

Central Somers Town CIP

Ecological Site Assessment – Extended Phase 1 Habitat Survey

DECEMBER 2015

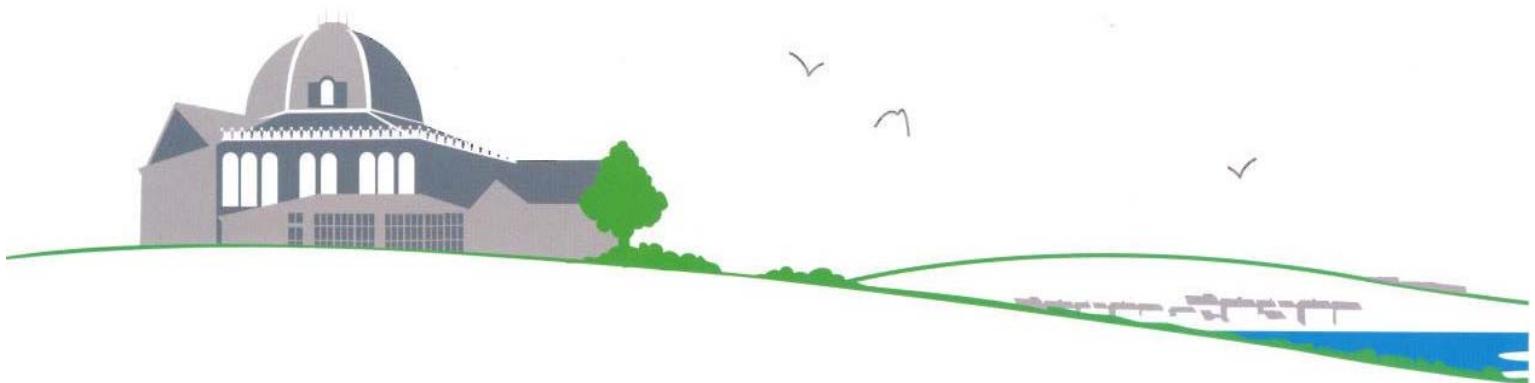




DSDHA

CENTRAL SOMERS TOWN, LONDON

EXTENDED PHASE 1 HABITAT SURVEY





DSDHA

CENTRAL SOMERS TOWN, LONDON

EXTENDED PHASE 1 HABITAT SURVEY

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April 2015

This project has been undertaken in accordance with PAA policies and procedures on quality assurance.

Signed: _____

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3	Habitat Botanical Species List
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1. INTRODUCTION

- 1.1 Penny Anderson Associates Ltd (PAA) was commissioned by DSDHA to carry out an 'extended' Phase 1 habitat survey at a site in Central Somers Town, London NW1. This report presents the results of a desk study and extended Phase 1 habitat survey of the site, including bat and building inspection, all undertaken on 23rd March 2015 by Helen Hamilton MCIEEM CEnv.

Proposals

- 1.2 Camden Council plans to deliver a new Edith Neville School, new community facilities, improved open spaces and new homes within the site.
- 1.3 The site boundary is shown on Figure 1.

2. METHODS

Desk study

- 2.1 A 1km data search was carried out for Central Somers Town, London NW1 1 (NGR TQ 298 831) by Greenspace Information for Greater London (GiGL), the capital's environmental records centre on 25th February 2015.

Extended Phase 1 Habitat Survey

- 2.2 The Phase 1 Habitat Survey was carried out by Helen Hamilton, using the methodology based upon guidance set out in the *Handbook for Phase 1 Habitat Survey* (JNCC 2010). This entailed mapping, describing and collating plant species lists for habitats across the area delineated for the survey. The broad habitat types were mapped, with each habitat type coded according to the standard JNCC Phase 1 Habitat Survey procedure.
- 2.3 Each plant species was assigned abundance codes within each habitat. This was done using the 'dafor' scale (where: d = dominant; a = abundant; f = frequent; o = occasional; r = rare), which provides an indication of the relative abundance of each plant species present within a particular habitat. The text uses common names for species, scientific names are provided in Appendix 1 - Desk Study Results, and Appendix 3 - Habitat Botanical Species List, according to Stace (2010).
- 2.4 The survey was 'extended' to include an assessment of the potential for protected species to inform any additional survey requirements in accordance with the approach described in Guidelines for Baseline Ecological Assessment (IEA 1995). In particular, all habitats, including buildings, other structures, trees and shrubs, were assessed for their potential to support breeding birds and/or roosting bats, with all bird species observed in the vicinity of the site recorded.
- 2.5 The survey was conducted on 23rd March 2015, in fine weather.

Limitations

- 2.6 Desk study - normally a 2km search area is used, but given the highly urban situation of the site within central London, a 1km search area is considered adequate to allow full assessment of the data for the existing species and sites relevant to the proposals.
- 2.7 Full access was available for all areas covered by the Phase 1 habitat survey. March is early in the growing season to carry out habitat survey, as some plants can be difficult to identify. However, the urban nature of this site meant that the survey was unlikely to encounter identification difficulties as the flora would be limited, and the survey is considered robust. The inspection of buildings was completed from the ground only, meaning that not all areas could be inspected directly.

3. RESULTS

Desk Study

- 3.1 A summary of the desk study is provided in Appendix 1, with more detail given below.

Statutory Sites

- 3.2 One Local Nature Reserve (LNR) was present within 1km of the site. This was Camley Street Nature Park, a 0.82ha site of urban wild space supporting a range of habitats of former vacant land, mainly valued for its educational resource. This LNR is less than 200m from the site, but located the other side of Kings Cross St Pancras Station, so is ecologically isolated from the proposals.
- 3.3 No other statutory sites were present within the search area or on the site itself.

Non Statutory Sites

- 3.4 Twelve Sites of Importance for Nature Conservation (SINCs) were located within the search area, although none were present on the site itself. The closest site, located about 200m away is St Pancras Gardens, an old church yard with amenity grassland, hedge, shrubbery, trees, tall herbs and vegetated walls and tombstones. The urban nature of this site is not considered vulnerable to impacts from the proposals. Other SINCs are located more distantly, the next nearest being St James Garden, another former churchyard located on the other side of Euston Station.
- 3.5 No other non-statutory sites were present within the search area.

Protected and Biodiversity Species

- 3.6 Summaries of the relevant legislation relating to relevant protected and biodiversity species are presented in Appendix 2.
- 3.7 No invasive, protected or biodiversity species were provided for the site itself, although a range of plants, insects, amphibians, birds and mammals have been recorded within the search area. These are summarised in Table 1.

Table 1 Invasive and Protected Species Records from GiGL

INVASIVE SPECIES				
Common Name	Scientific Name	Grid Reference	Date of record	Occurrences
Japanese knotweed	<i>Fallopia japonica</i>	TQ 29800 83600	26/07/1989-31/12/2012	13
Indian balsam	<i>Impatiens glandulifera</i>	TQ 30001 83443	01/01/1990-31/12/1999	2
Cotoneaster	<i>Cotoneaster</i>	TQ 30817 82902	10/07/2003-10/08/2010	6
Purple-flowered cotoneaster	<i>Cotoneaster atropurpureus</i>	TQ 29900 83400	01/01/1995-31/12/2008	4
Wall cotoneaster	<i>Cotoneaster horizontalis</i>	TQ 29500 83800	01/01/2012-31/12/2012	3
Willow-leaved cotoneaster	<i>Cotoneaster salicifolius</i>	TQ 29900 83400	01/01/1995-31/12/2008	4
Pale galingale	<i>Cyperus eragrostis</i>	TQ 29500 83800	01/01/2001-31/12/2012	3
Water fern	<i>Azolla filiculoides</i>	TQ 30001 83443	01/01/1995-31/12/1995	1
Montbretia	<i>Crocasmia pottsii aurea</i>	TQ 30001 83444	01/01/1990-31/12/2012	3
Snowberry	<i>Symphoricarpos albus</i>	TQ 29900 83400	01/01/1995-31/12/2012	8
Crustacean	<i>Chelicorophium curvispinum</i>	TQ 30440 83350	12/06/2008-28/08/2008	2
Signal crayfish	<i>Pacifastacus leniusculus</i>	TQ 30450 83450	12/06/2008-28/08/2008	1
Freshwater crayfish	<i>Procambarus clarkii</i>	TQ 29900 83400	05/07/2014	1
Aesculapian snake	<i>Elaphe longissima</i>	TQ 29990 83508	24/05/2012	1
PROTECTED SPECIES				
Common Name	Scientific Name	Distance & Direction from Site (m)	Date of Record	Occurrences
Stag beetle	<i>Lucanus cervus</i>	253N	22/05/2008	9
Soldier beetle	<i>Crudosilis ruficollis</i>	253N	05/07/2014	1
Flax flea beetle	<i>Longitalus parvulus</i>	326N	25/06/1905	1
Wall	<i>Lasiommata megera</i>	952N	09/08/1989	1
Cinnabar moth	<i>Tyria jacobaea</i>	287N	08/07/2006	1
Hoverfly	<i>Pipizella virens</i>	250N	25/06/1905	2
Hoverfly	<i>Volucella zona</i>	251N	05/07/2014	1
Median wasp	<i>Dolichovespula media</i>	252N	25/06/1905	2
A wasp	<i>Crossocerus (Crossocerus) distinguendus</i>	253N	25/06/1905	2
Bee	<i>Hylaeus cornutus</i>	253N	25/06/1905	2

