

**SITE OFF HUGMORE LANE, HOLT,  
WREXHAM -**

**EXTENDED PHASE 1 HABITAT SURVEY**

**SEPTEMBER 2015**



**ces ecology**  
consultant ecologists

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## EXECUTIVE SUMMARY

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- Cheshire Ecological Services Ltd. (CES), the consultancy arm of Cheshire Wildlife Trust, to which all profits are covenanted, was commissioned to conduct an Extended Phase 1 Habitat Survey of a site at Hugmore Lane, Holt, where a residential development is proposed.
- The purpose of the survey was to gain baseline ecological information of the site in order to assess its current status, and to identify any ecological constraints to development that may currently be associated with the development areas and/or the surrounding land.
- The proposed development site totalled 0.6Ha, and was located 2.3km to the east of the town of Wrexham whilst Wrexham Industrial Estate was located within 200m of the southern boundary of the site.
- At the time of survey the site comprised industrial units, hard-standing, a plantation woodland belt, areas of semi-improved grassland, amenity grassland, scattered scrub and scattered trees.
- As part of the desk-based study, the Local Biodiversity Recording Centre provided records of protected and/or BAP Priority Species occurring within 1km of the proposed development sites, within the past twenty years.
- Features of ecological interest identified during the survey included ponds, mature oak trees and hedgerows. Although not necessarily afforded legal protection, it was recommended that where practicable, these features be retained and sufficiently protected during development works.
- The habitat composition of the site was considered to have potential to support legally protected/BAP wildlife species, including badger, barn owl, bat, bird, butterflies and moths, great crested newt, invasive species, polecat and reptiles.
- It was considered appropriate and proportionate to recommend further survey/appraisal effort in respect of badger, bats, barn owl, great crested newt and reptiles before any potentially disturbing works take place. The results of these surveys should enable the Local Planning Authority to make an informed decision as to whether or not it is possible to discharge their responsibilities under current planning when determining the planning application submitted in respect of the proposed development.
- A number of recommendations were made in respect of the protection/control of birds, butterflies and moths, polecats and invasive species which may inadvertently stray on to/colonise the development site.

## **1.0 INTRODUCTION**

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- 1.1 Cheshire Ecological Services Ltd. (CES), the consultancy arm of Cheshire Wildlife Trust, to which all profits are covenanted, was commissioned to conduct an Extended Phase 1 Habitat Survey of a site at Hugmore Lane, Holt, where a residential development is proposed.
- 1.2 The purpose of the survey was to gain baseline ecological information of the site in order to assess its current status, and to identify any ecological constraints to development that may currently be associated with the development area and/or the surrounding land.
- 1.3 The survey was conducted by Natasha Firth BSc (Hons) MSc Grad CIEEM and Lindsay Overstall BSc (Hons) MSc on 7<sup>th</sup> September 2015.
- 1.4 Weather conditions at the time of survey were mild and bright with a temperature of 15°C.

## **2.0 SITE DESCRIPTION**

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- 2.1 The survey was centred on the following OS grid reference SJ 37992 51203.
- 2.2 The area of land requested to be surveyed totals approximately 0.6 hectares, and is hereafter referred to as the 'site'. The site was located 2.3km to the east of the town of Wrexham whilst Wrexham Industrial Estate was located within 200m of the southern boundary of the site.
- 2.3 At the time of survey the site comprised industrial units, hard-standing, a plantation woodland belt, areas of semi-improved grassland, amenity grassland, scattered scrub and scattered trees.
- 2.4 Land use in the wider area comprised mixed-use farmland, residential and industrial properties, roads and a golf course (refer to Appendix A – Site Location Plan).
- 2.5 The site was bounded to the north by a residential property with associated gardens and outbuildings, to the east by an improved grassland field, to the south was Francis' Lane and to the west was Hugmore Lane.

## **3.0 SURVEY METHODS**

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### **Desk-based study**

- 3.1 The desk-based study comprised consultation with the following consultees:
  - Defra – Magic Map
  - Cofnod – North Wales Environmental Information Service
  - Ordnance Survey – OS mapping of the local and wider area

- 3.2 The desk-based study comprised consultation with Defra's online facility 'Magic Map' to search for statutorily designated nature conservation sites within the local and wider area.
- 3.3 Cofnod was asked to provide information on statutory and non-statutory nature conservation sites and protected/Biodiversity Action Plan (BAP) Priority species within, and surrounding, the proposed development sites (within approximately a 1km radius).

### **Extended Phase 1 Habitat Survey**

- 3.4 This survey involved the mapping of various habitat types on the site in addition to any habitat features and botanical species of conservation importance. A thorough walk-over survey was undertaken of the site. The methodology for this survey followed that described by the Joint Nature Conservation Committee (JNCC, 2010).
- 3.5 Priority habitats, for which there is a national or local Biodiversity Action Plan (BAP) and those listed under Section 42 of the Natural Environment and Rural Communities Act, 2006, were recorded as such where present. The UK BAP list of priority habitats and species has now been superseded by the S42 list (for Wales), however, as it is still widely recognised the two should be considered interchangeable.
- 3.6 Preliminary searches were also carried out for protected/BAP species such as badgers, bats, reptiles and great crested newts (GCN) that may potentially use the site. Scientific names and the national status of vegetative species recorded follow Stace (1997). Scientific and common names stated in the text are also presented in Appendix C.
- 3.7 The abundance of all recorded botanical species identified in potential Biodiversity Action Plan (BAP)/Priority habitats was assessed using the DAFOR scale, as described by Sutherland (1996). The DAFOR scale is a broad interpretive assessment whereby the surveyor assigns one of the following categories to the abundance of the species; Dominant, Abundant, Frequent, Occasional or Rare.
- 3.8 All trees with features such as holes, cracks and crevices were assessed for their suitability to support roosting bats, and were categorised in accordance with the Bat Conservation Trust's (BCT) Bat Survey: Good Practice Guidelines, (2012). The guidelines outline the initial survey requirements of all trees, and where necessary, detail the required further actions and likely mitigation. Trees were allocated the following categories (based on an assessment of potential roost features when viewed from the ground):

**Category 1\*** - Trees with multiple, highly suitable features capable of supporting larger roosts.

**Category 1** – Trees with definite bat potential, supporting fewer suitable features than Category 1\* trees.

**Category 2** – Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.

**Category 3** – Trees with no potential to support bats.

### **Survey Limitations**

- 3.9 The observations made during this survey have been used to assess the presence, or potential presence, of protected and/or BAP species within the proposed area of works and to recommend further actions where required. It should however, be noted that this survey serves as a single visit representing a 'snap-shot in time' whereby only the species present at the time of survey were recorded.
- 3.10 Positive evidence of species that use this site periodically or are in growth at different times of the year may not have been recorded. It is important to consider that the absence of a species from a particular survey does not necessarily indicate the absence (or continued absence) of that species from the area.

## **4.0 RESULTS**

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### **Desk-based Study**

- 4.1 Defra's online facility 'Magic Map' indicates that the closest statutorily designated nature conservation sites are River Dee (England) Site of Special Scientific Interest (SSSI) and River Dee and Bala Lake Special Area of Conservation (SAC), which are located approximately 3.8km to the east of the site at its nearest point. River Dee (England) SSSI, which has an area of approximately 371.5Ha, is noted for populations of Atlantic salmon, otter, club-tailed dragonfly and a variety of species of breeding bird. The meandering section of river closest to the proposed development site is nationally important for fluvial geomorphology. The River Dee and Bala Lake SAC, which totals approximately 1308.9Ha, is noted for its habitats which include tidal rivers, mud flats, salt marshes and broad-leaved woodland. The site also supports notable species including Atlantic salmon, otter, floating water plantain and a number of freshwater fish.
- 4.2 Cofnod did not highlight the presence of any non-statutorily designated nature conservation sites located within approximately 1km of the proposed development site.

4.3 Cofnod highlighted the presence of the following protected species occurring within approximately 1km of the proposed development sites:

| Scientific name              | Common name        | Designations                                                   |
|------------------------------|--------------------|----------------------------------------------------------------|
| <i>Aegithalos caudatus</i>   | Long-tailed tit    | WBA                                                            |
| <i>Chiasmia clathrata</i>    | Latticed Heath     | UKBAP, S42                                                     |
| <i>Chiroptera sp.</i>        | Bat sp.            | S42, WCA5                                                      |
| <i>Coenonympha pamphilus</i> | Small heath        | UKBAP, RD1(UK), S42                                            |
| <i>Columba oenas</i>         | Stock pigeon       | BDir2.2, Bern, RD2(UK), UKBA                                   |
| <i>Cuculus canorus</i>       | Cuckoo             | UKBAP, S42, UKBA, UKBR, WBR                                    |
| <i>Delichon urbicum</i>      | House martin       | Bern, UKBA, WBA                                                |
| <i>Erynnis tages</i>         | Dingy Skipper      | UKBAP, RD1(UK), S42                                            |
| <i>Falco tinnunculus</i>     | Kestrel            | Bern, Bonn, CITES, S42, UKBA, WBR                              |
| <i>Hirundo rustica</i>       | Swallow            | Bern, UKBA, WBA                                                |
| <i>Meles meles</i>           | Badger             | Bern, BA, LBAP[WRE]                                            |
| <i>Muscicapa striata</i>     | Spotted flycatcher | UKBAP, Bern, Bonn, S42, UKBR, WBR                              |
| <i>Mustela putorius</i>      | Polecat            | UKBAP, Bern, HDir, RD2(UK), S42                                |
| <i>Myotis mystacinus</i>     | Whiskered Bat      | Bern, Bonn, EPS, HDir, RD2(UK), WCA5                           |
| <i>Passer domesticus</i>     | House sparrow      | UKBAP, S42, UKBR, WBA                                          |
| <i>Passer montanus</i>       | Tree sparrow       | UKBAP, S42, UKBR, WBR                                          |
| <i>Picus viridis</i>         | Green woodpecker   | Bern, UKBA, WBA                                                |
| <i>Prunella modularis</i>    | Dunnock            | UKBAP, Bern, RD2(UK), S42, UKBA                                |
| <i>Pyrgus malvae</i>         | Grizzled Skipper   | UKBAP, RD1(UK), S42                                            |
| <i>Pyrrhula pyrrhula</i>     | Common bullfinch   | UKBAP, S42, UKBA, UKBR, WBR                                    |
| <i>Sturnus vulgaris</i>      | Starling           | UKBAP, BDir2.2, Bern, RD2(UK), S42, UKBR, WBR                  |
| <i>Sylvia communis</i>       | Common whitethroat | UKBA, WBA                                                      |
| <i>Triturus cristatus</i>    | Great crested newt | UKBAP, Bern, EPS, HDir, RD1(UK), RD2(UK), S42, WCA5, LBAP[WRE] |
| <i>Turdus iliacus</i>        | Redwing            | BDir2.2, UKBA, UKBR, WBA, WCA1.1                               |
| <i>Turdus philomelos</i>     | Song thrush        | UKBAP, BDir2.2, Bern, RD2(UK), S42, UKBR, WBA, LBAP[WRE]       |
| <i>Turdus pilaris</i>        | Fieldfare          | BDir2.2, UKBA, UKBR, WBA, WCA1.1                               |
| <i>Turdus viscivorus</i>     | Mistle thrush      | BDir2.2, Bern, RD2(UK), UKBA                                   |
| <i>Tyto alba</i>             | Barn owl           | Bern, CITES, RD2(UK), UKBA, WBA, WCA1.1, WCA9, LBAP[WRE]       |

Note: All species names and designations provided by Cofnod.

### Designations key:

BA - Protection of Badgers Act

BDir2.2 - EU Birds Directive Annex 2.2

Bern - The Bern Convention on the Conservation of European Wildlife and Natural Habitats

Bonn - The Bonn Convention on the Conservation of Migratory Species of Wild Animals

CITES - Convention on International Trade in Endangered Species

EPS - European Protected Species

HDir - EU Habitats Directive

LBAP - Local Biodiversity Action Plan Priority Species

RD1(UK) - Red Data Book listing for the UK based on IUCN guidelines

RD2(UK) - Red Data Book listing for the UK not based on IUCN guidelines

S42 - Natural Environment and Rural Communities Act 2006 (Section 42)

UKBA - UK Amber listed birds (not based on IUCN criteria)

UKBAP - UK Biodiversity Action Plan Priority Species

UKBR - UK Red listed birds (not based on IUCN criteria)  
WBA - Welsh Amber listed birds (not based on IUCN criteria)  
WBR - Welsh Red listed birds (not based on IUCN criteria)  
WCA1.1 - Wildlife & Countryside Act 1981 Schedule 1.1  
WCA5 - Wildlife & Countryside Act 1981 Schedule 5  
WCA9 - Wildlife & Countryside Act 1981 Schedule 9  
WRE - Wrexham County Council Local Biodiversity Action Plan

- 4.4 A number of other species records were provided but have not been included in this report as it is considered highly unlikely that they would be associated with the proposed development site. For example, numerous records of farmland birds were provided. Given the habitat composition of the site and the nature of the proposed works, it is considered highly unlikely that the proposed development would impact upon such species.

### **Fieldwork**

- 4.5 Features of interest recorded on the sites during this survey are described in the Target Notes (TN) below. All numbered Target Notes correspond with the Phase 1 Habitat Maps (Appendix B). Species lists for each area and photographic plates are presented within Appendices C and D respectively.
- 4.6 Cofnod highlighted the presence of ancient woodland habitat located within 1km of the site.

### **Target Notes**

TN1 – Building with potential to support bats and birds (Plates 1a & 1b)

TN2 – Category 2 trees with potential to support roosting bats (Plate 2)

TN3 – Potential snuffle holes

TN4 – Cotoneaster – potentially listed on Part 2 of *Schedule 9 of the Wildlife and Countryside Act, 1981* (as amended) (Plate 3)

TN5 – Rubble pile – potential to support amphibians, reptiles and small mammals (Plate 4)

TN6 – Bund – potential to support reptiles and mammals (Plate 5)

## **5.0 DISCUSSION**

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### **Designated Sites**

- 5.1 Defra indicated that the closest statutorily designated nature conservation sites are River Dee (England) SSSI and River Dee and Bala Lake SAC, which are located approximately 3.8km to the east of the site. The proposed development site lies within the SSSI impact risk zone for River Dee (England) SSSI. However due to the nature of the proposed development, a small residential development, a detailed impact assessment is not required. It is considered unlikely that the proposed development would directly adversely impact upon these statutorily designated sites due to the distance and lack of habitat connectivity between the sites. There may however be an

indirect impact of increased numbers visiting the River Dee & Bala Lake site for recreation.

- 5.2 The proposed development is considered unlikely to affect the restored ancient woodland habitat located approximately 800m to the west of the site due to distance and a lack of habitat connectivity between the sites.

