions) to-

- deliberately capture, injure or kill any animal listed on Schedule 2 of the Regulations;
- deliberately disturb any such animal;
- deliberately take or destroy their eggs;
- deliberately damage or destroy a breeding or resting place of such an animal;
- have in one's possession or control, any live or dead animal listed on Schedule 2.

However, these actions can be made lawful through the granting of licenses by the appropriate authorities, e.g. Natural England. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory



alternatives and that such actions will have no detrimental effect on the wild population of the species concerned.

On 21 August 2007 an amendment to the Regulations came into force. These amendments have a variety of consequences for the protection of Schedule 2 species and for Natural England's licensing processes. The threshold above which a person will commit the offence of deliberately disturbing a Schedule 2 species has been raised. The amended legislation now states (in Regulation 39(1)) that a person commits an offence if s/he:

- (b) deliberately disturbs wild animals of any such species in such a way as to be likely significantly to affect –
  - (i) the ability of any significant group of animals of that species to survive, breed, or rear or nurture their young; or
  - (ii) the local distribution or abundance of that species.

However, please note that the existing offences under the Wildlife and Countryside Act, which cover obstruction of places used for shelter or protection (for example, a bat roost), disturbance and sale, still apply to EPS.

### ***Protection of Badgers Act 1992 (PBA)***

The main legislation protecting badgers is the Protection of Badgers Act 1992. This Act consolidates all previous legislation including the Badgers Act 1973 (as amended) and the Badgers (Further Protection) Act 1991. Under the 1992 Act it is an offence to-

- destroy a sett;
- interfere with a badger sett by damaging a sett or any part thereof;
- obstruct access to a sett;
- disturb a badger while occupying a sett;
- willfully kill, injure, take or attempt to kill, injure or take a badger;
- dig for a badger;
- possess a dead badger or any part of a badger;
- cruelly ill-treat a badger;
- use badger tongs in the course of killing, taking or attempting to kill a badger;
- sell or offer for sale or control any live badger;
- mark, tag or ring a badger;
- cause a dog to enter a sett;

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger". Since development operations may take place over a protracted period, Natural England recommends that licences be sought for developments that may affect seasonally-used setts as well as main setts. Natural England considers a good guide to be that if a sett has shown signs of occupation within the past twelve months it is considered active.

The Protection of Badgers Act 1992 allows for licences to be issued for a number of purposes, including development under the Town and Country Planning Act 1990 and to prevent serious damage to property. Licences to interfere with badger setts or disturb badgers for development are issued by the Government's statutory nature conservation agencies, e.g. Natural England.

## **SPECIES AND HABITATS OF CONSERVATION CONCERN**

### **Biodiversity Action Plans (BAP) and Species and Habitats of Principal Importance for the Conservation of Biological Diversity**

In 1995, 'Biodiversity: The UK Steering Group Report' was published, which aimed to conserve and enhance biological diversity within the UK, including action plans for 38 key habitats and for 402 of our most threatened species. These plans describe the status of each habitat and species, outline the threats they face, set targets and objectives for their management, and propose actions necessary to achieve recovery. The Biodiversity Action Plans (BAP) have recently been updated, new ones added and others removed, so there are now 1,149 species and 65 habitats that have been listed as priorities for conservation action. A list of these UK BAP species and habitats can be found at <http://www.ukbap.org.uk/NewPriorityList.aspx>.

In addition there are approximately 150 Local Biodiversity Action Plans (LBAP), normally at county level. These plans usually include actions to address the needs of the UK priority habitats and species in the local area, together with a range of other plans for habitats and species that are of local importance or interest.

### **Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 - Habitats and Species of Principal Importance in England**

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 provides a list of Habitats and Species of Principal Importance in England (S41 list). This list was compiled to act as a guide to decision-makers such as public bodies in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006 "to have regard" to the conservation of biodiversity in England, when carrying out their normal functions. In particular Local Planning Authorities will use it to identify the species and habitats that require specific consideration in dealing with planning and development control.