Common Name	Scientific Name	Distance & Direction from Site (m)	Date of Record	Occurrences
Palmate newt	<i>Lissotriton helveticus</i>	253N	10/07/2008	1
Common toad	<i>Bufo bufo</i>	253N	12/09/2008	7
European otter	<i>Lutra lutra</i>	611N	20/06/2013	2
West European hedgehog	<i>Erinaceus europaeus</i> : <i>Linnaeus</i>	919NW	00/00/2002	1
Daubenton's bat	<i>Myotis daubentonii</i>	253N	26/07/2008	3
Noctule bat	<i>Nyctalus noctula</i>	691N	00/05/2011	1
Kuhl's pipistrelle	<i>Pipistrellus kuhlii</i>	208N	14/11/2006	1
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	471N	04/09/2005	3
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	253N	26/07/2008	15
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	253N	17/07/2008	11
Lapwing	<i>Vanellus vanellus</i>	351N	03/03/2005	50
Kingfisher	<i>Alcedo atthis</i>	253N	28/06/1905	5
Lesser spotted woodpecker	<i>Dryobates minor</i>	253N	11/07/2008	1
Yellow wagtail	<i>Motacilla flava</i>	253N	20/11/2008	4
Black redstart	<i>Phoenicurus ochruros</i>	253N	18/08/2008	2
Fieldfare	<i>Turdus pilaris</i>	371N	21/01/2015	3
Song thrush	<i>Turdus philomelos</i>	253N	28/06/1905	1
Redwing	<i>Turdus iliacus</i>	371N	21/01/2015	200
Firecrest	<i>Regulus ignicapilla</i>	253N	00/00/2006	2
Starling	<i>Sturnus vulgaris</i>	253N	00/00/2006	1
House sparrow	<i>Passer domesticus</i>	253N	05/07/2014	6
Brambling	<i>Fringilla montifringilla</i>	253N	00/00/2006	1
Reed bunting	<i>Emberiza schoeniclus</i>	253N	00/00/2006	7

- 3.8 In particular, birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 within the search area were: green sandpiper, common kingfisher, black redstart, fieldfare, redwing, firecrest and brambling. In addition, several birds listed as UK Priority species (on NREC Act Section 41) were also present within the search area: lapwing, spotted flycatcher, house sparrow and reed bunting. A number of additional birds listed as 'red' in birds of conservation concern (Gregory *et al.* 2009) were also present within the search area.
- 3.9 Mammals recorded within the search area were: European otter, West European hedgehog and various bats (including *Myotis* species, Daubenton's, Noctule, common pipistrelle, Kuhl's pipistrelle, Nathusius' pipistrelle and soprano pipistrelle). Habitats on site are not suitable for otter. West European hedgehog, listed as a UK Priority species (NERC Act Section 41) was recorded over 900m from the site, but could potentially find suitable habitats within the site boundary. Potential exists for bats to use habitats such as trees and buildings on site.
- 3.10 Fourteen invasive species were reported from the 1km search area, including Japanese knotweed and Indian balsam. A map of invasive species is presented in Appendix 1.

Greater London Authority (GLA) Habitats

- 3.11 GiGL provided information on habitats collected by the GLA using a range of methodologies for a number of areas within the search area. Two areas were located within the site boundary, described as follows:
- Purchase Street Open Space – 0.63ha of amenity grassland, scattered trees, bare artificial habitat and planted shrubbery.
 - Chalton Street Open Space – 0.48ha of amenity grassland, bare artificial habitat and scattered trees.
- 3.12 Both areas are listed as open spaces, Purchase Street as a park and garden, and Chalton Street as outdoor sports facilities.

Phase 1 Habitat Survey

- 3.13 The Central Somers Town site is situated within a densely urban area of central London. The site boundary encompasses several blocks of public open space, a community centre and garden and a primary school.
- 3.14 The Phase 1 habitat survey identified the following habitats within the site boundary:
- Pavement/hardstanding;
 - Amenity grass;
 - Hedge with trees;
 - Garden;
 - Scattered shrub; and
 - Urban park with trees.
- 3.15 The habitat areas are shown on Figure 1. Full species lists are presented in Appendix 3, together with target notes in Appendix 4.
- 3.16 Pavement and hardstanding was extensive across the site; they were well-maintained/used and supported little vegetation or habitat for fauna.
- 3.17 The amenity grass areas were localised, with grass dominated by rye-grass, with several common and widespread lawn species including dock and daisy. The habitat was also present as part of the urban park areas. There was evidence of significant trampling from frequent dog walking and passers by.
- 3.18 A short section of hedge with trees was present, dominated by hawthorn. The hedge was not old and had an open 'leggy' base. It was unmanaged on the side facing the school. Trees included ash and sycamore.
- 3.19 Areas managed as garden were situated within and adjacent to Plot 10 and within Coopers Lane Garden. Within the Plot 10 garden there were small areas of amenity grassland,

woodchip, decking and bare ground plus a range of planted shrubs, mainly non-native. The garden has flood lighting which is used when the centre is open after dark. Coopers Lane garden contained paved areas, raised beds, fruit trees, plus ornamental shrubs and some cultivated areas for vegetables. It was well-maintained and enclosed within a secure walled compound.

- 3.20 Shrubs were present in several locations, they comprised some native but mainly non-native species.
- 3.21 Urban park with trees characterised much of the site, being close-mown amenity grassland under a partial canopy of semi-mature non-native trees, mainly London plane or Norway maple. Some areas of bulb planting were present, including daffodils and Spanish bluebell. The parks all had street lighting throughout.
- 3.22 Overall the habitats were all highly modified and typical of such a highly urban setting. No semi-natural habitats were present, or those which would qualify as UK Priority Habitat under Section 41 of the NERC Act. No rare or unusual plant species were noted during the survey.
- 3.23 In terms of supporting protected or biodiversity species such as those identified in the desk study, no evidence was found of the following and site suitability is considered to be low:
- West European hedgehog – site unsuitable because of the highly managed nature of the site and the lack of suitable protective cover in daytime.
 - Schedule 1 birds – site unsuitable for most species. Black redstart's most important breeding area is in Greater London including Camden¹. However, the species prefers sparsely vegetated areas of rocky terrain with singing posts and close to nesting sites on post industrial units, power stations or aggregate works. The best sites are often along rivers and canals where invertebrate food sources are richer. The Central Somers Town area does not provide any areas of the species' preferred habitats.
- 3.24 Breeding birds – several UK Priority birds may breed in tree and shrub habitats on site, but numbers are likely to be low because of the levels of disturbance and the relative low value of the habitats available. House sparrow (*Passer domesticus*), song thrush (*Turdus philomelos*) and common starling (*Sturnus vulgaris*) are the most likely urban breeders. Common blackbird (*Turdus merula*) and feral pigeon (*Columba livia*) were noted on site during the survey and both could potentially breed on site.

Protected Species

- 3.25 A range of tree species were present on site, but all were young to semi-mature. None exhibited features that would make them potential bat roosts. All of the trees on site were classified as 'Category 3' after Hundt 2012, 'trees with no potential to support bat roosts'. However, a low level of bird activity (mainly common blackbird and feral pigeon) was present throughout the site and bird breeding within the trees is likely. Thus, no tree works/removal should be undertaken during the bird breeding season which may continue from March to September.

¹ http://www.lbp.org.uk/downloads/Publications/Management/black_redstart_advice_note.pdf

3.26 A total of eight buildings were inspected for their potential to support bats. These are described and their potential value for bats summarised in Table 2. Building numbering is shown on Figure 1.

Table 2 Bat and Building Inspection Results

Building	Notes	Potential Value for Bats
B1	Well-maintained community centre in regular use. Late 20th century structure with block walls and split pitched roof of pan tiles. Interior open to roof and no attic void. Wooden soffits present and all gaps cobwebbed. Other soffits metal and unsuitable. Several areas of localised lifted flashings and occasional tiles with gap beneath. Urban location with street lighting on three sides. Adjacent park of lower value for foraging as no semi-natural habitats or mature trees.	Negligible - no further survey needed.
B2	Plot 10 main building. Poorly maintained log cabin style building which was exteriorly damaged by fire in past, providing access for grey squirrels to shallow void between roof and interior. Roof is pitched board covered with roofing felt in variable condition. Many gaps present around eaves and higher up the roof. All gaps visibly obstructed by cobwebs, but some areas could not be clearly seen. Surrounded on all sides by street lighting from park, plus has own occasional floodlighting mainly used in winter.	Low/moderate value - two bat emergence/re-entry surveys recommended during active season for bats (May -September) because some areas on the roof could not be inspected fully.
B3	Plot 10 larger outbuilding. Two hexagonal rooms built of painted old railway sleepers with lined interior rooms used for activities and storage. Flat felt roof, no void. Kept locked and no access or evidence of bats found. Surrounded on all sides by street lighting from park, plus has own occasional floodlighting mainly used in winter.	Negligible - no further survey needed.
B4	Plot 10 smaller outbuilding. Two hexagonal rooms built of old railway sleepers which have been painted. Interior rooms used for storage. Flat felt roof, no void. Kept locked and no access or evidence of bats found. Surrounded on all sides by street lighting from park, plus has own occasional floodlighting mainly used in winter.	Negligible - no further survey needed.
B5	Edith Neville School main building. 1970s concrete slab construction, flat roof no void. Large plate glass windows. No cavity wall. Well-maintained. Several porches and canopies over class entrances. Surrounded on all sides by street lighting.	Negligible - no further survey needed.
B6	Sure Start Centre. Modern structure of breeze-block walls and sheet metal roof with no void. All soffits metal and gaps cobwebbed. High night-time lighting levels.	Negligible - no further survey needed.
B7	Edith Neville School pre-fabricated classroom building. Flat roof with shallow soffits, all gaps cobwebbed. High night time lighting levels.	Negligible - no further survey needed.
B8	Edith Neville School flat-roofed classroom extension building, brick. Some rot in wooden soffits and boarding, but all gaps cobwebbed. High night-time lighting levels.	Negligible - no further survey needed.