### **Habitats**

5.3 Plantation Woodland (Plate 5)

An area of plantation woodland formed a woodland belt adjacent the eastern boundary of the site. This area was dominated by two rows of mature poplar sp. trees with occasional laurel. Ground flora in this area included cock's-foot, meadow buttercup, ivy and broad-leaved dock.

5.4 Semi-improved neutral grassland

A narrow strip of semi-improved neutral grassland was present adjacent the southern boundary of the site, interspersed with areas of scrub and scattered trees. Vegetation in this area was relatively tall and unmanaged. Grass species included cock's-foot, common bent and false-oat grass. Herbaceous species included hedge parsley, black medick, common mouse-ear and self-heal.

5.5 Scrub (Plate 1)

Dense areas of scrub vegetation were present adjacent the southern boundary of the site. The vegetation in these areas was typically tall and bushy. Species included hawthorn, blackthorn, bramble and hazel.

5.6 Poor semi-improved grassland (Plate 6)

An area of poor-semi improved grassland was present to the west of the site, adjacent Hugmore Lane. This area was heavily shaded by two mature trees and whilst the sward was relatively short, it did not appear to have been subject to regular management. Grass species in this area included cock's-foot, fescue sp. and annual meadow grass. Herbaceous species included creeping buttercup, yarrow, ribwort plantain, broad-leaved dock and spear thistle.

5.7 Scattered broadleaved trees (Plate 1)

A number of scattered trees were present adjacent the southern and western boundaries of the site. These trees were generally mature with some clad in ivy. Species included ash, oak sp. and horse-chestnut.

5.8 Amenity grassland (Plate 7)

Amenity grassland was present adjacent the car park area and Hugmore Lane, which formed the western boundary of the site. Vegetation in these areas was close mown and appeared to be subject to regular management. Grass species included perennial rye-grass, cock's-foot and fescue sp. Herbaceous species included daisy, ribwort plantain, white clover and creeping buttercup.

5.9 Ephemeral/short perennial (Plate 1)

Small areas of ephemeral vegetation were present adjacent the edges of the on-site hard-standing. Species included moss sp., black medick, willowherb sp. and bristly ox-tongue.

5.10 Introduced shrub (Plate 7)

Areas of introduced shrub were present adjacent the boundaries of the site. Species in these areas included laurel, guelder rose, bittersweet and cherry sp.

5.11 Buildings (Plates 1a, 1b & 8)

A large building was present on site. This building comprised a series of adjoined buildings of varying ages which have been split into two buildings for the purpose of this survey. Building 1 was a modern brick-built industrial structure which had a multi-pitched corrugated asbestos-type and metal roof. This building was partially rendered and partially clad in corrugate metal. Building 2 was a large multi-pitched brick building with a slate roof. This building was much older and formed part of an L-shaped building, the rest of which was located off site.

Two flat-roofed metal structures were present to the east of the main building. These appeared to have been used for storage and security.

5.12 Hard-standing (Plates 1 & 8)

A large expanse of asphalt hard-standing surrounded the on-site building. No vegetation was recorded in this area, with the exception of ephemeral vegetation around the edges (see Appendix B: Extended Phase 1 Habitat Map).

**Features of Ecological Interest**

5.13 The following features of 'significant ecological interest' were identified during the survey:

- Mature trees

5.14 Although not necessarily afforded legal protection, it is recommended that where practicable, the above features of ecological interest should be retained and sufficiently protected during development works.

5.15 The habitat composition of the site has potential to support legally protected/BAP wildlife species. It was not within the scope of this survey to carry out detailed searches for protected species, although the potential for the study site to support the following species is discussed below:

- Badger
- Barn Owl
- Bats
- Birds
- Butterflies & Moths
- Great crested newt and amphibians
- Invasive species

- Polecat
- Reptiles

Legislation relating to each species discussed in this report is presented in Appendix E – Legislation. No other legally protected species are considered likely to be associated with the proposed development site due to a lack of suitable habitat on, and surrounding the site.

#### 5.16 Badgers

Badgers and their setts are protected under British law. Therefore surveys are required to check for the presence of badgers or their setts if they are likely to be disturbed for any reason. Statutory guidance indicates that a licence may be required if potentially disturbing works are to take place within 30m of a badger sett.

Cofnod provided details of badgers occurring within around 1km of the proposed development site.

The well vegetated eastern and southern boundaries of the site were considered to offer suitable commuting habitat for badgers. A bund was also present around these boundaries, which offered potential sett building habitat. The areas of poor semi-improved and amenity grassland were considered to offer potential foraging habitat. A number of small scrapes in the ground were recorded within the plantation woodland and a number of mammal paths were recorded around the edge of the site; it is possible that these could be badger snuffle holes and badger paths however definitive evidence such as badger hair was not found. Furthermore, badgers are known to be present in the local area. It is therefore recommended that prior to any potentially disturbing works commencing on site, a badger survey be conducted. This survey should be conducted between November and April, when vegetation is at its lowest. The survey should also take into consideration land within 30m of the proposed development site boundary, where possible.

#### 5.17 Barn owl

Barn owls receive special protection under Schedule 1 of the Wildlife & Countryside Act, 1981 (as amended). In addition to the protection afforded to all wild birds under Section 1 of the Act, species listed on Schedule 1 also receive special legal protection when breeding; making it an offence to intentionally or recklessly disturb any wild barn owl whilst it is at or near a nest containing eggs or young, or disturb the dependent young of such a bird. Barn owls nest and roost in buildings and within deep cavities in trees, and will readily utilise nest boxes where available.

Cofnod provided details of Barn owl occurring within around 1km of the site.

The building on site was not considered to offer suitable roosting opportunities for barn owl due to a lack of suitably large holes/access features. The site comprised predominantly hard-standing and buildings. The grassland which was present on site was considered to be too short and lacking the tussocky structure required by barn owl, as such the site was considered to offer poor (i.e. Type 3) foraging habitat for this species. Similarly none of the trees on site were observed to have large enough holes to support roosting barn owl. It should however be noted that this survey was conducted when vegetation was dense and trees were in leaf which may obscure

potential features. It is therefore recommended that if any of the trees on site are due to be lost/affected by the proposed development, they should first be subject to a ground based assessment for their potential to support barn owl. This can be conducted in conjunction with the bat roost potential assessment (paragraph 5.18).

#### 5.18 Bats

All British species of bat are protected under both European and British law. Therefore surveys are required to check for their presence in areas where bats or their roosts are likely to be disturbed for any reason.

Bats are known to roost in buildings and mature trees, where they rest, give birth, raise young and hibernate. Buildings provide a choice of safe, dry places and can present a whole range of potential roost sites such as within wall cavities, eaves or roofs.

Some bat species rely exclusively on trees for roost sites; others use them for only part of the year. The importance of trees to bats depends on species, season and foraging behaviour. Even in winter, deep cavities can provide protection against bad weather and fluctuations in temperature. Furthermore, trees and hedgerows, especially native ones, can host many species of insects, which are food for bats, and can also aid bat navigation.

Cofnod provided details of whiskered bat and bat sp. occurring within around 1km of site.

The modern brick and corrugated metal industrial building appeared to be well-sealed and was considered to offer limited potential for roosting bats. This building is due to be lost as part of the proposed development. Building 2 was considered to offer suitable roosting opportunities for bats. A number of slipped and/or broken roof slates were recorded at the time of survey along with a number of gaps in the brickwork. Bats have previously been recorded in the adjacent (off-site) buildings and so it is considered highly likely that bats also utilise the building at the proposed development site. This building is due to be converted for residential use. It is therefore recommended that a daytime internal bat survey be conducted of the building on site prior to the commencement of potentially disturbing works at the site. If evidence of bat usage is found and/or the building is considered to offer considerable potential for roosting bats, dusk emergence and dawn re-entry surveys will be required. These surveys should be conducted between May and September. The need for these surveys would be determined following the initial daytime survey visit.

A plantation woodland belt was present adjacent the eastern boundary of the site. This area was dominated by poplar sp. which were not considered to offer suitable roosting opportunities for bats due to a lack of suitable features. A number of mature trees were present adjacent the southern and western boundaries of the site. These trees included an ivy-clad ash, ivy-clad oak and two mature horse-chestnut trees. All of these trees were considered to be Category 2 trees, which offered some potential for roosting bats. It is recommended that these trees be retained and incorporated in to the development proposals. If any of these trees are due to be lost/affected by the proposed development, it is recommended that the trees be subject to a bat roost potential assessment by a licenced bat ecologist prior to potentially disturbing works

commencing on site. This assessment should ideally be conducted between November and March when trees are without leaves, which may obscure holes and/or features. It may then become necessary to conduct an aerial bat survey of any features identified during the initial assessment.

#### 5.19 Birds

All species of wild bird, their nest and eggs are protected under Section 1 of the *Wildlife and Countryside Act, 1981* (as amended). Therefore surveys are required to check for their presence where they are likely to be disturbed for any reason. In addition to the protection afforded to all wild birds under Section 1 of the Act, species listed on Schedule 1 receive special legal protection when breeding; making it an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 whilst it is at or near a nest containing eggs or young, or disturb the dependent young of such a bird. Legislation does not permit disturbance licences to be issued for nesting birds in relation to development of land.

Cofnod provided numerous records of priority and protected bird species occurring within the search area. The site's potential to support these species, and other species potentially associated with the site or wider area is presented in the table below.

| Species          | Suitable habitat for nesting/breeding? | Suitable habitat for passage/over wintering? | Species possibly of association with the site |
|------------------|----------------------------------------|----------------------------------------------|-----------------------------------------------|
| Common bullfinch | Shrubs and scrub for nesting.          | Scrub and trees                              | Likely                                        |
| Song thrush      | Shrubs and trees for nesting.          | Scrub and trees                              | Likely                                        |
| House martin     | Buildings for nesting.                 | No (migrant)                                 | Possible                                      |
| Swallow          | Buildings for nesting                  | No (migrant)                                 | Possible                                      |
| Kestrel          | Trees for nesting                      | Trees                                        | Possible                                      |
| House sparrow    | Buildings for nesting                  | Scrub for feeding                            | Likely                                        |
| Tree sparrow     | Buildings and trees for nesting        | Trees                                        | Possible                                      |
| Dunnock          | Trees for nesting                      | Scrub and trees                              | Likely                                        |
| Starling         | Buildings and trees for nesting        | Scrub and trees                              | Likely                                        |
| Redwing          | No (migrant)                           | Scrub and trees                              | Possible                                      |
| Fieldfare        | No (migrant)                           | Scrub and trees                              | Possible                                      |
| Stock pigeon     | Trees and buildings for nesting        | Shrubs for feeding                           | Possible                                      |
| Whitethroat      | Shrubs and scrub for nesting           | No (migrant)                                 | Possible                                      |
| Mistle thrush    | Trees and shrubs for nesting           | Scrub and trees                              | Likely                                        |
| Green woodpecker | Trees for nesting                      | Trees                                        | Possible                                      |

|                    |                              |                  |          |
|--------------------|------------------------------|------------------|----------|
| Long-tailed tit    | Shrubs and scrub for nesting | Trees and shrubs | Possible |
| Spotted flycatcher | Trees for nesting            | No (migrant)     | Possible |
| Cuckoo             | Trees and shrubs for nesting | No (migrant)     | Possible |

NB: 'Breeding' refers to habitat suitable to support breeding attempts, whether the nest site is on or off site

The site is considered to offer potential nesting sites on and within the building on site for swallow, house sparrow and starling. The mature trees on site are considered to offer potential nesting opportunities for kestrel, stock pigeon and green woodpecker. The shrubs and scrub habitats on site are considered to offer suitable nesting habitat for whitethroat, mistle thrush, bullfinch and dunnock.

All woody vegetation on site has potential to support nesting birds. It is not known whether any on site woody vegetation is being lost as part of the development. Retention of hedgerows and mature trees would help reduce the potential development impacts on breeding birds.

It is recommended that all site preparation works, including vegetation removal and building demolition, be conducted between October and February (i.e. outside of the nesting bird season, which generally encompasses March to September). If this is not possible and works are required to be conducted during the bird nesting season, CES Ecology should be contacted and a nesting bird survey be conducted prior to any potentially disturbing works taking place. In the event that nesting birds are found to be present, an appropriate mitigation strategy should be formulated and implemented.

#### 5.20 Butterflies & moths

Cofnod provided records of small heath, dingy skipper and grizzled skipper butterflies and the latticed heath moth occurring within 1km of the proposed development site. These species are all listed on Section 42 of the *Natural Environment and Rural Communities Act, 2006* and are UK Biodiversity Action Plan Priority species.

The particular caterpillar food plant of the dingy skipper is common bird's-foot trefoil, with favoured habitats including sunny areas of waste ground with foodplants grown in a sparse sward with taller vegetation available for shelter. The caterpillar food plants of the grizzled skipper include creeping cinquefoil, bramble and common bird's-foot trefoil. Favoured habitats include recently abandoned industrial sites, woodland rides and unimproved grassland. The small heath feeds on fine grasses including bent sp. and fescue sp. This species favours grassland habitats with short, sparse vegetation.

The particular caterpillar foodplants of the latticed heath moth include clovers and trefoils. They favour disturbed sites such as waste ground and gardens.

The site was considered to offer potentially suitable habitat for the small heath butterfly and latticed heath moth, particularly the areas of grassland semi-improved grassland and scrub adjacent the southern boundary of the site. No common bird's-foot trefoil or creeping cinquefoil was recorded on site and so it is considered unlikely that dingy

skipper and grizzled skipper are associated with the site. There was a good supply of nectar sources, including bramble, adjacent the eastern and southern boundaries of the site. The main area of the site, comprising buildings and hard-standing was considered to offer limited potential for butterflies and moths. It is therefore recommended that, where possible, the areas of semi-improved grassland, scrub and scattered trees around the edge of the site are retained and incorporated into the proposed development. If this is not possible, nectar rich wildflower species (see Appendix F – Wildlife Friendly Planting List) should be incorporated into the planting schedule for the site in order to provide a food source for butterflies and moths which may frequent the site.

#### 5.21 Great crested newt and smooth newt

GCN are protected under both European and British law. Adult GCN predominantly live terrestrially, but utilise ponds for breeding purposes during the spring and summer months. Statutory guidance indicates that a survey may be necessary to check for the presence of GCN if background information on distribution suggests that they may be present. Detailed indicators include:

- Any historical records for GCN on the site, or in the general area
- A pond on or near the site (within around 500m), even if it holds water only seasonally. Note that muddy, cattle-poached, heavily vegetated or shady ponds, ditches and temporary flooded hollows can be used by GCN
- Sites with refuges (such as piles of logs or rubble), grassland, scrub, woodland, or hedgerows within 500m of a pond

Cofnod provided details of great crested newt occurring within 1km of the proposed development site.