There are 56 habitats and 943 species included on the S41 list. These are all habitats and species that have been identified as requiring action in the UK BAP. In addition, the hen harrier has also been included on the S41 list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

The S41 list can be downloaded from the Biodiversity Action Reporting System (BARS) website at <http://www.ukbap-reporting.org.uk/news/details.asp?X=45>.



## NATIONAL POLICY

### Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS 9)

#### ***Protected Species***

PPS9 provides guidance to planning authorities when considering biodiversity and geological conservation:

Protected species are referred to in PPS9 and its associated ODPM Circular 06/2005<sup>8</sup>. This guidance states that:

*'The presence of a protected species is a **material consideration** when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat'.*

It also states that:

*'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established **before the planning permission is granted**, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted'. 'The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests.'*

#### ***Species and Habitats of Conservation Concern***

PPS9 states that:

*'Other species have been identified as requiring conservation action as species of principal importance for the conservation of biodiversity in England. Local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents. Planning authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. Planning authorities should refuse permission where harm to the species or their habitats would result unless the need for, and benefits of, the development clearly outweigh that harm.'*

Furthermore the ODPM Circular 06/2005 states that:

*'The potential effects of a development, on habitats or species listed as priorities in the UK Biodiversity Action Plan (BAP), and by Local Biodiversity Partnerships, together with policies in the England Biodiversity Strategy, are capable of being a material consideration in the preparation of regional spatial strategies and local development documents and the making of planning decisions.'*

<sup>8</sup>

Government Circular: Biodiversity And Geological Conservation Statutory Obligations And Their Impact Within The Planning System. ODPM Circular 06/2005.

### **General Biodiversity Interest**

One of the key principles of PPS9 includes the following statement:

*'The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity and geological interests which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought.'*

Note that the statement refers to 'biodiversity interest', not just protected species and habitats and other species and habitats of conservation concern. A species may be of biodiversity interest, but the animal and/or its habitat may not be formally protected under current wildlife legislation.

Without suitable mitigation and/or compensation being proposed to offset potential damage to biodiversity interest, PPS9 directs local authorities to refuse planning permission:

*'If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.'*

**ANNEX B**  
**Designated Sites Background Information**



## DESIGNATED SITES BACKGROUND INFORMATION

### International Statutory Sites

#### *Special Areas of Conservation (SACs)*

Special Areas of Conservation (SACs) are designated under the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (European Commission (EC) Habitats Directive) which has been transposed into national law by means of the Conservation of Habitats and Species Regulations 2010 (also known as the Habitat Regulations). The purpose of SACs is to contribute to the maintenance or restoration of the favourable conservation status of the habitats or species listed in Annexes I and II of the Directive.

Projects/development within 5 km of a SAC will only be permitted if it has been ascertained that there is no adverse effect on the integrity of the site. However, projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest. In such cases compensation measures will be necessary to ensure the overall integrity of the SAC.

The Habitat Regulations do not provide statutory protection to candidate Special Areas of Conservation (cSACs) before they have been agreed with the EC. However, for the purposes of considering development proposals affecting them, as a matter of policy, the Government wishes cSACs included in a list sent to the EC to be considered in the same way as if they had already been classified or designated.

#### *Special Protection Areas (SPAs)*

Special Protection Areas (SPAs) are designated under the Council Directive 79/409/EEC on the Conservation of Wild Birds, as amended (EC Birds Directive). The purpose of SPAs is to conserve habitats for certain rare or vulnerable bird species listed in Annex I of the Directive and for regularly occurring migratory species of birds.

Projects/development within 5 km of a SPA will only be permitted if it has been ascertained that there is no adverse effect on the integrity of the site. However, projects may still be permitted if there are no alternatives and there are imperative reasons of overriding public interest. In such cases compensation measures will be necessary to ensure the overall integrity of the SPA.

The Directive does not provide statutory protection to potential Special Protection Areas (pSPAs) before they have been agreed with the EC. For the purposes of considering development proposals affecting them, as a matter of policy, the Government wishes pSPAs included in a list sent to the EC to be considered in the same way as if they had already been classified or designated.

#### *Ramsar Sites*

Ramsar Sites are designated under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) which was ratified by the UK in 1976. The purpose of Ramsar Sites is to protect wetlands of international importance.