- 3.27 The habitats around the site offer low value foraging for bats because of the limited diversity of insect-rich habitats (wetlands, semi-natural grasslands, woodlands and mature trees) and because of the street lighting which is present across the survey area and would illuminate much of the site at night.
- 3.28 All the buildings were considered to have low value for bats, but the Plot 10 main building (B2) had a considerable number of potential access points and could not be fully inspected due to the elevated roof structure, therefore, bat activity surveys are recommended to determine the presence/absence of bats more accurately. Such survey should be undertaken in the May-September period when bats are active, and should comprise a dusk emergence and a separate dawn re-entry survey. It should be noted that two surveys within 24 hours comprise a single survey.
- 3.29 In summary, no bat roosts were found, but some low to moderate potential exists within Building 2, the Plot 10 main building, and further survey is recommended.

4. SUMMARY

- 4.1 The Central Somers Town site is situated within a densely urban area of central London. The site boundary encompasses several blocks of public open space, a community centre and garden and a primary school.
- 4.2 No statutory designated sites are located on the site. Camley Street Nature Park LNR is located 200m away but is isolated from the site ecologically.
- 4.3 No non-statutory sites were located within the site boundary, although 12 SINCs were reported from within the 1km search area. None are considered vulnerable to effects from the development proposals.
- 4.4 No invasive species, protected species or notable biodiversity records were returned for the site itself, although a range of bats, birds and invasive species are present within the wider search area.
- 4.5 The Phase 1 habitat survey identified the following habitats within the site boundary:
- Pavement/hardstanding;
 - amenity grass;
 - hedge with trees;
 - garden;
 - scattered shrub;
 - urban park with trees.
- 4.6 These are all man-made habitats of limited biodiversity value.
- 4.7 Trees on site were young to semi-mature and did not have any potential to support bat roosts, although they could provide nesting sites for breeding birds, which are protected.
- 4.8 No bat roosts were found during the inspection; however, of eight buildings inspected on site for potential bat roosts, one building was found to have low to moderate potential value for bat roosting - the Plot 10 main building (or B2 on Figure 1). The remaining buildings all had negligible potential for bat roosting due to their construction type and surrounding habitats.

Recommendations

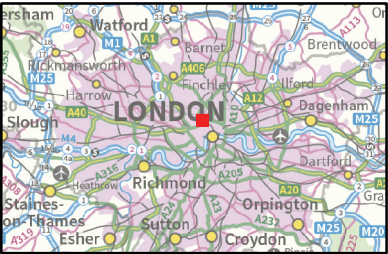
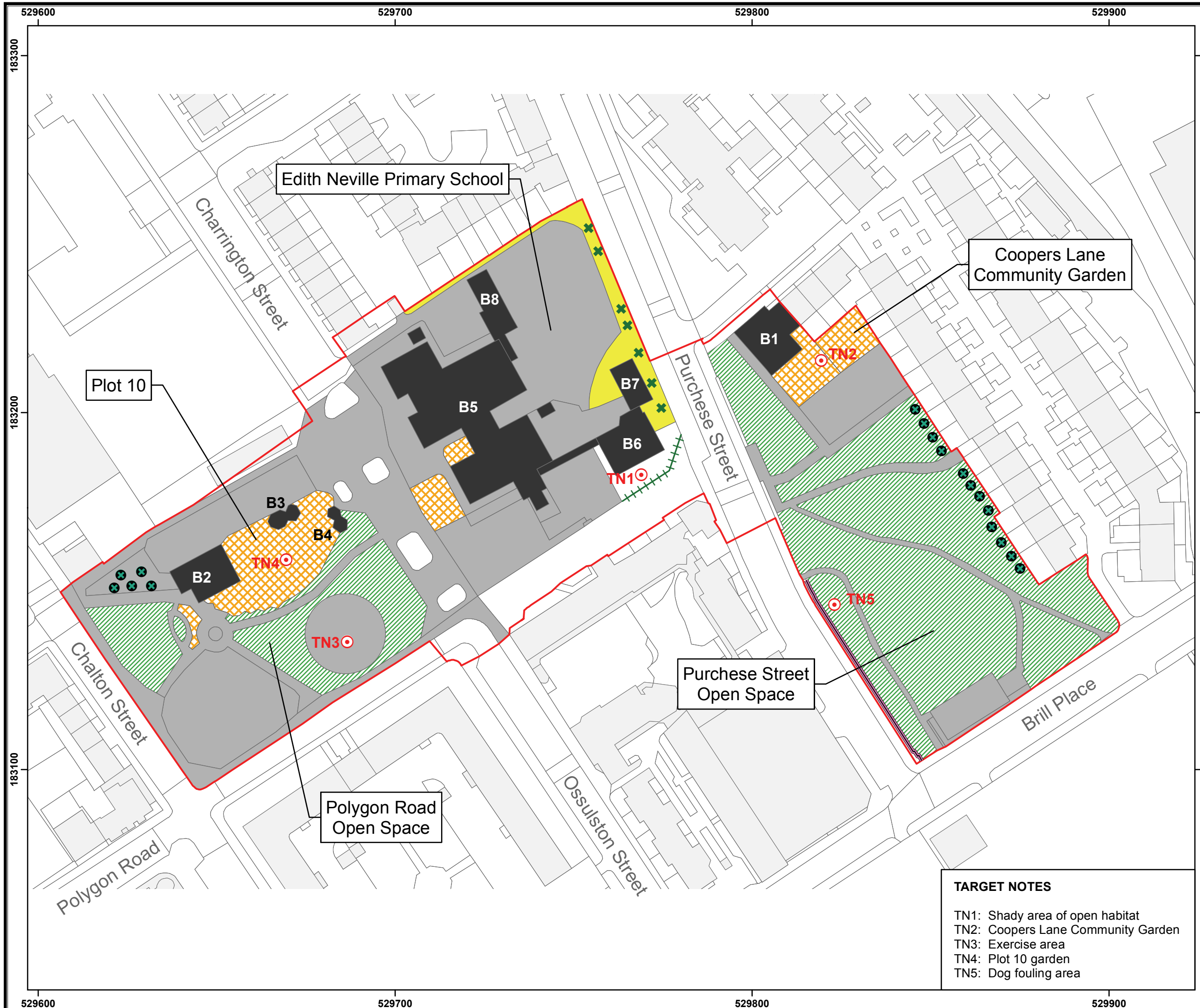
- 4.9 All tree and shrub management and removal must be undertaken outside the breeding period for birds (March to September inclusive).
- 4.10 Two bat activity surveys are recommended to confirm the presence/absence of bats, as the Plot 10 main building could not be thoroughly searched for bats from the ground, and it exhibited low-moderate value for roosting bats. These surveys should be undertaken between May and September, and must be 24 hours apart.

- 4.11 There is the potential to provide some bird nesting and bat roosting opportunities in new buildings proposed for the site. The advice of an appropriately qualified and experienced ecologist should be sought to maximise these opportunities for the development, to enhance its biodiversity value and to benefit the surrounding area.
- 4.12 Native tree and shrub species should be used in any re-planting proposals. These generally support a greater variety of wildlife species.

5. REFERENCES

- Gregory, R. D., 2009. Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man. *British Birds*, **102**, 296-341.
- Hundt, L., 2012. *Bat Surveys Good Practice Guidelines. 2nd Edition*. Bat Conservation Trust.
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FIGURE



Legend

— Site boundary

Habitats

Amenity grassland

Garden

Urban park with trees

Building*

Pavement/hardstanding

Hedge with trees

Brick wall

Scattered shrub - native

Scattered shrub - non-native

Target note

*B1-B8: Buildings inspected for bats

N

0 5 10 20 30 40

Metres

British National Grid
Projection: Transverse Mercator
False Easting: 400000.000000
False Northing: 100000.000000
Central Meridian: -2.000000
Scale Factor: 0.999601
Latitude Of Origin: 49.000000

ISO A3

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Project Name
Central Somers Town Ecology

Discipline
Ecology

Title
**Habitat and
Bat Building
Assessment Map**

Scale
1:1,000

Drawing No.
Figure 1

Drawn By
CC

Originator
HH

Date
16/04/2015

PAA Ref.
G:\DSDH01_Somerstown\Maps\Figures

Revision
1.0

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TARGET NOTES

TN1: Shady area of open habitat
TN2: Coopers Lane Community Garden
TN3: Exercise area
TN4: Plot 10 garden
TN5: Dog fouling area

APPENDICES

APPENDIX 1

Desk Study Information

THIS SUMMARY PAGE MAY BE PUBLISHED
THE FULL REPORT AND MAPS MAY NOT BE PUBLISHED IN THE PUBLIC DOMAIN

Ecological Data Search 1282 - Summary Page

A 1 km ecological data search was carried out for site Central Somers Town on behalf of Penny Anderson Associates on 25 Feb 2015.