No ponds/water-bodies were identified on site at the time of survey. OS mapping highlighted the presence of four ponds/water-bodies within 250m and a further twelve ponds/water-bodies within 250m to 500m of the proposed development site/s boundary (refer to Appendix A).

GCN are known to be present within 250m of the proposed development site and given the nature of the proposed works and the presence of suitable shelter opportunities and foraging habitat on site, it is recommended that a GCN appraisal be conducted prior to the commencement of potentially disturbing works.

#### 5.22 Invasive species

Cotoneaster is a popular garden and landscaping species whose berries are utilised and spread by birds. When introduced to the wild they damage native vegetation and can be difficult to eradicate. As a result, rhododendron and cotoneaster are listed on Part 2 of Schedule 9 of the *Wildlife and Countryside Act, 1981* (as amended).

Should development works be likely to affect area/s colonised by this species, appropriate measures to prevent its spread (such as digging up and allowing the roots to become dried out, thus killing the plant before disposal), will be required prior to the commencement of works.

### 5.23 Polecat

Polecats are a UK Biodiversity Action Plan (BAP) species and are listed on Section 42 of the Natural Environment & Rural Communities Act, 2006 (refer to Appendix E). Cofnod provided details of polecat occurring within approximately 1km of the proposed development site.

It is considered possible that polecat occur within the site as this species is known to frequent farmland habitats, as found immediately adjacent the site. Polecats breed between March and April, making nests in stone piles or tree hollows. It is not yet known whether the development proposals will result in the loss or disturbance of potential polecat nesting sites. No further specific survey effort in respect of this species is currently considered necessary.

### 5.24 Reptiles

All six species of British reptile are protected against intentional killing, injury or sale under Schedule 5 of the *Wildlife and Countryside Act*, 1981. The sand lizard and smooth snake are afforded a higher degree of protection under European law, which, amongst other things, makes it an offence to damage, destroy or obstruct their places of shelter or disturb these species in such a place. However, the distribution of these species is limited, and is largely restricted to a few southern counties in England, with the exception of some coastal sites in Merseyside and North Wales which support populations of sand lizard. The distribution of the remaining 'common' species (i.e. adder, grass snake, slow worm and common lizard) is widespread. With some variation between species, reptiles prefer undisturbed habitats with open areas for basking and warmth, and more vegetated areas for shelter and feeding. They shelter and hibernate in crevices underground, such as within old mammal burrows, cracks within concrete bases and within spoil/rubble mounds.

Cofnod did not provide details of reptiles occurring within around 1km of the proposed development site.

The grass snake is the UK's only widespread egg-laying reptile; typically they lay their eggs within mounds of decaying vegetation which provides both protection and warmth for the developing eggs. They also differ from the other species of native reptile as they are semi-aquatic, utilising water bodies for dispersal and feeding. The home range of an individual grass snake can be large, however, they show a high fidelity to aquatic habitats such as ponds and slow-flowing water courses, and their home range is usually centred on such features.

The site was considered to offer limited potential habitat for reptiles and no water-bodies/ponds were present on or immediately adjacent the site. The majority of the site comprised hard-standing and buildings which are unsuitable habitats for reptile. However the plantation woodland to the east of the site, and scrub and introduced shrub habitats adjacent the southern boundary may provide suitable shelter habitat for reptiles. A rubble pile was also present adjacent the northern boundary of the site which may also provide refuge for reptile species. Given that the majority of the site is considered to be unsuitable for reptiles, it is recommended that if the area of plantation woodland and/or areas of vegetation adjacent the southern boundary are due to be affected, further appraisal effort in respect of reptiles may be required.

## 6.0 SUMMARY RECOMMENDATIONS TABLE

|          | Species potentially associated with the site/s? | Further survey effort required?                                                                                                                                                                                                                                                                                              | Survey timing                                                                                     | Recommendations                                                                                                                                                                                    |
|----------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Badger   | Yes                                             | Yes:<br>A <b>badger survey</b> will be required at site and on land within 30m of the site boundary, where possible.                                                                                                                                                                                                         | <b>Any time of year<br/>Ideally November-April</b>                                                | No potentially disturbing work should take place until the results of the survey are known.                                                                                                        |
| Barn owl | Yes                                             | Potentially:<br>If any trees on site are to be affected/lost as part of the development, they first should be assessed for their potential to support barn owl. This could be combined with the <b>bat roost potential assessment</b> .                                                                                      | <b>Any time of year<br/>Ideally when the trees are not in leaf</b>                                | No potentially disturbing work should take place until the results of the assessment are known.                                                                                                    |
| Bats     | Yes                                             | Potentially:<br>If any trees on site are to be affected/lost as part of the development, a <b>bat roost potential assessment</b> prior to the commencement of works.<br><br>Yes:<br>A <b>daytime internal bat survey</b> of the building/s on site should be conducted prior to any potentially disturbing works commencing. | <b>Any time of year<br/>Ideally when the trees are not in leaf</b><br><br><b>Any time of year</b> | No potentially disturbing work should take place until the results of the assessment are known.<br><br>No potentially disturbing work should take place until the results of the survey are known. |
| Birds    | Yes                                             | Potentially:<br><b>Nesting bird surveys</b> will be required <u>if</u> vegetation removal works are to take place between                                                                                                                                                                                                    | <b>March - September</b>                                                                          | Vegetation removal works should take place outside of the bird breeding season (i.e. October – February). A survey will not be required if potentially                                             |

|                     |             |                                                                                                                                                                  |                                                                    |                                                                                                                                                                         |
|---------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |             | March & September.                                                                                                                                               |                                                                    | disturbing works are undertaken during this period.                                                                                                                     |
| Butterflies & Moths | Yes         | No                                                                                                                                                               | -                                                                  | It is recommended that the areas of semi-improved grassland and scrub are retained and incorporated into the proposed development.                                      |
| Great crested newt  | Yes         | Yes:<br>Further <b>appraisal effort</b> in respect of <b>GCN</b> will be required prior to the commencement of works on site.                                    | <b>March – October</b>                                             | No potentially disturbing work should take place until the further appraisal effort has been carried out.                                                               |
| Cotoneaster sp.     | Yes         | No                                                                                                                                                               | -                                                                  | If areas with this species present are to be disturbed, an appropriate mitigation strategy will be required to avoid causing their spread.                              |
| Polecat             | Yes         | No                                                                                                                                                               | -                                                                  | No further survey effort in respect of this species is currently considered necessary.                                                                                  |
| Reptiles            | Potentially | Potentially:<br>A <b>reptile appraisal</b> may be required if the area of woodland and scrub habitats on site are to be affected by the proposed development.    | <b>April - October</b>                                             | No potentially damaging/disturbing works should take place until the results of the appraisal are known.                                                                |
| Mature trees        | On site     | Potentially:<br>A <b>bat/barn owl roost potential assessment</b> will be required if any of the trees on site are due to be lost/affected by the proposed works. | <b>Any time of year<br/>Ideally when the trees are not in leaf</b> | No potentially disturbing works should take place until the results of this assessment are known. Trees to be retained should be adequately protected during the works. |

## 7.0 REFERENCES

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BCT (2012). Hundt L. Bat Surveys: Good Practice Guidelines, Second Edition, Bat Conservation Trust.

JNCC (2010). Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Joint Nature Conservation Council.

Shawyer, C. R. (2011). Barn Owl (*Tyto alba*) Survey Methodology and Techniques for use in Ecological Assessment: Developing Best Practice in Survey and Reporting. IEEM, Winchester.

Stace, C. (1997). New Flora of the British Isles. Second Edition. Cambridge.

Sutherland, W.J. (Ed.) (1996) Ecological Census Techniques: A Handbook. University of Cambridge

## Appendices

**Appendix A: Site Location Map**



**Legend**

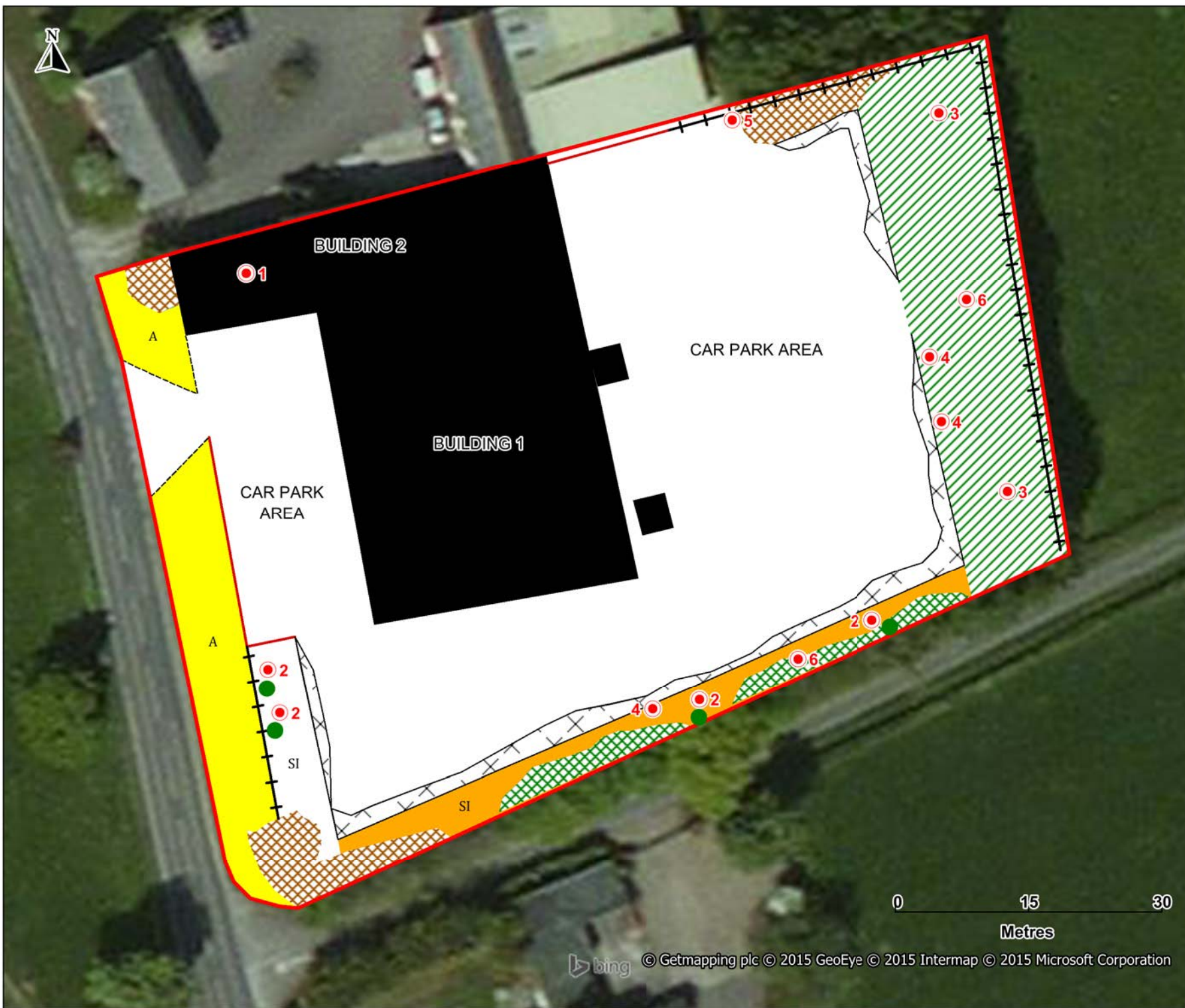
- Proposed Development Site Boundary
- 250m Radius
- 500m Radius
- Indicative location of pond/water-body

|           |                               |   |
|-----------|-------------------------------|---|
| Client:   | Chris Counsell - App-Chem Ltd |   |
| Project:  | Hugmore Lane, Wrexham         |   |
| Map:      | Site Location Map             |   |
| CES Ref:  | CES/1231/09-15/LO             |   |
| Scale:    | Not to scale                  |   |
| Date/Rev: | September 2015                | 0 |

CES Ecology  
Bickley Hall Farm  
Bickley  
Malpas  
Cheshire  
SY14 8EF

**ces ecology**  
consultant ecologists

## **Appendix B: Extended Phase 1 Habitat Survey Map & Key**



**Legend**

Proposed Development Site Boundary

Target Note

**Habitats**

- A31 - Scattered broadleaved trees
- A112 - Broadleaved plantation woodland
- A21 - Dense/continuous scrub
- SI B22 - Semi-improved neutral grassland
- SI B6 - Poor semi-improved grassland
- A J12 - Amenity grassland
- J13 - Ephemeral/Short perennial
- J14 - Introduced shrub
- J36 - Building
- Hard-standing

**Boundaries**

- J24 - Fence
- J25 - Wall

|           |                               |   |
|-----------|-------------------------------|---|
| Client:   | Site at Hugmore Lane, Wrexham |   |
| Project:  | App-Chem Ltd.                 |   |
| Map:      | Extended Phase 1 Habitat Map  |   |
| CES Ref:  | CES/1231/09-15/NF             |   |
| Scale:    | Not to scale                  |   |
| Date/Rev: | September 2015                | 0 |

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Bickley  
Malpas  
Cheshire  
SY14 8EF

## Appendix C: Species Lists

### Species associated with the line of trees

| Scientific name              | Common name         | Abundance* |
|------------------------------|---------------------|------------|
| <i>Acer pseudoplatanus</i>   | Sycamore sapling    | Rare       |
| <i>Achillea millefolium</i>  | Yarrow              | Frequent   |
| <i>Alopecurus pratensis</i>  | Meadow foxtail      | Occasional |
| <i>Anthriscus sylvestris</i> | Cow parsley         | Occasional |
| <i>Arrhenathe rumelatus</i>  | False oat-grass     | Frequent   |
| <i>Cirsium arvense</i>       | Creeping thistle    | Occasional |
| <i>Cotoneaster sp.</i>       | Cotoneaster sp.     | Occasional |
| <i>Crataegus monogyna</i>    | Common hawthorn     | Occasional |
| <i>Dactylis glomerata</i>    | Cock's-foot         | Frequent   |
| <i>Fraxinus excelsior</i>    | Ash sapling         | Occasional |
| <i>Hedera helix</i>          | Ivy                 | Frequent   |
| <i>Lauraceae sp.</i>         | Laurel sp.          | Abundant   |
| <i>Mosses sp.</i>            | Moss sp             | Frequent   |
| <i>Populus sp.</i>           | Poplar sp.          | Abundant   |
| <i>Ranunculus acris</i>      | Meadow buttercup    | Occasional |
| <i>Rubus fruticosus</i>      | Bramble             | Frequent   |
| <i>Rumex obtusifolius</i>    | Broad-leaved dock   | Occasional |
| <i>Sonchus asper</i>         | Prickly sow-thistle | Occasional |
| <i>Trifolium repens</i>      | White clover        | Occasional |
| <i>Urtica dioica</i>         | Common nettle       | Occasional |