Projects/development within 5 km of a Ramsar Site will only be permitted if it has been ascertained that there is no adverse effect on the integrity of the site. However, projects may still be permitted if there are no alternatives and there are imperative reasons of



overriding public interest. In such cases compensation measures will be necessary to ensure the overall integrity of the Ramsar Site.

The Convention does not provide statutory protection to listed Ramsar Sites. However, for the purposes of considering development proposals affecting them, as a matter of policy, the UK Government wishes listed Ramsar Sites to be considered in the same way as if they had already been classified or designated.

## **National Statutory Sites**

### *Sites of Special Scientific Interest (SSSIs)*

Sites of Special Scientific Interest (SSSIs) are areas of land considered to be of national nature conservation or geological interest. Natural England has the responsibility for identifying and protecting these SSSIs in England under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000).

According to the Government's Planning Policy Guidance: Planning Policy Statement 9<sup>9</sup>:-

*'Where a proposed development on land within or outside a SSSI is likely to have an adverse effect on an SSSI (either individually or in combination with other developments), planning permission should not normally be granted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs. Local authorities should use conditions and/or planning obligations to mitigate the harmful aspects of the development and where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest.'*

### *National Nature Reserves (NNRs)*

National Nature Reserves (NNRs) were established to protect the most important areas of wildlife habitat and geological formations in Britain, and as places for scientific research. Natural England has the responsibility for identifying and protecting these sites in England under the Wildlife and Countryside Act 1981 and the National Parks and Access to the Countryside Act 1949. An NNR is given strict protection against damaging operations, and any such operations must in theory be authorised by Natural England. It also has strong protection against development on and around it.

## **Local Statutory Sites**

### *Local Nature Reserves (LNRs)*

Local Nature Reserves (LNRs) are sites with wildlife or geological features that are of special interest locally and provide opportunities for the public to see, learn about and enjoy wildlife. They are designated by local authorities under Section 21 of the National Parks and Access to the Countryside Act 1949.

LNRs should be considered in relation to proposed development as the circular that accompanies the Government's Planning Policy Guidance: Planning Policy Statement 9<sup>10</sup> states that:-

*'Criteria-based policies should be established in local development documents against which proposals for any development on, or affecting, such sites (i.e. sites of regional and local biodiversity and geological interest) will be judged.'*

### **Non-statutory Sites**

Locally important sites of nature conservation, which are often called Local Wildlife Sites (and Local Geological Sites), County Wildlife Sites (CWSs), Sites of Importance for Nature Conservation (SINCs), Sites of Nature Conservation Importance (SNCI) or Sites of Biological Importance (SBI), are adopted by local authorities for planning purposes and identified in local development plans.

Local Wildlife Sites should be considered in relation to proposed development as the circular that accompanies the Government's Planning Policy Guidance: Planning Policy Statement 9<sup>11</sup> states that:-

*'Criteria-based policies should be established in local development documents against which proposals for any development on, or affecting, such sites (i.e. sites of regional and local biodiversity and geological interest) will be judged.'*

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<sup>10</sup> ODPM, August 2005. Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System.*

<sup>11</sup> ODPM, August 2005. Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System.*