The following datasets were consulted for this report:

- Statutory sites ✓
- Non-statutory sites ✓
- Protected species ✓
- London invasive species ✓
- Habitats ✓
- Open space ✓

Results

Statutory sites	No statutory sites and 1 LNR
Non-statutory sites	12 SINCs
Areas of Deficiency	Present within search area
Geological sites	None present within search area
Species	
Protected and notable species	438 species records
London invasive species	217 species records
Habitats	
BAP habitat suitability	Present within search area
Open space	Present within search area

The report is compiled using data held by GiGL at the time of the request. Note that GiGL does not currently hold comprehensive species data for all areas. Even where data is held, a lack of records for a species in a defined geographical area does not necessarily mean that the species does not occur there.

Permission

This data search report is valid until 25/02/2016 for the site named above.

Prepared by Maria Longley
25 Feb 2015

Central Somers Town info from Greenspace Information for Greater London

	Easting	Northing	Accuracy (m)	Grid Ref	Distance from	Direction from	Name	Species	Type	Date	Feature	Abundance	Record	Source
Invasive Species	529800	183600	100	TQ29800 83600			Japanese Knotweed	<i>Fallopia japonica</i>	Invasive Species	26/07/1989-31/12/2012	Record	13 Occurrences	GiGL	1
	530001	183443	1	TQ 30001 83443			Indian Balsam	<i>Impatiens glandulifera</i>	Invasive Species	01/01/1990-31/12/1999	Record	2 Occurrences	GiGL	2
	530817	182902	1	TQ 30817 82902			Cotoneaster	<i>Cotoneaster</i>	Invasive Species	10/07/2003-10/08/2010	Record	6 Occurrences	GiGL	3
	529900	183400	100	TQ 29900 83400			Purple-flowered Cotoneaster	<i>Cotoneaster atropurpureus</i>	Invasive Species	01/01/1995-31/12/2008	Record	4 Occurrences	GiGL	4
	529500	183800	100	TQ 29500 83800			Wall Cotoneaster	<i>Cotoneaster horizontalis</i>	Invasive Species	01/01/2012-31/12/2012	Record	3 Occurrences	GiGL	5
	529900	183400	100	TQ 29900 83400			Willow-leaved Cotoneaster	<i>Cotoneaster salicifolius</i>	Invasive Species	01/01/1995-31/12/2008	Record	4 Occurrences	GiGL	6
	529500	183800	100	TQ 29500 83800			Pale Galingale	<i>Cyperus eragrostis</i>	Invasive Species	01/01/2001-31/12/2012	Record	3 Occurrences	GiGL	7
	530001	183443	1	TQ 30001 83443			Water Fern	<i>Azolla filiculoides</i>	Invasive Species	01/01/1995-31/12/1995	Record	1 Occurrence	GiGL	8
	530001	183443	1	TQ 30001 83444			Montbretia	<i>Crocasmia pottsii aurea</i>	Invasive Species	01/01/1990-31/12/2012	Record	3 Occurrences	GiGL	9
	529900	183400	100	TQ 29900 83400			Snowberry	<i>Symphoricarpos albus</i>	Invasive Species	01/01/1995-31/12/2012	Record	8 Occurrences	GiGL	10
	530440	183350	10	TQ 30440 83350			Crustacean	<i>Chelicorophium curvispinum</i>	Invasive Species	12/06/2008-28/08/2008	Record	2 Occurrences	GiGL	11
	530450	183350	10	TQ 30450 83450			Signal Crayfish	<i>Pacifastacus leniusculus</i>	Invasive Species	12/06/2008-28/08/2008	Record	1 Occurrence	GiGL	12
	529900	183400	100	TQ 29900 83400			Freshwater Crayfish	<i>Procambarus clarkii</i>	Invasive Species	05/07/2014	Record	1 Occurrence	GiGL	13
	529990	183508	1	TQ 29990 83508			Aesculapian Snake	<i>Elaphe longissima</i>	Invasive Species	24/05/2012	Record	1 Occurrence	GiGL	14
Protected Species					253	N	Stag Beetle	<i>Lucanus cervus</i>	Invertebrate	22/05/2008	Record	9 Occurrences	GiGL	15
					253	N	Soldier Beetle	<i>Crudosilis ruficollis</i>	Invertebrate	05/07/2014	Record	1 Occurrence	GiGL	16
					326	N	Flax Flea Beatle	<i>Longitalus parvulus</i>	Invertebrate	25/06/1905	Record	1 Occurrence	GiGL	17
					952	N	Wall	<i>Lasiommata megera</i>	Invertebrate	09/08/1989	Record	1 Occurrence	GiGL	18
					287	N	Cinnabar Moth	<i>Tyria jacobaeae</i>	Invertebrate	08/07/2006	Record	1 Occurrence	GiGL	19
					250	N	Hoverfly	<i>Pipizella virens</i>	Invertebrate	25/06/1905	Record	2 Occurrences	GiGL	20
					251	N	Hoverfly	<i>Volucella zona</i>	Invertebrate	05/07/2014	Record	1 Occurrence	GiGL	21
					252	N	Median Wasp	<i>Dolichovespula media</i>	Invertebrate	25/06/1905	Record	2 Occurrences	GiGL	22
					253	N	Crossocerus (Crossocerus) di	<i>Crossocerus (Crossocerus) di</i>	Invertebrate	25/06/1905	Record	2 Occurrences	GiGL	23
					253	N	Bee	<i>Hylaeus cornutus</i>	Invertebrate	25/06/1905	Record	2 Occurrences	GiGL	24
					253	N	Palmate Newt	<i>Lissotriton helveticus</i>	Amphibian	10/07/2008	Record	1 Occurrence	GiGL	25
					253	N	Common Toad	<i>Bufo bufo</i>	Amphibian	12/09/2008	Record	7 Occurrences	GiGL	26
					611	N	European Otter	<i>Lutra lutra</i>	Mammal	20/06/2013	Record	2 Occurrences	GiGL	27
					919	NW	West European Hedgehog	<i>Erinaceus europaeus: Linnae</i>	Mammal	00/00/2002	Record	1 Occurrence	GiGL	28
					253	N	Daubenton's Bat	<i>Myotis daubentonii</i>	Bat	26/07/2008	Record	3 Occurrences	GiGL	29
					691	N	Noctule Bat	<i>Nyctalus noctula</i>	Bat	00/05/2011	Record	1 Occurrence	GiGL	30
					208	N	Kuhl's Pipistrelle	<i>Pipistrellus kuhlii</i>	Bat	14/11/2006	Record	1 Occurrence	GiGL	31
					471	N	Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	Bat	04/09/2005	Record	3 Occurrences	GiGL	32
					253	N	Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Bat	26/07/2008	Record	15 Occurrences	GiGL	33
					253	N	Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Bat	17/07/2008	Record	11 Occurrences	GiGL	34
					351	N	Lapwing	<i>Vanellus vanellus</i>	Bird	03/03/2005	Record	50 Occurrences	GiGL	35
					253	N	Kingfisher	<i>Alcedo atthis</i>	Bird	28/06/1905	Record	5 Occurrences	GiGL	36
					253	N	Lesser Spotted Woodpecker	<i>Dryobates minor</i>	Bird	11/07/2008	Record	1 Occurrence	GiGL	37
					253	N	Yellow Wagtail	<i>Motacilla flava</i>	Bird	20/11/2008	Record	4 Occurrences	GiGL	38
					253	N	Black Redstart	<i>Phoenicurus ochruros</i>	Bird	18/08/2008	Record	2 Occurrences	GiGL	39
					371	N	Fieldfare	<i>Turdus pilaris</i>	Bird	21/01/2015	Record	3 Occurrences	GiGL	40
					253	N	Song Thrush	<i>Turdus philomelos</i>	Bird	28/06/1905	Breeding	1 Occurrence	GiGL	41
					371	N	Redwing	<i>Turdus iliacus</i>	Bird	21/01/2015	Record	200 Occurrences	GiGL	42
					253	N	Firecrest	<i>Regulus ignicapilla</i>	Bird	00/00/2006	Record	2 Occurrences	GiGL	43
					253	N	Starling	<i>Sturnus vulgaris</i>	Bird	00/00/2006	Breeding	1 Occurrences	GiGL	44
					253	N	House Sparrow	<i>Passer domesticus</i>	Bird	05/07/2014	Breeding	6 Occurrences	GiGL	45
					253	N	Brambling	<i>Fringilla montifringilla</i>	Bird	00/00/2006	Record	1 Occurrence	GiGL	46
					253	N	Reed Bunting	<i>Emberiza schoeniclus</i>	Bird	00/00/2006	Record	7 Occurrences	GiGL	47
Statutory Sites	529900	183400	100	TQ 29900 83400			Camley Street Nature Park		LNR		Site	0.82 hectares	GiGL	47



APPENDIX 2

**Summary Legislation relating to Bats, Black
Redstarts, Breeding Birds and Explanatory Note
from DEFRA**

SUMMARY OF THE LEGISLATION RELATING TO BATS

All wild species of bat are protected under the Wildlife and Countryside Act (WCA) 1981, which has also been amended by later legislation, including the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2010, and this legislation is applicable to England and Wales. Bats are listed on Schedule 5 of the WCA and are therefore subject to some the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection (S9:4b).
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat (S9:4c).