### Species present in the areas of introduced shrub

| Scientific name             | Common name        |
|-----------------------------|--------------------|
| <i>Anagallis arvensis</i>   | Scarlet pimpernel  |
| <i>Cirsium vulgare</i>      | Spear thistle      |
| <i>Epilobium sp.</i>        | Willowherb sp.     |
| <i>Euphorbia peplus</i>     | Petty spurge       |
| <i>Lamium purpureum</i>     | Red dead-nettle    |
| <i>Lapsana communis</i>     | Nipplewort         |
| <i>Lauraceae sp.</i>        | Laurel sp.         |
| <i>Leontodon autumnalis</i> | Autumn hawkbit     |
| <i>Picris hieracioides</i>  | Bristly ox-tongue  |
| <i>Plantago major</i>       | Greater plantain   |
| <i>Populus sp.</i>          | Poplar sp.         |
| <i>Ranunculus repens</i>    | Creeping buttercup |
| <i>Rumex crispus</i>        | Curled dock        |
| <i>Solanum dulcamara</i>    | Bittersweet        |
| <i>Stellaria media</i>      | Common chickweed   |

**Species present in the area of semi-improved neutral grassland with scattered trees and scrub**

| Scientific name              | Common name             | Abundance* |
|------------------------------|-------------------------|------------|
| <i>Acer pseudoplatanus</i>   | Sycamore                | Rare       |
| <i>Achillea millefolium</i>  | Yarrow                  | Frequent   |
| <i>Anthriscus sylvestris</i> | Cow parsley             | Occasional |
| <i>Arrhenathe rumelatus</i>  | False oat-grass         | Frequent   |
| <i>Cerastium fontanum</i>    | Common mouse-ear        | Occasional |
| <i>Cirsium arvense</i>       | Creeping thistle        | Frequent   |
| <i>Corylus avellana</i>      | Common hazel            | Occasional |
| <i>Cotoneaster sp.</i>       | Cotoneaster sp.         | Rare       |
| <i>Crataegus monogyna</i>    | Common hawthorn         | Occasional |
| <i>Dactylis glomerata</i>    | Cock's-foot             | Frequent   |
| <i>Epilobium sp.</i>         | Willowherb sp.          | Frequent   |
| <i>Fraxinus excelsior</i>    | Ash                     | Occasional |
| <i>Geranium molle</i>        | Dove's-foot cranes-bill | Occasional |
| <i>Hedera helix</i>          | Ivy                     | frequent   |
| <i>Lauraceae sp.</i>         | Laurel sp.              | Frequent   |
| <i>Leontodon autumnalis</i>  | Autumn hawkbit          | Rare       |
| <i>Medicago lupulina</i>     | Black medick            | Occasional |
| <i>Mosses sp.</i>            | Mosses sp.              | Frequent   |
| <i>Plantago lanceolata</i>   | Ribwort plantain        | Occasional |
| <i>Populus sp.</i>           | Poplar sp.              | Occasional |
| <i>Prunella vulgaris</i>     | Self-heal               | Rare       |
| <i>Prunus spinosa</i>        | Blackthorn              | Occasional |
| <i>Quercus sp.</i>           | Oak sp.                 | Occasional |
| <i>Quercus sp.</i>           | Oak sp.                 | Occasional |
| <i>Rubus fruticosus</i>      | Bramble                 | Frequent   |
| <i>Rumex obtusifolius</i>    | Broad-leaved dock       | Occasional |
| <i>Ulmus sp.</i>             | Elm sp.                 | Occasional |
| <i>Urtica dioica</i>         | Common nettle           | Frequent   |

**Species present in area of poor semi-improved grassland**

| Scientific name                | Common name         |
|--------------------------------|---------------------|
| <i>Aceraceae hippocastanum</i> | Horse chestnut      |
| <i>Achillea millefolium</i>    | Yarrow              |
| <i>Anthriscus sylvestris</i>   | Cow parsley         |
| <i>Centaurea nigra</i>         | Common knapweed     |
| <i>Cirsium vulgare</i>         | Spear thistle       |
| <i>Dactylis glomerata</i>      | Cock's-foot         |
| <i>Festuca sp.</i>             | Fescue sp.          |
| <i>Geranium sp.</i>            | Cranes-bill sp.     |
| <i>Hedera helix</i>            | Ivy                 |
| <i>Mosses sp.</i>              | Mosses sp.          |
| <i>Myosotis ramosissima</i>    | Early forget-me-not |
| <i>Plantago lanceolata</i>     | Ribwort plantain    |
| <i>Ranunculus repens</i>       | Creeping buttercup  |
| <i>Rumex obtusifolius</i>      | Broad-leaved dock   |
| <i>Taraxacum agg.</i>          | Dandelion           |

### Species present in areas of amenity grassland

| Scientific name                | Common name            |
|--------------------------------|------------------------|
| <i>Achillea millefolium</i>    | Yarrow                 |
| <i>Bellis perennis</i>         | Daisy                  |
| <i>Capsella bursa-pastoris</i> | Shepherd's-purse       |
| <i>Chenopodium album</i>       | Fat hen                |
| <i>Dactylis glomerata</i>      | Cock's-foot            |
| <i>Festuca sp.</i>             | Fescue sp.             |
| <i>Picris hieracioides</i>     | Bristly ox-tongue      |
| <i>Plantago lanceolata</i>     | Ribwort plantain       |
| <i>Plantago major</i>          | Greater plantain       |
| <i>Ranunculus repens</i>       | Creeping buttercup     |
| <i>Senecio jacobaea</i>        | Common ragwort         |
| <i>Taraxacum agg.</i>          | Dandelion              |
| <i>Trifolium repens</i>        | White clover           |
| <i>Veronica serpyllifolia</i>  | Thyme-leaved speedwell |
| <i>Viburnum opulus</i>         | Gelder-rose            |

### Species present in areas of ephemeral vegetation

| Scientific name            | Common name       |
|----------------------------|-------------------|
| <i>Centaurea nigra</i>     | Common knapweed   |
| <i>Epilobium sp.</i>       | Willowherb sp.    |
| <i>Medicago lupulina</i>   | Black medick      |
| <i>Mosses sp.</i>          | Mosses sp.        |
| <i>Picris hieracioides</i> | Bristly ox-tongue |
| <i>Taraxacum agg.</i>      | Dandelion         |

\* The abundance of all recorded botanical species identified in potential Biodiversity Action Plan Priority habitats was assessed using the DAFOR scale. The DAFOR scale is a broad interpretive assessment whereby the surveyor assigns one of the following categories to the abundance of the species; Dominant, Abundant, Frequent, Occasional or Rare.

N.B. These species lists represent those species identified during the survey. Those species which were not in growth or could not be identified due to the growth stage are not included. Exotic species (such as garden escapes) may also have been omitted from the above lists. However, it is considered that the information gathered during the survey was sufficient to provide an accurate assessment of the site.

## **Appendix D: Photographic Plates**



**Plates 1a & 1b: View of Building 2 (TN1) with potential access points for bats**



**Plate 2: View of the southern boundary of the site showing scrub and scattered mature trees (TN2)**



**Plate 3: View of small stand of cotoneaster sp. (TN4)**



**Plate 4: View of rubble pile located adjacent the northern boundary of the site**



**Plate 5: View of plantation woodland and associated bund (TN6) adjacent the eastern boundary of the site**



**Plate 6: View of poor semi-improved grassland**



**Plate 7: View of amenity grassland and introduced shrub adjacent Hugmore Lane**



**Plate 8: View of Building 1 (left) and Building 2 (right) with associated hard-standing**

## **Appendix E: Legislation**

| Species/Habitat       | Protected by:                                                                                                                                                                                                                                                            | UK BAP               | Local BAP            |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Badger                | <i>Protection of Badgers Act, 1992</i>                                                                                                                                                                                                                                   | No                   | No                   |
| Barn owl              | Schedule 1, Part 1 of the <i>Wildlife and Countryside Act, 1981</i>                                                                                                                                                                                                      | No                   | Yes                  |
| Bats                  | Regulation 41 of <i>The Conservation of Habitats and Species Regulations, 2010</i><br><br>Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended)<br><br>Section 40 of the <i>Natural Environment and Rural Communities (NERC) Act, 2006</i>             | Dependent on species | Dependent on species |
| Butterflies & Moths   | Section 42 of the <i>Natural Environment and Rural Communities (NERC) Act, 2006</i>                                                                                                                                                                                      | Dependent on species | Dependent on species |
| Cotoneaster           | Section 14 of the <i>Wildlife and Countryside Act, 1981</i> (as amended)                                                                                                                                                                                                 | No                   | No                   |
| Great crested newt    | Regulation 41 of <i>The Conservation of Habitats and Species (Amendment) Regulations, 2012</i><br><br>Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended)<br><br>Section 42 of the <i>Natural Environment and Rural Communities (NERC) Act, 2006</i> | Yes                  | Yes                  |
| Nesting birds         | Section 1 of the <i>Wildlife and Countryside Act, 1981</i>                                                                                                                                                                                                               | Dependent on species | Dependent on species |
| Polecat               | Section 42 of the <i>Natural Environment and Rural Communities (NERC) Act, 2006</i><br><br>Section 6 of the <i>Wildlife and Countryside Act, 1981</i> (as amended)                                                                                                       | Yes                  | Yes                  |
| 'Widespread' reptiles | Provisions 1 and 5 of Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended)<br><br>Section 42 of the <i>Natural Environment and Rural Communities (NERC) Act, 2006</i>                                                                                 | Yes                  | Dependent on species |

### ***The Conservation of Habitats and Species Regulations, 2010***

European protected species are listed on Schedule 2 of the *Conservation of Habitats and Species Regulations 2010*. Those species listed on Schedule 2 are protected under Regulation 41, which refers to the protection of wild animals of a European Protected Species. The following is a summary of the offences listed under Regulation 41, however, the *Conservation Regulations* should always be referred to for the exact and current wording:

Under Regulation 41 of the *Conservation of Habitats and Species Regulations, 2010* it is an offence to –

- deliberately capture or kill a wild animal of a European protected species;
- deliberately disturb wild animals, in particular any disturbance which is likely:
  - o to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or

- o to impair their ability, in the case of animals of a hibernating or migratory species, to hibernate or migrate;
- o to affect significantly the local distribution or abundance of the species to which they belong
- deliberately take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.
- keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

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

British protected species of animal are listed on Schedule 5 of the *Wildlife and Countryside Act, 1981* (as amended). Those species listed on Schedule 5 are protected under Part 1, Section 9, which refers to the protection of certain wild animals. The following is a summary of the offences listed under Section 9; however the Act should always be referred to for the exact and current wording:

Under Section 9 of the *Wildlife and Countryside Act, 1981* (as amended) if any person –

- intentionally kills, injures or takes any wild animal included in Schedule 5;
- has in his possession or control any live or dead wild animal included in Schedule 5 or any part of, or anything derived from such an animal;
- intentionally or recklessly damages or destroys, or obstructs access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection;
- disturbs any such animal included in Schedule 5 while it is occupying a structure or place which it uses for that purpose;
- sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in Schedule 5, or any part of, or anything derived from, such an animal; or,
- publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things, he shall be guilty of an offence.

This legislation applies to all life stages of GCN. Heavy fines (up to £5,000 per incident) can be imposed for **each** offence, and a prison sentence of up to 6 months for each offence can be given to any person found guilty of an offence. In certain circumstances, any machine, tool or implement involved in an illegal act can also be seized.

Natural England (NE) issue licences for the disturbance of European Protected Species including GCN, certain criteria must be met before a licence can be issued to enable otherwise prohibited works to proceed. Such criteria may be subject to change without notice. For further information please visit [www.naturalengland.org.uk](http://www.naturalengland.org.uk)

### ***Wildlife and Countryside Act, 1981 (as amended) - Birds***

All species of wild bird, their nests and eggs are protected under Section 1 of the *Wildlife and Countryside Act, 1981* (as amended); therefore surveys are required to check for their presence where they are likely to be disturbed for any reason.

The following is a summary of the offences listed under Section 1; however the Act should always be referred to for the exact and current wording:

Under Section 1 of the *Wildlife and Countryside Act*, 1981 (as amended), if any person:

- Intentionally kills, injures or takes any wild bird;
- Intentionally takes, damages or destroys the nest of any wild bird while that nest is in use or being built;
- Intentionally takes or destroys an egg or any wild bird, he shall be guilty of an offence;
- Has in his possession or control any live or dead wild bird or any part of, or anything derived from, such a bird; or
- Has in his possession or control an egg of any wild bird or any part of such an egg, he shall be guilty of an offence.

Schedule 1 (Part 1 and Part 2) of the *Wildlife and Countryside Act*, 1981 (as amended) lists bird species that receive special attention under Section 1. Any person convicted of an offence listed above, in respect of a bird included in Schedule 1 or any part of, or anything derived from, such a bird; the nest of such a bird; or an egg of such a bird or any part of such an egg, shall be liable to a special penalty.

Also, if any person intentionally or recklessly 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 disturbs dependent young of such a bird, he shall be guilty of an offence and liable to a special penalty.

Schedules 1, 2, 3 and 4 of the *Wildlife and Countryside Act*, 1981 (as amended) list different species of bird and different Parts of Section 1 of the Act refer to different offences which may be committed in relation to the varying Schedules. The following is a summary of the type of protection offered to species of wild bird listed on each of the Schedules, however the Act itself should always be referred to for the exact and current wording and full species lists:

Schedule 1: Birds which are protected by special penalties:

Part 1: At all times.

Part 2: During the close season.

Schedule 2: Birds which may be killed or taken:

Part 1: Outside the close season.

Part 2: By authorised persons at all times.

Schedule 3: Birds which may be sold:

Part 1: Alive at all times if ringed and bred in captivity.

Part 2: Dead at all times.

Part 3: Dead from 1<sup>st</sup> September to 28<sup>th</sup> February.

Schedule 4: Birds which must be registered and ringed if kept in captivity.

### **The Natural Environment and Rural Communities (NERC) Act, 2006 (as amended)**

The following is a summary of the *Natural Environment and Rural Communities (NERC)*, Act, 2006 (as amended), the *NERC Act* itself should be referred to for the exact and current wording:

- Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity;
- In complying with the above, a Minister of the Crown, government department or the National Assembly for Wales must in particular have regard to the United Nations Environmental Programme Convention on Biological Diversity of 1992;
- Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

## **The *Protection of Badgers Act, 1992***

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The following is a summary of the offences contained in the Act; however the *Protection of Badgers Act, 1992* itself should always be referred to for the exact and current wording.

Under the *Protection of Badgers Act, 1992* a person is guilty of an offence if, except as permitted by or under this Act he:

- wilfully kills, injures or takes, or attempts to kill, injure or take, a badger;
- has in his possession or under his control any dead badger or any part of, or anything derived from, a dead badger;
- cruelly ill-treats a badger;
- uses badger tongs in the course of killing or taking, or attempting to kill or take, a badger;
- digs for a badger; or,
- sells a live badger or offers one for sale or has a live badger in his possession or control.