**ANNEX C**  
**English and Scientific Names**  
**of Common Fauna and Flora Species**



**Table C1. English and Scientific Names of Common Fauna Species**

English Name	Scientific Name
<b>BIRDS</b>	
Barn Owl	<i>Tyto alba</i>
Black Redstart	<i>Phoenicurus ochruros</i>
Blackbird	<i>Turdus merula</i>
Blackcap	<i>Sylvia atricapilla</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Cetti's Warbler	<i>Cettia cetti</i>
Chiffchaff	<i>Phylloscopus collybita</i>
Cirl Bunting	<i>Emberiza cirlus</i>
Common Cuckoo	<i>Cuculus canorus</i>
Corn Bunting	<i>Emberiza calandra</i>
Dartford Warbler	<i>Sylvia undata</i>
Dunnock	<i>Prunella modularis</i>
Fieldfare	<i>Turdus pilaris</i>
Firecrest	<i>Regulus ignicapillus</i>
Garden Warbler	<i>Sylvia borin</i>
Goldcrest	<i>Regulus regulus</i>
Golden Plover	<i>Pluvialis apricaria</i>
Goldfinch	<i>Carduelis carduelis</i>
Great Spotted Woodpecker	<i>Dendrocopos major</i>
Greenfinch	<i>Carduelis chloris</i>
House Martin	<i>Delichon urbica</i>
House Sparrow	<i>Passer domesticus</i>
Kingfisher	<i>Alcedo atthis</i>
Lapwing	<i>Vanellus vanellus</i>
Lesser Whitethroat	<i>Sylvia curruca</i>
Linnet	<i>Carduelis cannabina</i>
Long-Eared Owl	<i>Asio otus</i>
Marsh Warbler	<i>Acrocephalus palustris</i>
Merlin	<i>Falco columbarius</i>
Nightingale	<i>Luscinia megarhynchos</i>
Nightjar	<i>Caprimulgus europaeus</i>
Redpoll	<i>Acanthis flammea</i>
Redwing	<i>Turdus iliacus</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Sand Martin	<i>Riparia riparia</i>
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>
Siskin	<i>Carduelis spinus</i>
Skylark	<i>Alauda arvensis</i>
Song Thrush	<i>Turdus philomelos</i>
Starling	<i>Sturnus vulgaris</i>
Stone Curlew	<i>Burhinus oedipnemos</i>
Stonechat	<i>Saxicola torquata</i>
Swallow	<i>Hirundo rustica</i>
Swift	<i>Apus apus</i>

English Name	Scientific Name
Tree Pipit	<i>Anthus trivialis</i>
Tree Sparrow	<i>Passer montanus</i>
Turtle Dove	<i>Streptopelia turtur</i>
Whinchat	<i>Saxicola rubetra</i>
White-Fronted Goose	<i>Anser albifrons</i>
Whitethroat	<i>Sylvia communis</i>
Willow Tit	<i>Parus montanus</i>
Willow Warbler	<i>Phylloscopus</i>
Wren	<i>Troglodytes troglodytes</i>
Yellow Wagtail	<i>Motacilla flava</i>
Yellowhammer	<i>Emberiza citrinella</i>
<b>Reptiles &amp; Amphibians</b>	
Adder	<i>Vipera berus</i>
Common Frog	<i>Rana temporaria</i>
Common Lizard	<i>Lacerta vivipara</i>
Common Toad	<i>Bufo bufo</i>
Grass Snake	<i>Natrix natrix</i>
Great Crested Newt	<i>Triturus cristatus</i>
Natterjack Toad	<i>Bufo calamita</i>
Palmate Newt	<i>Triturus helveticus</i>
Sand Lizard	<i>Lacerta agilis</i>
Slow Worm	<i>Anguis fragilis</i>
Smooth Newt	<i>Triturus vulgaris</i>
Smooth Snake	<i>Coronella austriaca</i>
<b>Crustacean</b>	
White-Clawed Crayfish	<i>Austropotamobius pallipes</i>
Signal Crayfish	<i>Pacifastacus leniusculus</i>
<b>Mammals</b>	
Badger	<i>Meles meles</i>
Bank Vole	<i>Clethrionomys glareolus</i>
Barbastelle Bat	<i>Barbastella barbastellus</i>
Bat Species	<i>Chiroptera</i>
Bechstein's Bat	<i>Myotis bechsteinii</i>
Brown Hare	<i>Lepus europaeus</i>
Brown Long-Eared Bat	<i>Plecotus auritus</i>
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>
Daubenton's Bat	<i>Myotis daubentonii</i>
Deer Species	<i>Cervidae</i>
Dormouse	<i>Muscardinus avellanarius</i>
Fallow Deer	<i>Dama dama</i>
Fox	<i>Vulpes vulpes</i>
Grey Squirrel	<i>Neosciurus carolinensis</i>
Harvest Mouse	<i>Micromys minutus</i>
Hedgehog	<i>Erinaceus europaeus</i>
Leisler's Bat	<i>Nyctalus leisleri</i>