There are additional offences in relation to buying and selling (S9:5) any live or dead animal of this species or anything derived from them.

Bat species are also listed under Annexes IIa and IVa of the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2010.

The Conservation of Habitats and Species Regulations 2010¹ state that a person commits an offence if they:

- (a) deliberately capture, injure or kill any wild animal of a European protected species,
- (b) deliberately disturb wild animals of any such species, in such a way as –
 - (i) to impair their ability to survive, to breed or reproduce, or to rear their young, or
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or
 - (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- (c) deliberately take or destroy the eggs of such an animal, or
- (d) damage or destroy a breeding site or resting place of such an animal.

Under these Regulations it is an offence to damage or destroy a breeding site or resting place whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead bat or part of such an animal.

In addition, seven native British bat species, including the soprano pipistrelle (*Pipistrellus pygmaeus*) and the brown long-eared bat (*Plecotus auritus*), that are frequently found in buildings, are listed as a 'Priority Species' under the 2011 biodiversity strategy for England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, under the 2012 UK Post-2010 UK Biodiversity Framework. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CRoW Act 2000, and Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006. Section 11 of the National Planning Policy Framework (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. The NPPF also includes the requirement to contribute to the Government's commitment to halt the overall decline in biodiversity and to promote the reservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets. Reference is made to Circular 06/2005 *Biodiversity and*

¹ These regulations have been slightly amended by The Conservation of Habitats and Species Regulations 2012

SUMMARY OF LEGISLATION RELATING TO BLACK REDSTART

All wild species of breeding birds and their nests are protected under Part 1 of the Wildlife and Countryside Act (WCA) 1981, as amended by later legislation including the Countryside and Rights of Way (CROW) Act 2000.

Black redstarts (*Phoenicurus ochruros*) are additionally protected as they are listed on Schedule 1 of the WCA. Therefore, black redstarts, their nests, eggs and young are fully protected at all times throughout England and Wales.

Part 1 (Section 1:1) of the WCA states that:

'If any person intentionally,

- (a) kills, injures or takes any wild bird;
- (b) takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- (c) takes or destroys an egg of any wild bird,

he shall be guilty of an offence.'

Part 1 (Section 1:5) of the WCA (amended by the CROW Act 2000) states that:

'If any person intentionally or recklessly,

- (a) disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- (b) disturbs dependent young of such a bird,

he shall be guilty of an offence and liable to a special penalty.'

In addition, the black redstart is identified as a bird species of moderate conservation concern ('Amber' listed) due to its declining breeding population and its rarity as a breeding species within Britain.

Please note: the above text provides a brief summary of the legislation in relation to black redstart for England and Wales and the original Act and any amendments should be referred to for the precise wording.

SUMMARY OF THE LEGISLATION RELATING TO BREEDING BIRDS

All wild species of breeding birds and their nests are protected under Part 1 of the Wildlife and Countryside Act (WCA) 1981, as amended by later legislation including the Countryside and Rights of Way (CROW) Act 2000. This legislation applies in England and Wales.

Part 1 (Section 1:1) of the WCA states that:

'If any person intentionally,

- (a) kills, injures or takes any wild bird;
- (b) takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- (c) takes or destroys an egg of any wild bird,

he shall be guilty of an offence.'

Part 1 (Section 1:5) of the WCA (amended by the CROW Act 2000) refers to specific birds listed on Schedule 1 of the WCA, and states that:

'If any person intentionally or recklessly,

- (a) disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- (b) disturbs dependent young of such a bird,

he shall be guilty of an offence and liable to a special penalty.'

Schedule 1 includes birds such as barn owl (*Tyto alba*), black redstart (*Phoenicurus ochruros*), wood lark (*Lullula arborea*) and Cetti's warbler (*Cettia cetti*). Please refer to the WCA for a complete list of Schedule 1 species.

Some provisions are made to allow the killing and taking of certain species under certain circumstances, as follows:

- Birds listed on Schedule 2 (Part 1) of the Act may be taken or killed outside of the 'close season' for each individual species (the 'close season' is defined by the Act). This includes various wild duck and geese species.
- Birds listed on Schedule 2 (Part 2) of the Act may be killed or taken by authorised persons at all times. This includes species such as carrion crow (*Corvus corone*), black-billed magpie (*Pica pica*), feral pigeon (*Columba livia*) and greater Canada goose (*Branta canadensis*). An 'authorised person' is defined as a person who has written authorisation to undertake the act from the relevant statutory authority. The written authority is in the form of a licence, either a general licence which covers a number of the more typical 'pest' species, or an individual licence for other individual species. In England these licences are issued by Natural England and in Wales by the Welsh Assembly Government.

Please note: the above text provides a brief summary of the legislation in relation to breeding birds in England and Wales and the original Act and any amendments should be referred to for the precise wording.

EXPLANATORY NOTE

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

Purpose and use of the England Biodiversity List

The England Biodiversity List has been developed to meet the requirements of Section 41 of the Natural Environment and Rural Communities Act (2006). This legislation requires the Secretary of State to publish a list of species of flora and fauna and habitats considered to be of principal importance for the purpose of conserving biodiversity.

The S41 list will be used to guide decision-makers such as public bodies, including local and regional authorities, 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:

- Regional Planning Bodies and Local Planning Authorities will use it to identify the species and habitats that should be afforded priority when applying the requirements of Planning Policy Statement 9 (PPS9) to maintain, restore and enhance species and habitats.
- Local Planning Authorities will use it to identify the species and habitats that require specific consideration in dealing with planning and development control, recognising that under PPS the aim of planning decisions should be to avoid harm to all biodiversity.
- All Public Bodies will use it to identify species or habitats that should be given priority when implementing the NERC Section 40 duty.

An analysis of **seven key sectors** which will, in particular, want to consider how relevant the list is to them is at Annex A.

Under **Section 41 of the NERC Act**, the Secretary of State must, as respects England, publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. Before publishing any such list, the Secretary of State must consult Natural England as to the living organisms or types of habitat to be included on the list. The Secretary of State must take such steps as appear reasonably practicable to further the conservation of the habitats and species on the list and promote the taking by others of such steps. Further, the Secretary of State must keep the list under review, and make appropriate revisions, publishing any list so revised.

The S41 list replaces the list published under Section 74 of the Countryside and Rights of Way (CROW) Act 2000, under which Defra published a list in 2002 which was identical with the UK BAP list at the time.

Habitats of Principal Importance

Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that have been identified as requiring action in the UK Biodiversity Action Plan (UK BAP). They range from habitats such as upland hay meadows to lowland mixed deciduous woodland and from freshwater habitats such as ponds to marine habitats such as subtidal sands and gravels.

Species of Principal Importance

There are 943 species of principal importance included on the S41 list. These are the species found in England which have been identified as requiring action under the UK BAP. In addition, the Hen Harrier has also been included on the List because without continued conservation action it is unlikely that the Hen Harrier population will increase from its current very low levels in England.

Table 1. Species and Habitats of Principal Importance in England

Category	Group	Number
Terrestrial/Freshwater/Coastal Species	Amphibians/Reptiles	10
	Birds	49
	Fish	14
	Mammals	17
	Invertebrates	379
	Lower plants and fungi	250
	Vascular plants	152
	Total	865
Terrestrial/Freshwater/Coastal Habitats	Arable and horticulture	2
	Boundary	1
	Coastal	6
	Freshwater	6
	Grassland	6
	Heathland	3
	Inland rock	4
	Wetland	6
	Woodland	6
	Total	40
Marine Species	Marine mammals	17
	Marine reptiles	2
	Marine fish	34
	Marine invertebrates	19
	Marine algae	6
	Total	78
Marine Habitats	Marine habitats	16
	Total	16

The attached Excel Spreadsheet has the full list of habitats and species. Habitats are grouped by broad habitat (for example grassland, heathland, woodland) whilst species are ordered by taxonomic groupings (for example amphibian, mammal, butterfly) with the scientific name first and common name second. The List can be downloaded from: <http://www.ukbap-reporting.org.uk>.

The **National Biodiversity Network (NBN)** <http://www.searchnbn.net/> provides distribution maps and UK wildlife data that can be downloaded by using a variety of interactive tools. The Geosearching facility can be used to zoom into any area of interest to find species recorded.

Relationship with the biodiversity duty under Section 40 of the NERC Act

There is a general biodiversity duty in the NERC Act (Section 40) which requires every public body in the exercising of its functions to 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'.

There is no *direct* relationship between the Section 41 duty on the Secretary of State to publish the list and promote the taking of steps to conserve the habitats and species on it, and the Section 40 duty on public bodies to have regard to the purpose of conserving biodiversity. Importantly:

(a) Biodiversity, as covered by the Section 40 duty includes all biodiversity and not just the habitats and species of principal importance. However, there is an expectation that public bodies would refer to the S41 list when complying with the section 40 duty.