A person is also guilty of committing an offence under the *Protection of Badgers Act, 1992* if he intentionally or recklessly interferes with a badger sett by doing any of the following things:

- damaging a badger sett or any part of it;
- destroying a badger sett;
- obstructing access to, or any entrance of, a badger sett;
- causing a dog to enter a badger sett; or,
- disturbing a badger when it is occupying a badger sett,

The definition of a badger sett within the meaning of the 1992 Act is given as “any structure or place, which displays signs indicating current use by a badger”. ‘Current’ is not defined in the Act, and may be open to interpretation. Natural England indicates that a sett is in ‘current’ use if it has been occupied at all over the previous 12 months. Whatever the interpretation of ‘current use’ however, it is important to note that a sett is protected whether or not there is a badger actually in residence at the time of inspection.

Natural England Guidelines state that work that disturbs badgers or their setts is illegal if not carried out under licence. Badgers could be disturbed by work near their sett even if there is no direct interference or damage to the sett itself, for example, using very heavy machinery within 30 metres of an active sett. Lighter machinery (particularly for any digging operation) within 20 metres, or light work such as hand digging or scrub clearance within 10 metres of an active sett, all require a licence. There are some activities which can cause disturbance at a far greater distance (such as using explosives or pile driving) and should therefore be given individual consideration. Certain criteria must be met before a licence can be issued to enable otherwise prohibited works to proceed. Such criteria may be subject to change without notice.

Timing of operations should also be considered. If required, site-specific badger disturbance licences are normally only issued between the months of July and October so as to avoid the badger’s breeding season. This aspect should be borne in mind when assessing any possible constraints upon the development timetable.

## **Appendix F: List of Wildlife Friendly Plants**

## LIST OF NATIVE & WILDLIFE FRIENDLY PLANTS

**Important note:** It is entirely the responsibility of the client to ensure that any species chosen from the list provided is suitable for the specific attributes of the location.

| Species                                       | Height/Spread | Colours                                                                                             | Flowers/Berries                                                   | Wildlife benefits                                                                                                                                | Plant conditions and notes                                    | Deciduous or Evergreen |
|-----------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------|
| <b>Native Trees</b>                           |               |                                                                                                     |                                                                   |                                                                                                                                                  |                                                               |                        |
| <b>Field Maple</b><br><i>Acer campestre</i>   | to 25m        | Leaves: Green then amber in Autumn.<br>Flowers: Yellow/green.<br>Seeds: Green then brown with wings | Flowers May to June                                               | 51 species of insects/mites and 24 species of lepidoptera. Fruits eaten by small mammals                                                         | Calcareous or clay soils preferably in full sun               | Deciduous              |
| <b>Alder</b><br><i>Alnus glutinosa</i>        | 6 - 15m       | Leaves: Green, Catkins: Yellow/brown, Fruits: Cone-like, small and brown                            | Catkins in March to April                                         | 141 species of insects/mites and 71 species of lepidoptera. Seeds are good for birds such as siskins                                             | Damp soil. Plant hardwood cuttings in the open in late autumn | Deciduous              |
| <b>Silver Birch</b><br><i>Betula pendula</i>  | to 18m        | Leaves: Green turning yellow in Autumn, Catkins: Yellow/brown then seeding, Bark: White             | Catkins open in April and break up in winter releasing it's seeds | Excellent for insects and to attract inset eating birds. Best tree for moth larvae. Catkins good food source for birds such as redpolls and tits | Dry acid best.                                                | Deciduous              |
| <b>Downy Birch</b><br><i>Betula pubescens</i> | to 24m        | Leaves: Green turning yellow in Autumn, Catkins: Yellow/brown then seeding, Bark: White             | Catkins open in April and break up in winter releasing it's seeds | Excellent for insects and to attract inset eating birds. Catkins good food source for birds                                                      | Favours wetter more peaty soil                                | Deciduous              |

|                                             |                     |                                                                                                                           |                                                      |                                                                                                                                  |                                                                                                                                              |                                                    |
|---------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>Hornbeam</b><br><i>Carpinus betulus</i>  | to 24m              | Leaves: Green, Catkins: Green/crimson then seeding                                                                        | Flowers in May                                       | 51 species of insects/mites and 32 species of lepidoptera. Seeds for birds. Can provide dense nesting cover                      | Woods and copses on clay soils, will tolerate shade. Sow seeds or fruits in spring                                                           | Deciduous                                          |
| <b>Hazel</b><br><i>Corylus avellana</i>     | to 10m              | Leaves: Green, Flowers: Long Yellow/Crimson tassels. Seeds: Brown nuts                                                    | Flowers in February                                  | 106 species of insects/mites and 68 species of lepidoptera. Nuts eaten by birds and mammals i.e. squirrels, mice and jays        | Hedgerows, scrub and woodland in well-drained soil. Full sun or light shade preferable. Remove and plant rooted suckers or offsets in autumn | Deciduous                                          |
| <b>Beech</b><br><i>Fagus sylvatica</i>      | to 46m              | Leaves: Green then orange to red/brown in Autumn, Flowers: Green/white. Seeds: Brown nuts encased in a brown husk         | Flowers March to April                               | 98 species of insects/mites and 51 species of lepidoptera. The masts are eaten by birds and mammals including wood mice and jays | Well-drained soils. Can survive in shallow soil. Sow seeds or fruits in autumn                                                               | Deciduous. Can hold dead leaves through the winter |
| <b>Ash</b><br><i>Fraxinus excelsior</i>     | to 37m              | Leaves: Green, Flowers: Green/Purple prior to the leaves. Seeds: Green single seeds in bunches with a long wing           | Flowers: April-May                                   | 68 species of insects/mites and 32 species of lepidoptera. Seeds eaten by birds and mammals                                      | Will survive on most soils with reasonable light. Sow seeds or fruits in autumn                                                              | Deciduous                                          |
| <b>Juniper</b><br><i>Juniperus communis</i> | Shrub or tree to 7m | Leaves: Spiky Green needles, Flowers: Small green to yellow flowers, Berries: Green ripening to purple in the second year | Flowers May to June. Berries take two years to ripen | 32 species of insects/mites and 14 species of lepidoptera                                                                        | Well-drained limestone and acid sandstone                                                                                                    | Evergreen                                          |

|                                              |                      |                                                                                                          |                                               |                                                                                                                                              |                                                                                                                                                |           |
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| <b>Crab Apple</b><br><i>Malus sylvestris</i> | to 10m               | Leaves: Green,<br>Flowers: White and pink. Fruits: Green/yellow/red apples                               | Flowers: April to May. Fruits ripen in Autumn | 118 species of insects/mites and 76 species of lepidoptera. Fruits are eagerly consumed by birds and mammals despite its bitter taste        | Well-drained soil in full sun                                                                                                                  | Deciduous |
| <b>Scots Pine</b><br><i>Pinus sylvestris</i> | to 36m               | Leaves: Green needles, Flowers: Yellow and crimson, Cones: Short and brown                               |                                               | 172 species of insects/mites and 36 species of lepidoptera. Cones are a valuable food source for birds and other mammals                     | Prefers sandy well-drained soil in full sun                                                                                                    | Evergreen |
| <b>Black Poplar</b><br><i>Populus nigra</i>  | 33m                  | Leaves: Green turning yellow in Autumn, Flowers: Green and crimson catkins, turning fluffy when fruiting | Catkins produced in March                     | 153 species of insects/mites and 69 species of lepidoptera found within all the poplar species. Good for larger moth species i.e. Hawk moths | Fertile soil near water. Remove and plant rooted suckers or offsets in autumn. Reduced in numbers due to easy hybridisation with other poplars | Deciduous |
| <b>Aspen</b><br><i>Populus tremula</i>       | to 24m               | Leaves: Green turning yellow in Autumn, Flowers: Green and brown catkins, turning fluffy when fruiting   | Catkins arrive in March and set seed in May   | Good for invertebrates and birds. Food plant of the hairstreak butterfly                                                                     | Will survive on most soils with full sun or partial shade                                                                                      | Deciduous |
| <b>Wild Cherry</b><br><i>Prunus avium</i>    | 9 - 12m              | Leaves: Green turning crimson in Autumn, Flowers: White, Berries: Bright red                             | Flowers: April, Berries: July                 | Birds feed on the cherries                                                                                                                   | Prefers fertile soil, will tolerate some shade                                                                                                 | Deciduous |
| <b>Bird Cherry</b><br><i>Prunus padus</i>    | Shrub or tree to 19m | Leaves: Green, Flowers: White, Berries: Black cherries                                                   | Flowers in May                                | 9 species of lepidoptera. Berries eaten by birds                                                                                             | Woods and scrub. Well-drained soil with full sun or light shading                                                                              | Deciduous |

|                                                                 |                                  |                                                                                                                                                    |                                                                                           |                                                                                                                                                                    |                                                                                                                                   |           |
|-----------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Oaks</b> (native)<br><i>Quercus spp.</i>                     | to 42m                           | Leaves: Green,<br>Flowers: Slim yellow<br>catkins, Seeds: Green<br>acorns turning brown<br>when ready to fall                                      | Flowers in May.<br>Acorns produced in<br>Autumn.                                          | 423 species of insects/mites<br>and 193 species of<br>lepidoptera. Acorns eaten<br>by a variety of birds and<br>mammals. Very important<br>for insect eating birds | Variety of soils with<br>reasonable depth and<br>preferably in full sun,<br>below 300m altitude. Sow<br>seeds or fruits in autumn | Deciduous |
| <b>Willows</b><br><i>Salix spp.</i>                             | to 25m<br>(species<br>dependent) |                                                                                                                                                    | Flowers February to<br>March                                                              | 450 species of insects/mites<br>and 166 species of<br>lepidoptera                                                                                                  | Damp areas. Plant<br>hardwood cuttings in the<br>open in late autumn                                                              | Deciduous |
| <b>Goat Willow</b><br>aka 'pussy willow'<br><i>Salix caprea</i> | Shrubby tree<br>to 10m           | Leaves: Oval, dark<br>grey/green on top with a<br>hairy underside,<br>Flowers; Green and<br>yellow short catkins<br>turning fluffy when<br>seeding | Flowers March to<br>April                                                                 | Early provider of pollen and<br>nectar for insects                                                                                                                 | Most soils as long as they<br>are at least slightly damp                                                                          | Deciduous |
| <b>Grey Willow</b><br><i>Salix cinerea</i>                      | Shrubby tree<br>to 6m            | Leaves: Grey/green on<br>top with a lighter hairy<br>underside, Flowers;<br>Yellow catkins turning<br>fluffy when seeding                          | Flowers March to<br>April                                                                 | Good for insects and birds                                                                                                                                         | Most soils as long as they<br>are at least slightly damp                                                                          | Deciduous |
| <b>Crack Willow</b><br><i>Salix fragilis</i>                    | Can reach<br>25m                 | Leaves: Long, shiny<br>green on top with a<br>grey/green underside,<br>Flowers; Green and<br>yellow catkins turning<br>fluffy when seeding         | Flowers in April with<br>the catkins<br>appearing in May<br>and ripening in the<br>summer | Good for insects and birds                                                                                                                                         | Most soils as long as they<br>are at least slightly damp                                                                          | Deciduous |
| <b>Bay Willow</b><br><i>Salix pentandra</i>                     | to 10m                           | Leaves: Long, shiny<br>green on top with a<br>grey/green underside,<br>Flowers: Yellowish<br>catkins turning fluffy                                | Flowers May to June                                                                       | Good for insects and birds                                                                                                                                         | Wet ground by water                                                                                                               | Deciduous |

|                                                      |           |                                                                                                                                                                                                |                                                  |                                                                                                                                       |                                                            |           |
|------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------|
|                                                      |           | when seeding                                                                                                                                                                                   |                                                  |                                                                                                                                       |                                                            |           |
| <b>Elderberry</b><br><i>Sambucus nigra</i>           | to 10m    | Leaves: Green,<br>Flowers: Small creamy<br>white flowers in large<br>numbers. Berries: Dark<br>purple/black in bunches                                                                         | Flowers May to June                              | Berries for birds and nectar<br>for insects                                                                                           | Sun or partial shade                                       | Deciduous |
| <b>Whitebeam</b><br><i>Sorbus aria</i>               | 10 to 24m | Leaves: Green with<br>white hairy underside<br>turning yellow/crimson<br>in Autumn, Flowers:<br>White, Berries: Green<br>ripening to bright red                                                | Flowers: May                                     | Flowers attract insects and<br>the fruits are eaten by birds                                                                          | Prefers calcareous soil                                    | Deciduous |
| <b>Rowan</b><br><i>Sorbus aucuparia</i>              | 18m       | Leaves: Pinnate green<br>leaves turning crimson<br>in Autumn, Flowers:<br>Small white flowers in<br>clusters, Berries: Bright<br>red                                                           | Flowers in May.<br>Produces berries in<br>autumn | 58 species of insects/mites<br>and 28 species of<br>lepidoptera. The ripe berries<br>attract birds such as<br>redwings and fieldfares | Will tolerate most soils<br>apart from very heavy<br>soils | Deciduous |
| <b>Wild Service Tree</b><br><i>Sorbus torminalis</i> | to 20m    | Leaves: Shiny green<br>leaves with a lighter<br>coloured underside,<br>turning purple/red in<br>Autumn, Flowers:<br>Creamy white in<br>clusters, Seeds: Brown<br>speckled seeds in<br>clusters | Flowers: May or<br>June Fruit:<br>September      | Good for insects. Fruits<br>eaten by birds                                                                                            | Withstands shade. Prefers<br>clay and limestone soil       | Deciduous |

|                                             |        |                                                                                                                                                          |                                                                                     |                                                                                                |                                                                                                                                                                      |           |
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| <b>Lime</b><br><i>Tilia europaea</i>        | to 46m | Leaves: Green heart-shaped leaves with slightly hairy underside, Flowers: Greenish/yellow flowers, Seeds: Small round and hairy with a grey-brown colour | Flowers June to July                                                                | 57 species of insects/mites and 31 species of lepidoptera. The nectar is highly sought by bees | Needs well-drained soil with full or partial sun                                                                                                                     | Deciduous |
| <b>Wych Elm</b><br><i>Ulmus glabra</i>      | to 37m | Leaves: Green turning yellow in autumn , Flowers: very small purplish flowers, Seeds: Circular winged fruits with the seed in the centre                 | Flowers produced in spring prior to the leaves, with winged fruits produced in July | Good tree for insects and birds                                                                | Full sun or light shade on most soils especially limestone. This species is less susceptible to Dutch elm disease                                                    | Deciduous |
| <b>Dutch Elm</b><br><i>Ulmus hollandica</i> | to 32m | Leaves: Green, Seeds: Circular winged fruits with the seed in the centre                                                                                 | Winged fruits produced in July                                                      | Good tree for insects and birds                                                                | A native tree which has occurred naturally as a hybridisation between two other elms. Full sun or light shade. This species is less susceptible to Dutch elm disease | Deciduous |
| <b>English Elm</b><br><i>Ulmus procera</i>  | to 33m | Leaves: Green, Flowers: Small crimson flowers, Seeds: Circular winged fruits with the seed in the centre                                                 | Crimson flowers produced in spring with winged fruits produced in July              | 124 species of insects/mites and 24 species of lepidoptera are associated with elm trees       | Full sun or light shade. 1 in 5 trees have caught Dutch elm disease to which English elms are susceptible                                                            | Deciduous |