English Name	Scientific Name
Mountain Hare	<i>Lepus timidus</i>
Muntjac Deer	<i>Muntiacus reevesi</i>
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>
Noctule Bat	<i>Nyctalus noctula</i>
Otter	<i>Lutra lutra</i>
Pine Martin	<i>Martes martes</i>
Rabbit	<i>Oryctolagus cuniculus</i>
Red Deer	<i>Cervus elaphus</i>
Red Squirrel	<i>Sciurus vulgaris</i>
Roe Deer	<i>Capreolus capreolus</i>
Serotine Bat	<i>Eptesicus serotinus</i>
Shrew	<i>Soricidae</i>
Sika Deer	<i>Cervus nippon</i>
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>
Water Shrew	<i>Neomys fodiens</i>
Wild Boar	<i>Sus scrofa</i>
Wood Mouse	<i>Apodemus sylvaticus</i>
<b>Invertebrates</b>	
Ants	<i>Hymenoptera: Formicidae</i>
Aphids	<i>Hemiptera: Aphidomorpha</i>
Bees	<i>Hymenoptera: Apoidea</i>
Beetles	<i>Coleoptera</i>
Butterflies	<i>Lepidoptera: Rhopalocera</i>
Wall Butterfly	<i>Lasiommata megera</i>
Digger Wasp	<i>Cercerus quinquefasciata</i>
Dingy Skipper	<i>Erynnis tages</i>
Micro Moths	<i>Eriocraniid micro moths</i>
Mites	<i>Acari</i>
Moths	<i>Lepidoptera</i>
Cinnabar moth	<i>Tyria jacobaeae</i>
Shrill Carder Bee	<i>Bombus sylvarum</i>
Solitary Wasps	<i>Hymenoptera: Aculeata</i>
Spiders	<i>Arachnidae spp.</i>
Stag Beetle	<i>Lucanus cervus</i>
True Bugs	<i>Hemiptera: Heteroptera</i>
Two-Winged Flies	<i>Diptera</i>
Wasps	<i>Hymenoptera</i>



**Table C2. English and Scientific Names of Common Flora Species**

English Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Annual meadow-grass	<i>Poa annua</i>
Apple spp.	<i>Malus</i> spp.
Ash	<i>Fraxinus excelsior</i>
Aspen	<i>Populus tremula</i>
Barren brome	<i>Anisantha sterilis</i>
Beech	<i>Fagus sylvatica</i>
Bee orchid	<i>Ophrys apifera</i>
Bittersweet	<i>Solanum dulcamara</i>
Black bryony	<i>Tamus communis</i>
Black horehound	<i>Ballota nigra</i>
Black poplar	<i>Populus nigra</i>
Blackthorn	<i>Prunus spinosa</i>
Bloody crane's-bill	<i>Geranium sanguineum</i>
Box	<i>Boxus sempervirens</i>
Bracken	<i>Pteridium aquilinum</i>
Bramble	<i>Rubus fruticosus</i> agg.
Branched bur-reed	<i>Sparganium erectum</i>
Bristly oxtongue	<i>Picris echinoides</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Broad-leaved pondweed	<i>Potamogeton natans</i>
Broad-leaved willowherb	<i>Epilobium montanum</i>
Broom	<i>Cytisus scoparius</i>
Bugle	<i>Ajuga reptans</i>
Bulrush	<i>Typha latifolia</i>
Bush vetch	<i>Vicia sepium</i>
Butterfly-bush	<i>Buddleja davidii</i>
Canadian fleabane	<i>Conyza Canadensis</i>
Canadian pondweed	<i>Elodea canadensis</i>
Cherry laurel	<i>Prunus laurocerasus</i>
Cherry spp.	<i>Prunus</i> spp.
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Colt's-foot	<i>Tussilago farfara</i>
Common bent	<i>Agrostis capillaris</i>
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>
Common cat's-ear	<i>Hypochaeris radicata</i>
Common couch	<i>Elytrigia repens</i>
Common cudweed	<i>Filago vulgaris</i>
Common field speedwell	<i>Veronica persica</i>
Common fleabane	<i>Pulicaria dysenterica</i>
Common fumitory	<i>Fumaria officinalis</i>
Common lime	<i>Tilia europaea</i>
Common mallow	<i>Malva sylvestris</i>
Common mouse-ear	<i>Cerastium fontanum</i>
Common nettle	<i>Urtica dioica</i>
Common poppy	<i>Papaver rhoeas</i>
Common ragwort	<i>Senecio jacobaea</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping cinquefoil	<i>Potentilla reptans</i>