(b) The duty on the Secretary of State to promote the taking of steps by others is not restricted to public bodies.

Defra guidance for local authorities and public bodies on implementing the new biodiversity duty in the NERC Act draws attention to the S41 list, emphasising that local authorities and public bodies have a role to play in ensuring the protection of these species and habitats. Copies of the guidance can be downloaded from: www.defra.gov.uk/wildlife-countryside/biodiversity/index.htm

Relationship with the UK Biodiversity List of Species and Habitats

In 2007, the UK Biodiversity Partnership published a new list of priority UK species and habitats. This contains 1149 species and 67 habitats covering terrestrial, freshwater and marine biodiversity.

The UK BAP list of priority species and habitats is an important reference source and will be the focus for conservation action across the UK over the next decade. It has been used to draw up the species and habitats of principal importance in England under S41 of the NERC Act.

The revised UK BAP list of priority species and habitats can be downloaded from the UK Biodiversity Website: <http://www.ukbap.org.uk/NewPriorityList.aspx>

ANNEX A

Sector Analysis

Seven sectors have been selected where public bodies and other stakeholders can make a significant contribution to biodiversity conservation. Habitats and species relevant to each sector have been identified to help non-conservation professionals consider where the S41 list might apply to them. Conservation of the selected habitats should benefit a wide range of species. Some species have also been selected for the relevant sector because they tend to be widespread and conservation action for these particular species will also benefit other species. The intention has been to keep the number of entries to a minimum to help encourage the use of the list in each sector. Further consideration should also be given to S41 species with a restricted range that occur locally.

The sectors are set out below. Some stakeholders will occur in more than one sector.

1. [Land use planning](#)

This sector is aimed at Local Planning Authorities and Regional Development Agencies with particular regard to their development control and planning casework, and contains the widespread habitats and species of particular significance across the sector.

2. [Regional and local government](#)

This sector includes the work undertaken by local and regional government in all its forms, such as forward/spatial planning at regional, sub-regional and local level. It includes coastal management planning, transport and minerals planning and strategic planning for economic development and climate change. It also covers the services provided by local and regional government such as sports and recreation provision and education, and the management of the associated estate, including open spaces, landscaping and built infrastructure itself. It also includes all the estate managed by social housing providers.

3. [Agriculture](#)

This sector is aimed at agricultural land managers and those that influence the management of farmland such as food producers and retailers, National Trust, National Parks, AONBs, Local and Regional Government and Regional Development Agencies.

4. [Freshwater](#)

This sector is aimed at managers of the freshwater environment including the Environment Agency, British Waterways, the Broads Authority, water companies, Internal Drainage Boards, fisheries and navigation managers.

5. [Forestry](#)

This sector is aimed at woodland managers and foresters such as the Forestry Commission, Local and Regional Government, private and commercial forestry.

6. Upland

This sector is aimed at upland land managers such as National Parks, the Forestry Commission, grouse moor managers, upland graziers, the water companies and others.

7. Marine

This sector is aimed at the Sea Fishery Committees, Chamber of Shipping, Crown Estates and related industry through associations such as Shellfish Association of Great Britain, British Wind Energy Association, British Marine Aggregate Producers Association, SeaFish, National Federation of Sea Anglers, oil and gas producers and others.

1. Land use planning sector

This sector is aimed at Local Planning Authorities and Regional Development Agencies with particular regard to their development control and planning casework, and contains the widespread habitats and species of particular significance across the sector. Further consideration should also be given to the other S41 species and habitats which are of significance locally to each LPA but not highlighted here. LPAs should also take into account protected species listed under the Wildlife and Countryside Act 1981 and the Habitat Regulations 1994.

Habitats	Species	
Eutrophic standing waters	<i>Caprimulgus europaeus</i>	Nightjar
Mesotrophic lakes	<i>Lullula arborea</i>	Wood Lark
Oligotrophic and dystrophic lakes	<i>Arvicola terrestris</i>	Water Vole
Ponds	<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle
Rivers	<i>Plecotus auritus</i>	Brown Long-eared Bat
Hedgerows	<i>Rhinolophus ferrumequinum</i>	Greater Horseshoe Bat
Traditional orchards	<i>Rhinolophus hipposideros</i>	Lesser Horseshoe Bat
Lowland mixed deciduous woodland	<i>Anguis fragilis</i>	Slow-worm
Lowland beech and yew woodland	<i>Lacerta vivipara</i>	Common Lizard
Upland mixed ashwoods	<i>Triturus cristatus</i>	Great Crested Newt
Upland oakwood	<i>Vipera berus</i>	Adder
Wet woodland	<i>Cupido minimus</i>	Small Blue
Wood-pasture and parkland	<i>Erynnis tages</i>	Dingy Skipper
Lowland dry acid grassland	<i>Hipparchia semele</i>	Grayling
Lowland calcareous grassland	<i>Lucanus cervus</i>	Stag Beetle
Upland calcareous grassland	<i>Pyrgus malvae</i>	Grizzled Skipper
Lowland meadows		
Upland hay meadows		
Purple moor grass and rush pastures		
Coastal and floodplain grazing marsh		
Blanket bog		
Lowland raised bog		
Lowland fens		
Upland flushes, fens and swamps		
Reedbeds		
Lowland heathland		
Upland heathland		
Calaminarian grasslands		
Inland rock outcrop and scree habitats		

Limestone pavements
Open mosaic habitats on previously developed land
Maritime cliff and slopes
Coastal vegetated shingle
Coastal sand dunes
Coastal saltmarsh
Intertidal mudflats
Saline lagoons

2. Regional and local government

This sector includes the work undertaken by local and regional government in all its forms, such as forward/spatial planning at regional, sub-regional and local level. It includes coastal management planning, transport and minerals planning and strategic planning for economic development and climate change. It also covers the services provided by local and regional government such as sports and recreation provision and education, and the management of the associated estate, including open spaces, landscaping and built infrastructure itself. It also includes all the estate managed by social housing providers.

Habitats	Species	
Eutrophic standing waters	<i>Passer domesticus</i>	House Sparrow
Mesotrophic lakes	<i>Prunella modularis</i>	Dunnock
Oligotrophic and dystrophic lakes	<i>Sturnus vulgaris</i>	Starling
Ponds	<i>Turdus philomelos</i>	Song Thrush
Rivers	<i>Arvicola terrestris</i>	Water Vole
Hedgerows	<i>Erinaceus europaeus</i>	Hedgehog
Traditional orchards	<i>Nyctalus noctula</i>	Noctule
Lowland mixed deciduous woodland	<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle
Lowland beech and yew woodland	<i>Phoca vitulina</i>	Common Seal
Upland mixed ashwoods	<i>Plecotus auritus</i>	Brown Long-eared Bat
Upland oakwood	<i>Rhinolophus ferrumequinum</i>	Greater Horseshoe Bat
Wet woodland	<i>Rhinolophus hipposideros</i>	Lesser Horseshoe Bat
Wood-pasture and parkland	<i>Anguis fragilis</i>	Slow-worm
Lowland calcareous grassland	<i>Bufo bufo</i>	Common Toad
Lowland dry acid grassland	<i>Coronella austriaca</i>	Smooth Snake
Lowland meadows	<i>Lacerta vivipara</i>	Common Lizard
Purple moor grass and rush pastures	<i>Triturus cristatus</i>	Great Crested Newt
Upland calcareous grassland	<i>Vipera berus</i>	Adder
Upland hay meadows	<i>Arctia caja</i>	Garden Tiger
Blanket bog	<i>Coenonympha pamphilus</i>	Small Heath
Coastal and floodplain grazing	<i>Colletes halophilus</i>	Sea-aster Colletes Bee

marsh		
Lowland fens	<i>Cupido minimus</i>	Small Blue
Lowland raised bog	<i>Erynnis tages</i>	Dingy Skipper
Reedbeds	<i>Eucera longicornis</i>	Long-horned Bee
Upland flushes, fens and swamps	<i>Hipparchia semele</i>	Grayling
Lowland heathland	<i>Lasiommata megera</i>	Wall
Mountain heaths and willow scrub	<i>Lucanus cervus</i>	Stag Beetle
Upland heathland	<i>Ostrea edulis</i>	Native Oyster
Calaminarian grasslands	<i>Plebejus argus</i>	Silver-studded Blue
Inland rock outcrop and scree habitats	<i>Pyrgus malvae</i>	Grizzled Skipper
Limestone pavements	<i>Shargacucullia lychnitis</i>	Striped Lychnis
Open mosaic habitats on previously developed land	<i>Spilosoma luteum</i>	Buff Ermine
Coastal sand dunes	<i>Spilosoma lubricipeda</i>	White Ermine
Coastal saltmarsh	<i>Tyria jacobaeae</i>	Cinnabar
Coastal vegetated shingle	<i>Tyta luctuosa</i>	Four-Spotted Moth
Estuarine rocky habitats	<i>Salsa kali subsp. kali</i>	Prickly Saltwort
Intertidal boulder communities		
Intertidal chalk		
Intertidal mudflats		
Maritime cliff and slopes		
<i>Sabellaria alveolata</i> reefs		
Saline lagoons		
Seagrass beds		
Sheltered muddy gravels		
Tide-swept channels		

3. Agriculture

This sector is aimed at agricultural land managers and those that influence the management of farmland such as food producers and retailers, National Trust, National Parks, AONBs, Local and Regional Government and Regional Development Agencies.