| Species                                         | Height/Spread | Colours                                                                                         | Flowers/Berries                                                                                     | Wildlife benefits                                                                                                                                            | Plant conditions and notes                                              | Deciduous or Evergreen |
|-------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------|
| <b>Introduced Trees</b>                         |               |                                                                                                 |                                                                                                     |                                                                                                                                                              |                                                                         |                        |
| <b>Sweet Chestnut</b><br><i>Castanea sativa</i> | to 35m        | Leaves: Green,<br>Flowers: Long yellow tassels. Seeds: Brown nuts encased in a green spiky husk | Flowers July. Seeds produced in autumn decreasing in size the further north the plants are situated | 11 species of insects/mites and 1 species of lepidoptera. Seeds eaten by a variety of mammals                                                                | Well-drained soil, in full or partial sun. Sow seeds or fruit in spring | Deciduous              |
| <b>European Larch</b><br><i>Larix decidua</i>   | to 46m        | Leaves: light green needles, Flowers Yellow/dull-red small globes, Cones: Light brown           | Spring                                                                                              | 38 species of insects/mites and 15 species of lepidoptera. Cones provide food for tits and finches                                                           | Likes plenty of space in full sun                                       | Deciduous              |
| <b>Magnolia</b><br><i>Liriodendron</i>          |               |                                                                                                 |                                                                                                     | Early source of nectar for insects                                                                                                                           |                                                                         |                        |
| <b>Apple</b><br><i>Malus domestica</i>          | to 11m        | Leaves: Green,<br>Flowers: Deep pink.<br>Fruits: Reddish-purple                                 | Flowers: April to May. Fruits ripen in Autumn.                                                      | Good for invertebrates. Fruits are eagerly consumed by birds and mammals                                                                                     | Well-drained soil in full sun                                           | Deciduous              |
| <b>Purple Crab</b><br><i>Malus purpurea</i>     | to 10m        | Leaves: Green,<br>Flowers: White and pink. Fruits: Green/yellow/red apples                      | Flowers: April to May. Fruits ripen in Autumn                                                       | Good for invertebrates. Fruits are eagerly consumed by birds and mammals                                                                                     | Well-drained soil in full sun                                           | Deciduous              |
| <b>Norway Spruce</b><br><i>Picea abies</i>      | to 46m        | Leaves: Green needles, Flowers: Yellow and pink, Cones: Long and brown                          | Flowers open in May. Cones ripen in autumn                                                          | 70 species of insects/mites and 13 species of lepidoptera. The cones are eaten by birds and mammals which include crossbills, treecreepers and red squirrels | Any reasonable soil, preferably in good sun                             | Evergreen              |

|                                             |        |                                                                                                               |                                                |                                                                                       |                                                                                                                                                             |           |
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| <b>White Poplar</b><br><i>Populus alba</i>  | 24m    | Leaves: Dark green upper with pale hairy underside, Flowers: Green catkins, turning fluffy when fruiting      | Catkins produced in March                      | Good for invertebrates and birds especially larger moth species                       | Full sun or partial shade. Remove and plant rooted suckers or offsets in autumn. Can tolerate pollution well, but the roots can damage pipelines and paving | Deciduous |
| <b>Wild Plum</b><br><i>Prunus domestica</i> | to 8m  | Leaves: Green, Flowers: White, Fruits: Small purple plums                                                     | Flowers: March to May. Fruits ripen in Autumn  | Nectar and fruits for invertebrates. Fruits are eagerly consumed by birds and mammals | Well-drained soil in full sun                                                                                                                               | Deciduous |
| <b>Peach</b><br><i>Prunus persica</i>       | 6m     | Leaves: Dark green, Flowers: Deep pink, Fruits: Usual peach                                                   | Flowers: April to May. Fruits ripen in Autumn. | Nectar and fruits for invertebrates. Fruits are eagerly consumed by birds and mammals | Well-drained soil in full sun                                                                                                                               | Deciduous |
| <b>Pear</b><br><i>Pyrus communis</i>        | to 15m | Leaves: Dark glossy green, Flowers: White, Fruits Yellow-green to brown                                       | Flowers: April to May. Fruits ripen in Autumn. | Good for invertebrates. Fruits are eagerly consumed by birds and mammals              | Well-drained soil in full sun                                                                                                                               | Deciduous |
| <b>Wild Pear</b><br><i>Pyrus pyraeaster</i> | to 15m | Leaves: Dark glossy green, Flowers: White, Fruits Yellow-red to brown, 1-4cm. The tree/shrub is usually spiny | Flowers: April to May. Fruits ripen in Autumn  | Good for invertebrates. Fruits are eagerly consumed by birds and mammals              | Well-drained soil in full sun                                                                                                                               | Deciduous |

| Native Shrubs                                |          |                                                                                                                                           |                                                                    |                                                                                                                                                                                          |                                                                                                                                                       |                |
|----------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Box</b><br><i>Buxus sempervirens</i>      | to 3m    | Leaves: Small, dark green and glossy, Flowers: Small green/yellow, Seeds: Black encased in blue green capsules turning brown in September | Flowers April to May                                               | Provides good nesting cover and winter roosting cover for birds                                                                                                                          | Calcareous soils in full sun or partial shade                                                                                                         | Evergreen      |
| <b>Heather</b><br><i>Calluna vulgaris</i>    | 50-100cm | Leaves: Green and minute, Flowers: Pink/purple, Seeds: Very small replacing flowers                                                       | Flowers in July to November                                        | Good for invertebrates with a late supply of nectar                                                                                                                                      | Well-drained acid soil in full sun                                                                                                                    | Evergreen      |
| <b>Dogwood</b><br><i>Cornus sanguinea</i>    | to 4m    | Leaves: Green and hairy turning crimson in Autumn, Flowers: Greenish white in groups, Berries: Black in clusters                          | Flowers in June. Produces bitter black berries in August-September | 17 species of lepidoptera. Larval food plant of the green hairstreak butterfly. Flowers produce an unpleasant smell which is attractive to insects. Some birds manage to eat the berries | Woods and scrub on limestone or base rich clays                                                                                                       | Deciduous      |
| <b>Hawthorn</b><br><i>Crataegus monogyna</i> | 6m       | Leaves: Small and green, Flowers: Bright yellow, Seeds: In green pods                                                                     | Flowers: White – mid May. Berries: Red/orange in Autumn            | Nectar. Berries good food source for thrushes, redwings and fieldfares. Good nesting if dense. Excellent for moth larvae                                                                 | Any soil                                                                                                                                              | Deciduous      |
| <b>Broom</b><br><i>Cytisus scoparius</i>     | 2.5m     | Leaves: Small green and deeply lobed, Flowers: White, Berries: Red                                                                        | Yellow flowers April-June                                          | Good for 39 species of lepidoptera. Food plant of the hairstreak butterfly                                                                                                               | Calcareous, heathland, sandy banks, open woodland and rough ground. Well drained soil in full sun. Plant semi-ripe cuttings in a cold frame in summer | Semi-evergreen |

|                                                           |             |                                                                                                                                        |                                                   |                                                                                                                             |                                                                                                                             |           |
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| <b>Spurge Laurel</b><br><i>Daphne laureola</i>            | 1m          | Leaves: Light green,<br>Flowers: White/green,<br>Berries: Black                                                                        | Flowers in February<br>to April                   | Early source of nectar for<br>insects. Berries for birds<br>which are poisonous to<br>man                                   | Well-drained humus-rich or<br>chalky soil in full sun or deep<br>shade                                                      | Evergreen |
| <b>Mezereon</b><br><i>Daphne mezereum</i>                 | 1m          | Leaves: Light green<br>with cream tinged<br>edges, Flowers: Bright<br>pink, Berries: Red                                               | Flowers in February<br>to April                   | Early source of nectar for<br>insects                                                                                       | Well-drained humus-rich soil<br>in full sun or light shade                                                                  | Deciduous |
| <b>Heath 'Bell'</b><br><i>Erica cinerea</i>               | to 50cm     | Leaves: Green and<br>minute, Flowers:<br>Pink/purple, Seeds:<br>Very small replacing<br>flowers                                        | Flowers July to<br>August                         | Provides nectar for<br>invertebrates                                                                                        | Well-drained acid soil in full<br>sun                                                                                       | Evergreen |
| <b>Heath 'Cross-<br/>leaved'</b><br><i>Erica tetralix</i> | to 50cm     | Leaves: Green and<br>minute, Flowers:<br>Pink/purple, Seeds:<br>Very small replacing<br>flowers                                        | Flowers July to<br>August                         | Provides nectar for<br>invertebrates                                                                                        | Damp acid soil in full sun                                                                                                  | Evergreen |
| <b>Spindle</b><br><i>Euonymus<br/>europaeus</i>           | 5m (8m max) | Leaves: Light green<br>turning to crimson in<br>Autumn, Flowers:<br>Greenish yellow,<br>Seeds: encased in a<br>four lobed pink capsule | Fruit October to<br>December                      | 10 species of lepidoptera.<br>Nectar is good for insects.<br>Berries are good for birds<br>but induce vomiting in<br>people | Woods, hedgerows and<br>scrub on calcareous or base<br>rich clays. Plant semi-ripe<br>cuttings in a cold frame in<br>summer | Deciduous |
| <b>Alder Buckthorn</b><br><i>Frangula alnus</i>           | 2.5m        | Leaves: Shiny green,<br>Flowers: very small<br>greenish flowers,<br>Berries: Green berries<br>turning red then purple                  | Flowers: Early<br>summer. Berries:<br>Autumn      | Berries for birds. Important<br>food plant for brimstone<br>butterfly larvae                                                | Damp acidic soil/peat                                                                                                       | Deciduous |
| <b>Tutsan</b><br><i>Hypericum<br/>androsaemum</i>         | 80cm        | Leaves: Green turning<br>red in autumn, Flowers:<br>Yellow, Berries: Black                                                             | Flowers June to<br>October followed by<br>berries | Flowers attract insects<br>especially bees. Berries<br>are eaten by birds and<br>small mammals                              | Full sun or light shade in<br>damp soil. Plant semi-ripe<br>cuttings in a cold frame in<br>summer                           | Deciduous |

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| <b>Holly</b><br><i>Ilex aquifolium</i>                   | 300 x 150+<br>cm | Leaves: spiky glossy green, Flowers: Small pink/white, Berries: Bright red     | Flowers: May. Berries: (only on female trees) October to December | Berries good for birds and small mammals. Caterpillars of the holly blue butterfly feed on the leaves. Holly leaf miner provides winter food for birds  | Not wet. Layer stems in spring. Need male and female plants near each other to produce berries        | Evergreen                                 |
| <b>Privet</b><br><i>Ligustrum vulgare</i>                | 3m               | Leaves: Green, Flowers: White, Berries: Small black berries                    | Flowers: July                                                     | 24 species of insects/mites, nectar for the butterflies. Berries eaten by birds                                                                         | Hedgerows and scrub, especially on base rich soil. Plant hardwood cuttings in the open in late autumn | Deciduous or semi-evergreen in mild areas |
| <b>Shrubby Cinquefoil</b><br><i>Potentilla fruticosa</i> | 1m               | Leaves: Green, Flowers: Yellow                                                 | Flowers May to September                                          | Nectar source for bees and butterflies                                                                                                                  | Well-drained soil in full sun or light shade. Semi-ripe cuttings in a cold frame in summer            | Deciduous                                 |
| <b>Blackthorn</b><br><i>Prunus spinosa</i>               | 4m               | Leaves: Green, Flowers: White, Berries: Blue/black                             | Flowers: spring                                                   | Good for nesting birds if grown as thicket or in hedge. Rich in insects. Fruit for birds. Black hairstreak butterfly lays its eggs mainly on blackthorn | Well-drained soil preferably in a sunny location                                                      | Deciduous                                 |
| <b>Buckthorn</b><br><i>Rhamnus catharticus</i>           | 5m               | Leaves: Yellow green, Flowers: Yellow/green, Berries: Black. Stems with spines | Flowers: May to June                                              | Larval food plant for brimstone butterfly                                                                                                               | Damp, peat or base-rich soils                                                                         | Deciduous                                 |
| <b>Dog Rose</b><br><i>Rosa canina</i>                    | 3 - 4m           | Leaves: Green , Flowers: Pink/white, Hips: Red                                 | Flowers: June to July. Hips: autumn                               | Provides nectar for bees and butterflies. Hips good for small birds and mammals                                                                         | Dislikes wet or exposed sites Can tolerate poor fertility                                             | Deciduous                                 |
| <b>Sweet Briar</b><br><i>Rosa rubiginosa</i>             | 240 x 240cm      | Leaves: Green , Flowers: Pink, Hips: Red/orange                                | Flowers: mid summer. Berries: autumn                              | Hips food source for small mammals and birds. Good nesting cover                                                                                        | Prefers sun and well drained soil                                                                     | Deciduous                                 |

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| <b>Raspberry</b><br><i>Rubus idaeus</i>          | 1.5 - 2.5m  | Leaves: Green with thorns on underside, Flowers White, Berries: Red, Stems also have thorns                                                                    | Flowers May to August with berries following    | Nectar source for bees and butterflies. Berries for birds and mammals                                                                                            | Any reasonable soil in full sun or partial shade                                                                                      | Deciduous shrub |
| <b>Gorse</b><br><i>Ulex europaeus</i>            | 2 - 2.5m    | Leaves: Thin and spiky, green in colour, Flowers: Yellow                                                                                                       | Autumn flowers, can flower throughout the year  | 29 species of insect. Provides good protection for birds nests frequently used by linnets, whinchats and stonechats.                                             | Sandy or peaty well-drained soil in full sun. Grassland, heathland and open woods. Plant semi-ripe cuttings in a cold frame in summer | Evergreen       |
| <b>Wayfaring Tree</b><br><i>Viburnum lantana</i> | 3m          | Leaves: Green, Flowers: Whitish yellow, Berries: Red then becoming black                                                                                       | Flowers in June to July                         | Berries for birds and nectar for insects                                                                                                                         | Most soils especially base rich                                                                                                       | Deciduous       |
| <b>Guelder Rose</b><br><i>Viburnum opulus</i>    | 300 x 250cm | Leaves: Green, Flowers: White, Berries: Bright red                                                                                                             | Flowers: May to June. Berries: autumn           | Nectar for insects, particularly hoverflies. Fruits for birds and small mammals, especially liked by woodmouse. Note: leaves, bark and berries are all poisonous | Plant semi-ripe cuttings in a cold frame in summer                                                                                    | Deciduous       |
| <b>Introduced Shrubs</b>                         |             |                                                                                                                                                                |                                                 |                                                                                                                                                                  |                                                                                                                                       |                 |
| <b>Juneberry</b><br><i>Amelanchier lamarkii</i>  | to 6m       | Leaves: Pink when unfolding, turning green then yellow-brown in Autumn, Flowers: White in large quantities, Berries: Round red fruits turning purple when ripe | Flowers April to May with berries in the summer | Nectar source for bees and butterflies. Berries for birds                                                                                                        | Full sun or partial shade on light acid soils                                                                                         | Deciduous       |