English Name	Scientific Name
Creeping thistle	<i>Cirsium arvense</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Curled dock	<i>Rumex crispus</i>
Cut-leaved crane's-bill	<i>Geranium dissectum</i>
Cypress spp.	<i>Cupressus</i> spp.
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum officinale</i>
Dog's mercury	<i>Mercurialis perennis</i>
Dog-rose	<i>Rosa canina</i>
Dogwood	<i>Cornus sanguinea</i>
Domestic apple	<i>Malus domestica</i> agg.
Dove's-foot crane's-bill	<i>Geranium molle</i>
Elder	<i>Sambucus nigra</i>
English elm	<i>Ulmus procera</i>
False brome	<i>Brachypodium sylvaticum</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Field bindweed	<i>Convolvulus arvensis</i>
Field horsetail	<i>Equisetum arvense</i>
Field maple	<i>Acer campestre</i>
Field rose	<i>Rosa arvensis</i>
Field wood-rush	<i>Luzula campestris</i>
Field woundwort	<i>Stachys arvensis</i>
Floating sweet-grass	<i>Glyceria fluitans</i>
Garden privet	<i>Ligustrum ovalifolium</i>
Garlic mustard	<i>Alliaria petiolata</i>
Germander speedwell	<i>Veronica chamaedrys</i>
Glaucous sedge	<i>Carex flacca</i>
Goat willow	<i>Salix caprea</i>
Goat's-rue	<i>Galega officinalis</i>
Goat's-beard	<i>Tragopogon pratensis</i>
Gorse	<i>Ulex europaeus</i>
Great horsetail	<i>Equisetum telmateia</i>
Great mullein	<i>Verbascum thapsus</i>
Great willowherb	<i>Epilobium hirsutum</i>
Greater plantain	<i>Plantago major</i>
Grey poplar	<i>Populus. x canescens</i>
Grey willow	<i>Salix cinerea</i>
Ground-ivy	<i>Glechoma hederacea</i>
Hairy brome	<i>Bromopsis ramosa</i>
Hairy sedge	<i>Carex hirta</i>
Hard rush	<i>Juncus inflexus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hedge bindweed	<i>Calystegia sepium</i>
Hedge woundwort	<i>Stachys sylvatica</i>
Hedgerow crane's-bill	<i>Geranium pyrenaicum</i>
Hemlock	<i>Conium maculatum</i>
Herb Robert	<i>Geranium robertianum</i>
Hornbeam	<i>Carpinus betulus</i>
Hybrid bluebell	<i>Hyacinthoides x massartiana</i>
Ivy	<i>Hedera helix</i>