Habitat	Species	
Ponds	<i>Alauda arvensis</i>	Sky Lark
Arable field margins	<i>Branta bernicla</i>	Dark-bellied Brent Goose
Hedgerows	<i>Carduelis cannabina</i>	Linnet
Traditional orchards	<i>Cuculus canorus canorus</i>	Common Cuckoo
Wood-pasture and parkland	<i>Emberiza cirrus</i>	Cirl Bunting
Lowland calcareous grassland	<i>Emberiza citrinella</i>	Yellowhammer
Lowland dry acid grassland	<i>Emberiza schoeniclus</i>	Reed Bunting
Purple moor grass and rush	<i>Miliaria calandra</i>	Corn Bunting

pastures		
Lowland meadows	<i>Motacilla flava</i>	Yellow Wagtail
Upland calcareous grassland	<i>Numenius arquata</i>	Curlew
Upland hay meadows	<i>Passer montanus</i>	Tree Sparrow
Coastal and floodplain grazing marsh	<i>Perdix perdix</i>	Grey Partridge
Lowland fens	<i>Streptopelia turtur</i>	Turtle Dove
Lowland heathland	<i>Sturnus vulgaris</i>	Starling
Upland heathland	<i>Turdus philomelos</i>	Song Thrush
Maritime cliff and slope	<i>Vanellus vanellus</i>	Lapwing
	<i>Lepus europaeus</i>	Brown Hare
	<i>Micromys minutus</i>	Harvest Mouse
	<i>Muscardinus avellanarius</i>	Dormouse
	<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle
	<i>Rhinolophus ferrumequinum</i>	Greater Horseshoe Bat
	<i>Mustela putorius</i>	Polecat
	<i>Bufo bufo</i>	Common Toad
	<i>Natrix natrix</i>	Grass Snake
	<i>Triturus cristatus</i>	Great Crested Newt
	<i>Aricia artaxerxes</i>	Northern Brown Argus
	<i>Asilus crabroniformis</i>	Hornet Robberfly
	<i>Coenonympha pamphilus</i>	Small Heath
	<i>Cupido minimus</i>	Small Blue
	<i>Erynnis tages</i>	Dingy Skipper
	<i>Eurodryas aurinia</i>	Marsh Fritillary
	<i>Gnorimus nobilis</i>	Noble Chafer
	<i>Hamearis lucina</i>	Duke of Burgundy
	<i>Hemaris tityus</i>	Narrow-bordered Bee Hawk-moth
	<i>Hipparchia semele</i>	Grayling
	<i>Plebejus argus</i>	Silver-studded Blue
	<i>Pyrgus malvae</i>	Grizzled Skipper
	<i>Satyrus w-album</i>	White Letter Hairstreak
	<i>Thecla betulae</i>	Brown hairstreak
	Bumblebee species as below:	
	<i>Bombus humilis</i>	Brown-Banded Carder Bee
	<i>Bombus rudarius</i>	Red-shanked Carder-bee
	<i>Bombus rudatus</i>	Large Garden Bumblebee
	<i>Bombus sylvarum</i>	Shrill Carder Bee
	<i>Astragalus danicus</i>	Purple Milk-vetch
	<i>Clinopodium acinos</i>	Basil Thyme
	<i>Chamaemelum nobile</i>	Chamomile
	<i>Euphrasia anglica</i>	Glandular Eyebright
	<i>Dactylorhiza viridis</i>	Frog Orchid
	<i>Juniperus communis</i>	Juniper
	<i>Ophrys insectifera</i>	Fly Orchid

<i>Neotinea ustulata</i>	Burnt Orchid
<i>Platanthera bifolia</i>	Lesser Butterfly-orchid
<i>Pulsatilla vulgaris</i>	Pasqueflower
Arable plants as below:	
<i>Adonis annua</i>	Pheasants-eye
<i>Ajuga chamaepitys</i>	Ground-pine
<i>Centaurea cyanus</i>	Cornflower
<i>Ranunculus arvensis</i>	Corn Buttercup
<i>Scandix pecten-veneris</i>	Shepherd's Needle
<i>Scleranthus annuus</i>	Annual Knawel
<i>Silene gallica</i>	Small-flowered Catchfly
<i>Torilis arvensis</i>	Spreading Hedge Parsley
<i>Valerianella rimosa</i>	Broad-Fruited Corn Salad
<i>Galeopsis angustifolia</i>	Red Hemp-nettle

4. Freshwater

This sector is aimed at managers of the freshwater environment including the Environment Agency, British Waterways, the Broads Authority, Internal Drainage Boards, water companies, fisheries and navigation managers.

Habitats	Species	
Aquifer-fed naturally fluctuating water bodies	<i>Branta bernicla</i>	Dark-bellied Brent Goose
Eutrophic standing waters	<i>Cygnus columbianus bewickii</i>	Bewick's Swan
Mesotrophic lakes	<i>Emberiza schoeniclus schoeniclus</i>	Reed Bunting
Oligotrophic and dystrophic lakes	<i>Motacilla flava</i>	Yellow Wagtail
Ponds	<i>Numenius arquata</i>	Curlew
Rivers	<i>Vanellus vanellus</i>	Lapwing
Reedbeds	<i>Arvicola terrestris</i>	Water Vole
Lowland fens	<i>Lutra lutra</i>	Otter
Coastal and floodplain grazing marsh	<i>Bufo bufo</i>	Common Toad
Wet woodland	<i>Natrix natrix</i>	Grass Snake
	<i>Triturus cristatus</i>	Great Crested Newt
	<i>Alosa alosa/fallax</i>	Allis/Twaite Shads
	<i>Anguilla anguilla</i>	European Eel
	<i>Lampetra fluviatilis</i>	River Lamprey
	<i>Osmerus eperlanus</i>	Smelt
	<i>Petromyzon marinus</i>	Sea Lamprey
	<i>Salmo salar</i>	Atlantic salmon
	<i>Salmo trutta</i>	Brown/Sea trout
	<i>Leersia oryzoides</i>	Cut-grass
	<i>Luronium natans</i>	Floating Water Plantain
	<i>Oenanthe fistulosa</i>	Tubular Water-dropwort
	<i>Potamogeton compressus</i>	Grass-wrack Pondweed

<i>Pilularia globulifera</i>	Pillwort
<i>Sium latifolium</i>	Greater Water Parsnip
<i>Aeshna isosceles</i>	Norfolk Hawker
<i>Austropotamobius pallipes</i>	White-clawed Crayfish
<i>Coenagrion mercuriale</i>	Southern Damselfly
<i>Margaritifera margaritifera</i>	Freshwater Pearl Mussel
<i>Pisidium tenuilineatum</i>	Fine-lined Pea Mussel
<i>Pseudanodonta complanata</i>	Depressed River Mussel
<i>Valvata macrostoma</i>	Large-mouthed Valve Snail
<i>Vertigo moulinsiana</i>	Desmoulin's Whorl Snail

5. Forestry

This sector is aimed at woodland managers and foresters such as the Forestry Commission, Local and Regional Government, private and commercial forestry.

Habitat	Species	
Hedgerows	<i>Anthus trivialis</i>	Tree Pipit
Wood-pasture and parkland	<i>Caprimulgus europaeus</i>	Nightjar
Lowland mixed deciduous woodland	<i>Carduelis cabaret</i>	Lesser Redpoll
Lowland beech and yew woodland	<i>Cuculus canorus canorus</i>	Common Cuckoo
Upland mixed ashwoods	<i>Dendrocopos minor comminutus</i>	Lesser Spotted Woodpecker
Upland oakwood	<i>Lullula arborea</i>	Wood Lark
Wet woodland	<i>Muscicapa striata</i>	Spotted Flycatcher
Lowland heathland	<i>Parus palustris</i>	Marsh Tit
Upland heathland	<i>Poecile montanus kleinschmidtii</i>	Willow Tit
Coastal sand dunes	<i>Phylloscopus sibilatrix</i>	Wood Warbler
	<i>Tetrao tetrix britannicus</i>	Black Grouse
	<i>Barbastella barbastellus</i>	Barbastelle Bat
	<i>Martes martes</i>	Pine Martin
	<i>Muscardinus avellanarius</i>	Dormouse
	<i>Myotis bechsteinii</i>	Bechstein's Bat
	<i>Nyctalus noctula</i>	Noctule
	<i>Plecotus auritus</i>	Brown Long-eared Bat
	<i>Sciurus vulgaris</i>	Red Squirrel
	<i>Vipera berus</i>	Adder
	<i>Argynnis adippe</i>	High Brown Fritillary
	<i>Boloria euphrosyne</i>	Pearl-bordered Fritillary
	<i>Boloria selene</i>	Small Pearl-bordered Fritillary
	<i>Erynnis tages</i>	Dingy Skipper
	<i>Hamearis lucina</i>	Duke of Burgundy

<i>Limenitis camilla</i>	White Admiral
<i>Leptidea sinapis</i>	Wood White
<i>Lucanus cervus</i>	Stag Beetle
<i>Satyrus w-album</i>	White-letter Hairstreak
<i>Campanula patula</i>	Spreading Bellflower
<i>Cephalanthera damasonium</i>	White Helleborine
<i>Fallopia dumetorum</i>	Copse-bindweed
Tooth fungi as below:	
<i>Hericium coralloides</i>	Coral Tooth
<i>Hericium erinaceus</i>	Bearded Tooth
<i>Hydnellum concrescens</i>	A Tooth Fungus
<i>Hydnellum spongiosipes</i>	Velvet Tooth
<i>Phellodon confluens</i>	Fused Tooth
<i>Phellodon melaleucus</i>	Grey Tooth
<i>Phellodon niger</i>	Black Tooth

6. Uplands

This sector is aimed at upland land managers such as National Parks, the Forestry Commission, grouse moor managers, upland graziers, the water companies and others.