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| <b>Spotted Laurel</b><br><i>Aucuba japonica</i>          | 2 - 3m  | Leaves: Dark green with yellow speckles, leathery in texture, Flowers: Small and white, Berries: Green, ripening to red the following spring | Berries: October-January             | Berries for birds                                                                             | Sun or deep shade, all soils                                                                                                 | Evergreen |
| <b>Darwin's Barberry</b><br><i>Berberis darwinii</i>     | to 3m   | Leaves: Sharp holly-like green leaves, Flowers: Orange in small clusters, Berries: Blue berries in bunches, Stems: with spines               | Flowers in spring. Berries in autumn | Berries for birds and nectar for insects. Can provide good nesting cover for small passerines | Sun or light shade. Various propagation methods. Note: this shrub is a winter host for wheat rust - agricultural fungal pest | Evergreen |
| <b>Hooker's Barberry</b><br><i>Berberis hookeri</i>      | to 3m   | Leaves: Sharp green leaves, Flowers: Yellow in small clusters, Berries: Black berries in bunches, Stems: with spines                         | Flowers in spring. Berries in autumn | Berries for birds and nectar for insects. Can provide good nesting cover for small passerines | Sun or light shade. Various propagation methods. Note: this shrub is a winter host for wheat rust - agricultural fungal pest | Evergreen |
| <b>Hedge Barberry</b><br><i>Berberis stenophylla</i>     | to 3m   | Leaves: Small sharp green leaves, Flowers: Yellow in small clusters, Berries: Blue/black berries in bunches, Stems: with spines              | Flowers in spring. Berries in autumn | Berries for birds and nectar for insects. Can provide good nesting cover for small passerines | Sun or light shade. Various propagation methods. Note: this shrub is a winter host for wheat rust - agricultural fungal pest | Evergreen |
| <b>Thunberg's Barberry</b><br><i>Berberis thunbergii</i> | to 1.5m | Leaves: Bright red in Autumn, Flowers: Yellow in small clusters, Berries: Red berries in bunches, Stems: with spines                         | Flowers in spring. Berries in autumn | Berries for birds and nectar for insects. Can provide good nesting cover for small passerines | Sun or light shade. Various propagation methods. Note: this shrub is a winter host for wheat rust - agricultural fungal pest | Deciduous |

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| <b>Thunberg's Barberry</b><br><i>Berberis thunbergii</i><br>'Atropurpurea'      | to 2m                   | Leaves: Bronze leaves bright red in Autumn,<br>Flowers: Yellow in small clusters, Berries: Red berries in bunches,<br>Stems: with spines                                                     | Flowers in spring.<br>Berries in autumn | Berries for birds and nectar for insects. Can provide good nesting cover for small passerines                | Sun or light shade. Various propagation methods. Note: this shrub is a winter host for wheat rust - agricultural fungal pest                       | Deciduous |
| <b>Thunberg's Barberry</b><br><i>Berberis thunbergii</i><br>'Atropurpurea Nana' | 60cm                    | Leaves: Bronze leaves bright red in Autumn,<br>Flowers: Yellow in small clusters, Berries: Red berries in bunches,<br>Stems: Almost spineless                                                | Flowers in spring.<br>Berries in autumn | Berries for birds and nectar for insects. Can provide good nesting cover for small passerines                | Sun or light shade. Various propagation methods. Note: this shrub is a winter host for wheat rust - agricultural fungal pest                       | Deciduous |
| <b>Barberry</b><br><i>Berberis vulgaris</i>                                     | to 3m                   | Leaves: Green leaves,<br>Flowers: Yellow in small clusters, Berries: Red berries in bunches,<br>Stems: with spines                                                                           | Flowers in spring.<br>Berries in autumn | Berries for birds and nectar for insects. Can provide good nesting cover for small passerines                | Sun or light shade. Various propagation methods. Note: this shrub is a winter host for wheat rust - agricultural fungal pest                       | Deciduous |
| <b>Alternate-Leaved Butterfly-Bush</b><br><i>Buddleia davidii</i>               | Willow like shrub to 8m | Leaves: Green ,<br>Flowers: Lilac found on long drooping stems covered in globular shaped flower bunches,<br>Seeds: Found in the flower heads which stay on the plant for most of the winter | Flowers July to September               | Nectar for bees and butterflies. The best bush available for butterflies especially if planted in a sun trap | Dryish soil in full sun or partial shade. Plant semi-ripe cuttings in a cold frame in summer or plant hardwood cuttings in the open in late autumn | Deciduous |

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| <b>Buddleia</b><br>(butterfly-bush)<br><i>Buddleia davidii</i> | 300 x 180cm | Leaves: Dark green above with a lighter hairier underside,<br>Flowers: Long spikes with a lavender colour,<br>Seeds: Found in the flower heads which stay on the plant for most of the winter         | Flowers July to September     | Nectar for bees and butterflies. The best bush available for butterflies especially if planted in a sun trap             | Dryish soil in full sun or partial shade. Plant semi-ripe cuttings in a cold frame in summer or plant hardwood cuttings in the open in late autumn | Deciduous                   |
| <b>Orange Ball Tree</b><br><i>Buddleia globosa</i>             | to 5m       | Leaves: Dark green above with a lighter hairier underside,<br>Flowers: Orange in a globular shape, Seeds: Found in the flower heads which stay on the plant for most of the winter                    | Flowers May to June           | Nectar for bees and butterflies                                                                                          | Dryish soil                                                                                                                                        | Deciduous to semi-evergreen |
| <b>Weyer's Butterfly-Bush</b><br><i>Buddleia weyeriana</i>     | 300 x 180cm | Leaves: Green,<br>Flowers: Yellow found on inflorescence which is interrupted with spaces slightly globular in shape, Seeds: Found in the flower heads which stay on the plant for most of the winter | Flowers May to June           | Nectar for bees and butterflies. Flowers slightly later than <i>davidii</i> attracting the butterflies from these bushes | Dryish soil in full sun or partial shade. Plant semi-ripe cuttings in a cold frame in summer or plant hardwood cuttings in the open in late autumn | Deciduous to semi-evergreen |
| <b>Blue Spiraea</b><br><i>Caryopteris clandonensis</i>         | 1m          | Leaves: Blue/green,<br>Flowers: Blue in clusters                                                                                                                                                      | Flowers, September to October | Provides a late source of pollen and nectar                                                                              | Requires well-drained soil in full sun                                                                                                             | Deciduous                   |
| <b>Californian Lilac</b><br><i>Ceanothus 'Autumnal Blue'</i>   | 1.8 x 1.8+m | Leaves: Green and shiny, Flowers: Purple in clusters                                                                                                                                                  | Flowers in July to October    | Nectar for bees and butterflies                                                                                          | Fertile soil in a sunny location                                                                                                                   | Evergreen                   |

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| <b>Californian Lilac</b><br><i>Ceanothus 'Gloire de Versailles'</i> | 1.8 x 1.8m                                            | Leaves: Dark green and shiny, Flowers: Light blue in clusters                                              | Flowers in July to October                                  | Nectar for bees and butterflies                                                                                                                   | Fertile soil in a sunny location                        | Deciduous |
| <b>Japanese Quince</b><br><i>Chaenomeles japonica</i>               | 1m                                                    | Leaves: Green , Flowers: Red, Fruits: Large, golden brown                                                  | Flowers March-May followed by fruits which ripen in October | Berries for birds and mammals                                                                                                                     | Full sun                                                | Deciduous |
| <b>Quince variety</b><br><i>Chaenomeles speciosa</i>                | Bush to 1.5m or train as a Climber to 3m x 30cm thick | Leaves: Green sparser then <i>japonica</i> , Flowers: depends on variety, Fruits: Large, golden brown      | Flowers March-May and the fruits ripen in October           | Nectar source for bees and butterflies. Berries for birds and mammals. Good for birds to nest in as branches are sturdy with spines to deter cats | Sun or shade                                            | Deciduous |
| <b>Smoke Bush</b><br><i>Cotinus coggygia</i>                        | 3m                                                    | Leaves: Green turning orange or red in autumn, Flowers: Light pink feathery flowers                        | Flowers June - July                                         | Good for bees and birds                                                                                                                           | Sandy infertile soil best, full sun preferred           | Deciduous |
| <b>Daphne</b><br><i>Daphne odora</i>                                | 1m                                                    | Leaves: Dark green, Flowers: Bright pink                                                                   | Flowers in February to April                                | Early source of nectar for insects                                                                                                                | Well-drained humus-rich soil in full sun or light shade | Evergreen |
| <b>Broad-leaved Oleaster</b><br><i>Elaeagnus macrophylla</i>        | to 3m                                                 | Leaves: Silvery when unfolding turning dark glossy green, Flowers: Creamy yellow bell shaped, Berries: Red | Flowers in October to November                              | Provides a late source of pollen and nectar                                                                                                       | Any reasonable soil, preferably in good sun             | Evergreen |

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| <b>Spreading Oleaster</b><br><i>Elaeagnus umbellata</i> | 2 - 6m                        | Leaves: Silvery when unfolding turning bright green, Flowers: Creamy yellow bell shaped, Berries: Red | Fragrant flowers in May to June. Berries in October to December | Provides nectar for bees and butterflies, and food for wild birds   | Any reasonable soil, preferably in good sun                                       | Deciduous |
| <b>Hydrangea</b><br><i>Escallonia macrantha</i>         | 1 - 3m<br>(Species dependent) | Leaves: Dark green and glossy, Flowers: Pinkish red                                                   | Flowers June to September                                       | Provides nectar for bees and butterflies                            | Full sun or light shade                                                           | Evergreen |
| <b>Fuchsia</b><br><i>Fuchsia magellanica</i>            | 2 - 3m                        | Leaves: Dark green leaves, Flowers: Purple and red                                                    | Flowers: July to October                                        | Attracts bees                                                       | Full sun or light shade                                                           | Deciduous |
| <b>Hebe</b><br><i>Hebe spp.</i>                         | 80cm                          |                                                                                                       | Flowers May-September (depending on variety)                    | Food source for 26 species of butterfly including the Speckled Wood | Well-drained soil in full sun. Plant semi-ripe cuttings in a cold frame in summer | Evergreen |
| <b>Hebe</b><br><i>Hebe albicans.</i>                    | 30cm x 90cm                   | Leaves: Small and Green, Flowers: White                                                               | Flowers in June to July                                         | Nectar for bees and butterflies                                     | Well-drained soil in full sun. Plant semi-ripe cuttings in a cold frame in summer | Evergreen |
| <b>Hebe</b><br><i>Hebe andersonii 'variegata'.</i>      | to 2m                         | Leaves: Small and Green, Flowers: Mauve                                                               | Flowers in August to September                                  | Good for invertebrates with a late supply of nectar                 | Well-drained soil in full sun. Plant semi-ripe cuttings in a cold frame in summer | Evergreen |
| <b>Hebe</b><br><i>Hebe brachysiphon.</i>                | to 2m                         | Leaves: Small and Green, Flowers: White                                                               | Flowers in June to July                                         | Nectar for bees and butterflies                                     | Well-drained soil in full sun. Plant semi-ripe cuttings in a cold frame in summer | Evergreen |
| <b>Hebe</b><br><i>Hebe salicifolia.</i>                 | 90 - 150cm                    | Leaves: Small and Green, Flowers: White                                                               | Flowers in June to September                                    | Nectar for bees and butterflies                                     | Well-drained soil in full sun. Plant semi-ripe cuttings in a cold frame in summer | Evergreen |

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| <b>Shrubby Helichrysum</b><br><i>Helichrysum italicum</i>                 | 60cm          | Leaves: Grey-green silvery leaves, Flowers: Yellow                                                        | Yellow flowers in June to August                                  | Nectar source for bees and butterflies                                                    | Well-drained sandy soil in full sun                                                                              | Evergreen      |
| <b>Hydrangea</b><br><i>Hydrangea spp.</i>                                 | 1 - 2.5m      | Leaves: Green, Flowers: Depends upon species/varieties                                                    | Flowers July to September                                         | Provides nectar for bees and butterflies                                                  | Well-drained fertile soil in full sun, needs watering through dry spells                                         | Deciduous      |
| <b>St. John's Wort</b><br>aka 'Rose of Sharon' <i>Hypericum calycinum</i> | to 1m         | Leaves: Green turning red in autumn, Flowers: Yellow, Berries: Red                                        | Flowers June to October                                           | Flowers attract insects especially bees. Berries are eaten by birds and small mammals     | Full sun or light shade. Plant semi-ripe cuttings in a cold frame in summer                                      | Semi-evergreen |
| <b>Hyssop</b><br><i>Hyssopus officinalis</i>                              | 60cm          | Leaves: Green, Flowers: Small blue flowers on spikelets                                                   | Low evergreen shrub                                               | Attractive for some butterflies                                                           | Well-drained fertile soil in full sun                                                                            | Semi-evergreen |
| <b>Holly 'Golden King'</b><br><i>Ilex altacelerensis</i>                  | 300 x 150+ cm | Leaves: Glossy green with yellow borders and small spines, Flowers: Small pink/white, Berries: Bright red | Flowers: May. Berries: (only on female trees) October to December | Berries good for birds and small mammals. Holly leaf miner provides winter food for birds | Any reasonable soil in full sun or partial shade. Need male and female plants near each other to produce berries | Evergreen      |
| <b>Lavender</b><br><i>Lavandula angustifolia</i>                          | 75 x 75 cm    | Leaves: Greyish-green, Flowers: Blue/purple                                                               | Flowers: July to September                                        | Attracts butterflies                                                                      | Plant semi-ripe cuttings in a cold frame in summer                                                               | Evergreen      |
| <b>Oregon Grape</b><br><i>Mahonia aquifolium</i>                          | 1m            | Leaves: Green and glossy with small spikes, Flowers: Yellow                                               | Flowers March to April                                            | Nectar for bees and butterflies                                                           | Thrives best in partial shade                                                                                    | Evergreen      |
| <b>Daisy Bush</b><br><i>Olearia haastii</i>                               | 1 - 2m        | Leaves: Green and glossy, Flowers: White                                                                  | Flowers white, July to August                                     | Nectar for bees and butterflies                                                           | Well drained soil in full sun                                                                                    | Evergreen      |
| <b>Russian Sage</b><br><i>Perovskia atriplicifolia</i>                    | 1m            | Leaves: Greyish-green, Flowers: Blue/purple                                                               | Flowers: August to October                                        | Good for bees                                                                             | Full sun essential                                                                                               | Deciduous      |