English Name	Scientific Name
Japanese knotweed	<i>Fallopia japonica</i>
Lesser burdock	<i>Arctium minus</i>
Lesser celandine	<i>Ranunculus ficaria</i>
Lesser pond-sedge	<i>Carex acutiformis</i>
Lesser stitchwort	<i>Stellaria graminea</i>
Lesser trefoil	<i>Trifolium dubium</i>
Lesser water parsnip	<i>Berula erecta</i>
Leyland cypress	<i>Cupressocyparis leylandii</i>
Lombardy poplar	<i>Populus nigra var italica</i>
Lords-and-ladies	<i>Arum maculatum</i>
Maple	<i>Acer</i> spp.
Meadow buttercup	<i>Ranunculus acris</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Moss spp.	<i>Bryophyta</i> spp.
Mugwort	<i>Artemisia vulgaris</i>
Native bluebell	<i>Hyacinthoides non-scripta</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Pedunculate oak	<i>Quercus robur</i>
Pendulous sedge	<i>Carex pendula</i>
Perennial rye-grass	<i>Lolium perenne</i>
Perennial sow-thistle	<i>Sonchus arvensis</i>
Perforate St John's-wort	<i>Hypericum perforatum</i>
Pine spp.	<i>Pinus</i> spp.
Prickly sow-thistle	<i>Sonchus asper</i>
Ragged robin	<i>Lychnis flos-cuculi</i>
Red campion	<i>Silene dioica</i>
Red clover	<i>Trifolium pratense</i>
Red dead-nettle	<i>Lamium purpureum</i>
Red fescue	<i>Festuca rubra</i>
Red valerian	<i>Centranthus ruber</i>
Reflexed stonecrop	<i>Sedum reflexum</i>
Rhododendron	<i>Rhododendron</i> spp.
Ribwort plantain	<i>Plantago lanceolata</i>
Rosebay willowherb	<i>Chamerion angustifolium</i>
Rough hawk's-beard	<i>Crepis biennis</i>
Rough meadow-grass	<i>Poa trivialis</i>
Scarlet pimpernel	<i>Anagallis arvensis</i>
Scots pine	<i>Pinus sylvestris</i>
Selfheal	<i>Prunella vulgaris</i>
Sharp-flowered rush	<i>Juncus acutiflorus</i>
Silver birch	<i>Betula pendula</i>
Smooth tare	<i>Vicia tetrasperma</i>
Soft rush	<i>Juncus effusus</i>
Soft-brome	<i>Bromus hordeaceus</i>
Spanish bluebell	<i>Hyacinthoides hispanica</i>
Spear thistle	<i>Cirsium vulgare</i>
Spruce	<i>Picea</i> spp.
Sweet chestnut	<i>Castanea sativa</i>
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>
Sycamore	<i>Acer pseudoplatanus</i>
Thyme-leaved	<i>Veronica serpyllifolia</i>

English Name	Scientific Name
speedwell	
Timothy	<i>Phleum pratense</i>
Traveller's-joy	<i>Clematis vitalba</i>
Tufted hair-grass	<i>Deschampsia cespitosa</i>
Tufted vetch	<i>Vicia cracca</i>
Vetch	<i>Vicia</i> spp.
Water forget-me-not	<i>Myosotis scorpioides</i>
Water mint	<i>Mentha aquatica</i>
Water star-wort spp.	<i>Callitriche</i> spp.
Weld	<i>Reseda luteola</i>
Wellingtonia	<i>Sequoiadendron giganteum</i>
White clover	<i>Trifolium repens</i>
White poplar	<i>Populus alba</i>
White willow	<i>Salix alba</i>
Wild cherry	<i>Prunus avium</i>
Wild Privet	<i>Ligustrum vulgare</i>
Wild teasel	<i>Dipsacus fullonum</i>
Yarrow	<i>Achillea millefolium</i>
Yellow iris	<i>Iris pseudacorus</i>
Yew	<i>Taxus baccata</i>
Yorkshire-fog	<i>Holcus lanatus</i>




**ANNEX D**  
**Protected Species Survey Timings**



**Table D1. Protected Species Survey Timings**

Survey \ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Badger±	Sub-optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Sub-optimal
Bat Emergence	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Sub-optimal	Sub-optimal	Sub-optimal
Bat Hibernation	Optimal	Optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Great Crested Newt	Sub-optimal	Sub-optimal	Optimal*	Optimal	Optimal	Optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Otter	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Reptiles	Sub-optimal	Sub-optimal	Sub-optimal	Optimal	Optimal	Sub-optimal**	Sub-optimal	Sub-optimal	Optimal	Sub-optimal	Sub-optimal	Sub-optimal
Water Vole	Sub-optimal	Sub-optimal	Sub-optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Sub-optimal	Sub-optimal

**Key**

 = Unsuitable period for survey     
  = Sub-optimal period for survey     
  = Optimal period for survey

\* Half survey effort needed between mid-April and mid-May.

\*\* Doubling of survey effort can prove likely absence.

± Although badgers are less active sub-optimal periods discovery of setts is easier due to the decreased vegetation cover.