Habitat	Species	
Mesotrophic lakes	<i>Alauda arvensis arvensis</i>	Sky Lark
Oligotrophic and dystrophic lakes	<i>Carduelis flavirostris</i>	Twite
Ponds	<i>Circus cyaneus</i>	Hen Harrier
Upland mixed ashwoods	<i>Lagopus lagopus scoticus</i>	Red Grouse
Upland oakwood	<i>Numenius arquata</i>	Curlew
Wet woodland	<i>Tetrao tetrix britannicus</i>	Black Grouse
Purple moor grass and rush pastures	<i>Turdus torquatus</i>	Ring Ouzel
Upland hay meadows	<i>Vanellus vanellus</i>	Lapwing
Upland calcareous grassland	<i>Lepus timidus</i>	Mountain Hare
Blanket bog	<i>Lacerta vivipara</i>	Common Lizard
Upland flushes, fens and swamps	<i>Vipera berus</i>	Adder
Upland heathland	<i>Argynnis adippe</i>	High Brown Fritillary
Mountain heaths and willow scrub	<i>Aricia artaxerxes</i>	Northern Brown Argus
Calaminarian grasslands	<i>Bombus muscorum</i>	Moss Carder Bee
Inland rock outcrop and scree habitats	<i>Coenonympha tullia</i>	Large Heath
Limestone pavements	<i>Erebia epiphron</i>	Mountain Ringlet
	<i>Mellicta athalia</i>	Heath Fritillary
	<i>Euphrasia rostkoviana subsp. montana</i>	An Eyebright
	<i>Gentianella campestris</i>	Field Gentian

<i>Juniperus communis</i>	Juniper
<i>Saxifraga hirculus</i>	Yellow Marsh Saxifrage

7. Marine

This sector is aimed at the Sea Fishery Committees, Chamber of Shipping, Crown Estates and related industry through associations such as Shellfish Association of Great Britain, British Wind Energy Association, British Marine Aggregate Producers Association, SeaFish, National Federation of Sea Anglers, oil and gas producers and others.

Habitats	Species	
Blue mussel beds	<i>Larus argentatus argentatus</i>	Herring Gull
Estuarine rocky habitats	<i>Melanitta nigra</i>	Common Scoter
Fragile sponge and anthozoan communities on subtidal rocky habitats	<i>Puffinus mauretanicus</i>	Balearic Shearwater
Horse mussel beds	<i>Sterna dougallii dougallii</i>	Roseate Tern
Maerl beds	<i>Delphinus delphis</i>	Common Dolphin
Mud habitats in deep water	<i>Phocoena phocoena</i>	Harbour Porpoise
Peat and clay exposures	<i>Phoca vitulina</i>	Common Seal
<i>Sabellaria alveolata</i> reefs	<i>Ammodytes marinus</i>	Lesser Sandeel
<i>Sabellaria spinulosa</i> reefs	<i>Cetorhinus maximus</i>	Basking Shark
Seagrass beds	<i>Dipturus batis</i>	Common skate
Sheltered muddy gravels	<i>Galeorhinus galeus</i>	Tope Shark
Subtidal chalk	<i>Hippocampus guttulatus</i>	Long-snouted Seahorse
Subtidal sands and gravels	<i>Hippocampus hippocampus</i>	Short-snouted Seahorse
Tide-swept channels	<i>Lamna nasus</i>	Porbeagle Shark
	<i>Molva molva</i>	Ling
	<i>Prionace glauca</i>	Blue Shark
	<i>Atrina fragilis</i>	Fan Mussel
	<i>Eunicella verrucosa</i>	Pink Sea-fan
	<i>Ostrea edulis</i>	Native oyster
	<i>Palinurus elephas</i>	Crayfish, Crawfish or Spiny Lobster
	<i>Phymatolithon calcareum</i>	Common Maërl

Geological Conservation - Statutory Obligations and Their Impact within the Planning System in respect of statutory obligations for biodiversity and geodiversity conservation.

Local authorities in England are required to ensure that where significant harm resulting from development cannot be avoided (through locating on alternative sites with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, planning permission is refused. The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

Please note: the above text provides a brief summary of the legislation in relation to bats in England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.

APPENDIX 3

Habitat Botanical Species List

Appendix 3 Habitat Botanical Species List

Common Name	Scientific Name	Abundance*			
		Amenity Grass	Scattered Shrub	Urban Park with Trees	Hedge with Trees
Ash	<i>Fraxinus excelsior</i>			o	o
Barberry	<i>Berberis</i> sp.		o		
Bridewort sp.	<i>Spiraea</i> sp.		r		
Common chickweed	<i>Stellaria media</i>	r		r	
Daffodil cultivar	<i>Narcissus</i> sp.			r	
Daisy	<i>Bellis perennis</i>	r		r	
Dock species	<i>Rumex</i> sp.	r		r	
Elder	<i>Sambucus nigra</i>		r		r
Firethorn	<i>Pyracantha</i> sp.		r		
Goat willow	<i>Salix caprea</i>			f	
Hawthorn	<i>Crataegus monogyna</i>				o
Hebe	<i>Hebe</i> sp.		o		
Holly	<i>Ilex aquifolium</i>			r	
Honeysuckle species	<i>Lonicera</i> sp.		r		
Italian alder	<i>Alnus cordata</i>			o	
Ivy	<i>Hedera helix</i>		o		
Jasmine	<i>Jasminum</i> sp.		r		
Lavender	<i>Lavendula</i> sp.		r		
Locust tree	<i>Robinia pseudoacacia</i>			f	
London plane	<i>Platanus x hispanica</i>			f-a	
Mahonia	<i>Mahonia</i> sp.		r		
Norway maple	<i>Acer platanioides</i>			f-a	
Perennial rye-grass	<i>Lolium perenne</i>	d		d	
Rowan	<i>Sorbus aucuparia</i>			r	
Silver birch	<i>Betula pendula</i>			o	
Spanish bluebell	<i>Hyacinthoides x hispanica</i>			r-o	
Swedish whitebeam	<i>Sorbus intermedia</i>			r	
Sweet chestnut	<i>Castanea sativa</i>			r	
Sycamore	<i>Acer pseudoplatanus</i>			r	r
Sycamore (seedling)	<i>Acer pseudoplatanus (seedling)</i>	r		r	

Key d=dominant, a=abundant, f=frequent, o=occasional, r=rare

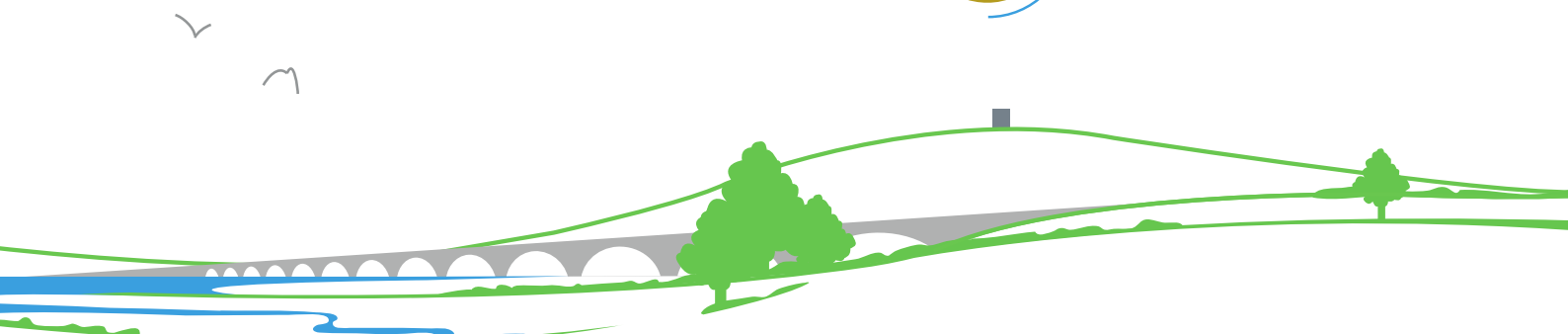
APPENDIX 4

Target Notes

Appendix 4 Target Notes

Note	Description
TN1	Shady area of open habitat on disturbed ground and stone chipping, with mix of common native and planted species
TN2	Coopers Lane Garden - well maintained urban style garden with fruit trees, raised baeds, vegetables an d flowers
TN3	Exercise area
TN4	Plot 10 enclosed garden area, with bark chip and scattered ornamental shrubs and small cultivated areas.
TN5	Dog fouling area bounded by old brick wall supporting ferns and buddlejia.

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