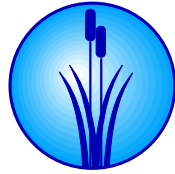
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| <b>Mock Orange</b><br><i>Philadelphus coronarius</i> | 1.5 - 3m                   | Leaves: Yellow and green, Flowers: White                                                        | Flowers June to July                                                            | Nectar for bees and butterflies                                                               | Full sun                                                    | Deciduous       |
| <b>Firethorn</b><br><i>Pyracantha atalantioides</i>  | 3m                         | Leaves: Dark green, Flowers: White, Berries: Red/orange                                         | Berries: October-January                                                        | Good for nesting thrushes and a site or an open robin box. Nectar for bees, berries for birds | Thrives in most good soils                                  | Evergreen       |
| <b>Firethorn</b><br><i>Pyracantha coccinea</i>       | to 3.5m                    | Leaves: Dark green, Flowers: White, Berries: Red/orange                                         | Berries: October-January                                                        | Good for nesting thrushes and a site or an open robin box. Nectar for bees, berries for birds | Thrives in most good soils                                  | Evergreen       |
| <b>Black Currant</b><br><i>Ribes nigrum</i>          | 2m                         | Leaves: Green , Flowers: Pink, Berries: Black                                                   | Flowers: April                                                                  | Good for bees, birds and small mammals                                                        | Thrives in full sun or partial shade                        | Deciduous       |
| <b>Ornamental Currant</b><br><i>Ribes odoratum</i>   | 2m                         | Leaves: Green turning purple in Autumn, Flowers: Yellow, Berries: Black                         | Flowers: April                                                                  | Good for bees and birds                                                                       | Thrives in full sun or partial shade                        | Deciduous       |
| <b>Flowering Currant</b><br><i>Ribes sanguineum</i>  | 2m x 1.5m                  | Leaves: Green , Flowers: Pink, Berries: Black.                                                  | Flowers March to April                                                          | Provides nectar for bees and butterflies                                                      | Full sun or light shade                                     | Deciduous       |
| <b>Rosemary</b><br><i>Rosemarinus officinalis</i>    | 1.5m                       | Leaves: Green and thin, Flowers: Lilac                                                          | Flowers April to May                                                            | Nectar source for bees and butterflies                                                        | Well-drained soil in full sun.                              | Evergreen       |
| <b>Blackberry</b><br><i>Rubus fruticosus</i>         | Sprawling plant 1.5 - 2.5m | Leaves: Green with thorns on underside, Flowers White, Berries: Red turning black when ripening | Flowers May to September with berries following the flowers until mid September | Nectar source for bees and butterflies. Berries for birds and mammals                         | Any soil in full sun or partial shade. Can be very invasive | Deciduous shrub |

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| <b>Loganberry</b><br><i>Rubus loganobaccus</i>  | 1.5 - 2.5m  | Leaves: Green with thorns on underside, Flowers White, Berries: Dark red, Stems also have thorns                        | Flowers May to August with large berries following | Nectar source for bees and butterflies. Berries for birds and mammals                                                                     | Any reasonable soil in full sun or partial shade                | Deciduous shrub |
| <b>Skimmia</b><br><i>Skimmia japonica</i>       | to 1m       | Leaves: Dark glossy green, Flowers: White, Berries: Red (but only if male and female trees are located near each other) | Flowers in April to May                            | Nectar source for bees and butterflies                                                                                                    | Well-drained, neutral to acid soil in full sun or partial shade | Evergreen       |
| <b>Bridal Wreath</b><br><i>Spiraea arguta</i>   | 2m          | Leaves: Green, Flowers: Masses of white flowers                                                                         | Flowers April to May                               | Nectar for bees and butterflies                                                                                                           | Full sun on most soils                                          | Deciduous       |
| <b>Snowberry</b><br><i>Symphoricarpos albus</i> | 1 - 2m      | Leaves Green, Flowers: Small and pink in terminal spikes, Berries: White                                                | Flowers: June to September                         | Caterpillars of the death's head hawk moth feed on the leaves. Good ground cover. Birds may feed on the berries when other food is scarce | Forms dense thickets unless regularly pruned                    | Deciduous       |
| <b>Lilac</b><br><i>Syringa vulgaris</i>         | 150 x 300cm | Leaves Green, Flowers: Colour depends on variety, in terminal spikes                                                    | Flowers May to June                                | Nectar for bees and butterflies                                                                                                           | Best in full sun                                                | Deciduous       |
| <b>Viburnum</b><br><i>Viburnum bodnantense</i>  | 1 - 2.5m    | Leaves: Green, Flowers: Pink                                                                                            | Flowers January to March                           | Provides early nectar source for invertebrates and berries for birds. One of the most valuable winter flowering shrubs                    | Sun or shade in most soils                                      | Deciduous       |
| <b>Laurustinus</b><br><i>Viburnum tinus</i>     | 2 - 6m      | Leaves: Green, Flowers: White to pink, Berries: Blue/black                                                              | Flowers November - February                        | Provides late nectar source for invertebrates and berries for birds                                                                       | Sun or shade in most soils                                      | Evergreen       |

|                                                       |             |                                                                                 |                                 |                                                                                                         |                                                                                    |                  |
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| <b>Weigela</b><br><i>Weigela florida</i>              | 1.2m x 1.2m | Leaves: Green or green with yellow tinges (variety dependant),<br>Flowers: Pink | Flowers May to June             | Provides nectar for bees and butterflies                                                                | Rich, moist soils in full sun or partial shade                                     | Deciduous        |
| <b>Native Herbaceous</b>                              |             |                                                                                 |                                 |                                                                                                         |                                                                                    |                  |
| <b>Teasel</b><br><i>Dipsacus fullonum</i>             | 2m          | Leaves: Green,<br>Flowers: Light purple                                         | Flowers: July to August         | A food source of the Brimstone butterfly. Attracts other insects for its nectar and birds for its seeds | Well-drained soil in full sun or light shade                                       | Biennial         |
| <b>Purple Loosestrife</b><br><i>Lythrum salicaria</i> | to 1.8m     | Leaves: Green,<br>Flowers: Purple                                               | Flowers in June to September    | Provides nectar for bees and butterflies                                                                | Humus-rich soil in full sun or light shade with plenty of water, preferably boggy  | Border perennial |
| <b>Musk Mallow</b><br><i>Malva moschata</i>           | 60cm        | Leaves: Green<br>Flowers: Pink                                                  | Flowers between July and August | Provides nectar for bees and butterflies                                                                | Well-drained soil in full sun                                                      | Border perennial |
| <b>Cat-mint</b><br><i>Nepeta cataria</i>              | 60 - 90cm   | Leaves: Green above, white below. Flowers: White                                | Flowers July to September       | Berries for birds and nectar for insects                                                                | Well-drained soil in full sun                                                      | Perennial        |
| <b>Wild Marjoram</b><br><i>Origanum vulgare</i>       | 50 - 70cm   | Leaves: Green<br>Flowers: Pale pink                                             | Flowers July to September       | Good plant for butterflies and bees                                                                     | Dry soil preferably on calcareous soil                                             | Perennial        |
| <b>Tormentil</b><br><i>Potentilla erecta</i>          | 30 - 45cm   | Leaves: Green,<br>Flowers: Yellow                                               | Flowers June to September       | Good plant for butterflies and bees                                                                     | Well drained soil preferably acidic                                                | Perennial        |
| <b>Goldenrod</b><br><i>Solidago virgaurea</i>         | 70 - 100cm  | Leaves: Green.<br>Flowers: Yellow                                               | Flowers July to September       | 27 species of lepidoptera.                                                                              | Open woodland, grassland and hedgerows. Well-drained soil. Full sun or light shade | Perennial        |
| <b>Betony</b><br><i>Stachys officinalis</i>           | to 60cm     | Leaves: Green.<br>Flowers: Pink/purple                                          | Flowers June to September       | Nectar source for bees and butterflies                                                                  | Well-drained soil in full sun or partial shade                                     | Border perennial |

|                                                                    |                            |                                              |                                           |                                                                                       |                                                                                         |                     |
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| <b>Common Valerian</b><br><i>Valeriana officinalis</i>             | Stems to 1m                | Leaves: Green.<br>Flowers: Pink/white        | Flowers June to September                 | Provides nectar for bees and butterflies                                              | Dry or damp grassy or rough ground                                                      | Perennial           |
| <b>Introduced Herbaceous</b>                                       |                            |                                              |                                           |                                                                                       |                                                                                         |                     |
| <b>Rockery Alyssum</b><br><i>Alyssum saxatile</i>                  | 20cm                       | Leaves: Green,<br>Flowers: Bright yellow     | Flowers April to June                     | Provides nectar for bees and butterflies                                              | Grows well in poor, well-drained soil in full sun. It can soon spread if left unchecked | Perennial           |
| <b>Michaelmas Daisy</b><br><i>Aster novae-belgii</i>               | to 75cm                    | Leaves: Green,<br>Flowers: Dark pink         | Dark pink flowers in September to October | Good for invertebrates with a late supply of nectar                                   | Well-drained soil in full sun. Needs watering in dry weather                            | Border perennial    |
| <b>Perennial Wallflower</b><br><i>Erysimum 'Bowles Mauve'</i>      | to 75cm                    | Leaves: Dark green,<br>Flowers: Mauve        | Blooms nearly all year round              | Provides nectar for insects                                                           | Well-drained non-acid soil in full sun                                                  | Evergreen perennial |
| <b>Dame's-violet</b><br><i>Hesperis matronalis</i>                 | 60 - 100cm                 | Leaves: Green<br>Flowers: Pink               | Flowers May to July                       | Very good nectar source for bees and butterflies                                      | Well-drained soil in full sun or partial shade                                          | Border perennial    |
| <b>Candytuft</b><br><i>Iberis sempervirens</i>                     | 20cm high with 60cm spread | Leaves: Dull yellowish green, Flowers: White | Flowers May to June                       | Very good nectar source for bees and butterflies                                      | Well-drained soil in full sun                                                           | Rocky perennial     |
| <b>Golden Rays</b><br>aka Leopardplant<br><i>Ligularia dentata</i> | to 1m                      | Leaves: Bluish green,<br>Flowers: Yellow     | Flowers July to September                 | Provides nectar for bees and butterflies                                              | Humus-rich soil in light shade with plenty of water, preferably boggy                   | Border perennial    |
| <b>Ice Plant</b><br><i>Sedum spectabile</i>                        | 60 x 30cm                  | Leaves: Grey/green.<br>Flowers: Pink         | Flowers, June to October                  | Provides nectar for bees and butterflies. The plant is extremely good for butterflies | Average garden soil in full sun                                                         | Perennial           |

|                                                                 |                                 |                                                                                                                       |                                                                                   |                                                                                                                                       |                                                                                                                                      |                     |
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| <b>Nasturtium</b><br><i>Tropaeolum majus</i>                    | 1.8m                            | Leaves: Green.<br>Flowers: Red, orange<br>and yellow                                                                  | Flowers: June-<br>October                                                         | Good for bees and beetles.<br>Seeds eaten by birds and<br>small mammals. Good<br>insect plant                                         | Plant in sun or partial shade.<br>Likes poor soil                                                                                    | Climbing<br>annual  |
| <b>Native Climbers</b>                                          |                                 |                                                                                                                       |                                                                                   |                                                                                                                                       |                                                                                                                                      |                     |
| <b>Clematis 'Old<br/>Mans Beard'</b><br><i>Clematis vitalba</i> | Climber to<br>30m               | Leaves: Green.<br>Flowers: White/green                                                                                | Flowers in July                                                                   | Provides nectar for bees<br>and butterflies                                                                                           | Prefers calcareous and<br>alluvial soils                                                                                             | Deciduous           |
| <b>Ivy</b><br><i>Hedera helix</i>                               | Climber                         | Leaves: Dark green,<br>shiny. Flowers:<br>Green/yellow. Berries:<br>Black                                             | Flowers October to<br>November                                                    | Provides late nectar source<br>and cover/hibernating sites<br>for invertebrates. Food<br>source for the Holly Blue<br>butterfly larva | Trees, banks, rocks and<br>crawling over the floor.<br>Thrives in shade. Remove<br>and plant rooted runners in<br>spring             | Evergreen           |
| <b>Hop</b><br><i>Humulus lupulus</i>                            | Climber to 8m                   | Leaves: Yellowish-<br>green, Flowers: Small<br>yellowish brown                                                        | Flowers July to<br>August                                                         | Provides nectar for bees<br>and butterflies                                                                                           | Well-drained soil in full sun<br>or light shade                                                                                      | Perennial           |
| <b>Honeysuckle</b><br><i>Lonicera<br/>periclymenum</i>          | Climber to 6m                   | Leaves: Dark green on<br>top and bluish<br>underneath. Flowers:<br>red outside cream<br>within Berries: Bright<br>red | Flowers July to<br>August                                                         | Excellent food source for<br>invertebrates including the<br>Speckled Wood butterfly.<br>Berries eaten by birds                        | Woods, scrub and hedges.<br>Sun or light shade. Plant<br>semi-ripe cuttings in a cold<br>frame in summer or Layer<br>stems in spring | Deciduous           |
| <b>Introduced<br/>Climbers</b>                                  |                                 |                                                                                                                       |                                                                                   |                                                                                                                                       |                                                                                                                                      |                     |
| <b>Everlasting Pea</b><br><i>Lathyrus latifolius</i>            | Spreading<br>climber to<br>1.8m | Leaves: Green,<br>Flowers: Pink-purple.<br>Has long thin seed pods                                                    | Flowers in July to<br>September                                                   | Provides nectar for bees<br>and butterflies                                                                                           | Well-drained soil in full sun<br>or light shade                                                                                      | Border<br>perennial |
| <b>Japanese Wisteria</b><br><i>Wisteria floribunda</i>          | Climber<br>(needs tying)        | Leaves: Yellowish-<br>green Flowers: Blue-<br>purple in large drooping<br>clusters                                    | Flowers early to mid<br>summer but may not<br>flower for the first<br>year or two | Provides nectar for bees<br>and butterflies                                                                                           | Well-drained soil in full sun<br>or light shade. Needs plenty<br>of space                                                            | Evergreen           |



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