



Heyford Park,
Oxfordshire

Update of Desk Study and
Extended Phase 1 Habitat Survey

For

Waterman
Energy, Environment
and Design

Waterman Energy, Environment and Design
Heyford Park, Oxfordshire
Update of Desk Study and Extended Phase 1 Habitat Survey

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FIGURE 2 EXTENDED PHASE 1 HABITAT SURVEY UPDATE OF NEW SETTLEMENT AREA

1 SUMMARY AND MAIN RECOMMENDATIONS

1.1 SUMMARY

- 1.1.1 Waterman Energy, Environment and Design commissioned Thomson Ecology on behalf of their client to undertake an update of the Desk Study and Phase 1 habitat survey previously undertaken at the Settlement Area part of Heyford Park in Upper Heyford. A desk study and extended Phase 1 habitat survey were carried out by Thomson Ecology in April 2010 with the aim of identifying any changes to the habitats at the site and any changes to the records of designated sites and protected species within 2km of the Site (see Figure 1 for 2km search area and desk study results).
- 1.1.2 An additional area of land, adjacent to the caravan park in the south-east of the Site was also surveyed (see Figures 2). This survey and report provide baseline ecological data for an EIA to be submitted in respect to a Development proposed at the Site.
- 1.1.3 The main findings of the desk study were that the site is within 2km of two SSSIs, two non-statutory designated sites, three UKBAP Priority Habitats and two parcels of ancient woodland. These are the same sites as identified in the previous desk study. In addition, the desk study provided records of species of conservation concern within a 2km radius, including bats, otters and badgers.
- 1.1.4 During the field survey, the majority of the Settlement Area, as shown in Figure 2, was found to support the same combination of scattered scrub, scattered broadleaved trees, scattered coniferous trees, standing water, introduced shrub, amenity grassland, coarse grassland, species-poor hedgerow, species-poor hedgerow with trees, buildings and hard-standing as previously recorded.
- 1.1.5 The western and southern barracks areas however, contained recently-established scrub habitat potentially suitable for reptiles and connected to further suitable habitat for reptiles outside of the survey area in the form of farmland.
- 1.1.6 Hedgerows present at the Site are now designated as a UKBAP Priority Habitat, and Habitats of Principal Importance under Section 41 of NERC Act 2006 when they are of more than 20m in length and of native species and therefore recommendations are made for their retention, or replacement.
- 1.1.7 Cotoneaster was recorded within the Settlement Area. Cotoneaster has been classed as an invasive species under Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended) since April 2010. If it is to be removed

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then it would be important to prevent its spread in the wild, an offence under the Act.

- 1.1.8 Suitable terrestrial habitat for legally protected species including great crested newts, reptiles, bats and badgers is present on the western and eastern parts of the barracks south of Camp Road as previously identified.
- 1.1.9 Records of bats and badgers were noted within 2km of the development site during the desk study. Indeed, bats may be present in greater numbers than previously recorded as an increasing number of the buildings on site have become uninhabited and fallen into disrepair increasing the likelihood of them supporting roosting bats. Bats should therefore be subject to targeted surveys to identify their current use of the site and to inform the EIA.
- 1.1.10 Should great crested newts be present in this area they are most likely to be part of the southern population at the airfield site, for which mitigation has already been proposed. However, the new proposals for the New Settlement Area are likely to require revised mitigation.
- 1.1.11 The two statutory, two non-statutory nature conservation sites, three UKBAP Priority Habitats and two ancient woodland sites within 2km of the New Settlement Area should not be affected by the development as it is understood to be constrained to the currently developed footprint. Habitat suitable for breeding birds may be lost as a result of the development.
- 1.1.12 The above information and results of the resulting protected species surveys will be incorporated into the Ecology Chapter of the Environmental Impact Assessment for the New Settlement Area, prior to the planning application.
- 1.1.13 The area adjacent to the caravan park supports scattered broadleaved trees, standing water, running water and amenity grassland (see Figure 2).
- 1.1.14 Suitable habitat for UKBAP Priority Species, including invertebrates and breeding birds (as well as bats, reptiles and great crested newts) is present on site and a number of common birds were found during the site visit. Breeding birds receive protection under the Wildlife and Countryside Act 1981, as amended. An active badger sett was recorded approximately 500m to the east of the Site at the junction of Chilgrove Drive and Camp Road with entrances on both sides of Chilgrove Drive .
- 1.1.15 Mitigation proposals are set out below which could ensure that the development proposed for the Settlement Area is compliant with the law and planning policy with respect to great crested newts, reptiles, bats, birds, badgers, trees, hedgerows and running water. However, an Environmental Impact Assessment (EIA) will fully consider the effects of the Development on protected habitats and species.

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1.2 **MAIN RECOMMENDATIONS**

1.2.1 The following measures are recommended for the development to comply with relevant biodiversity legislation and planning policy and in order to inform the EIA:

1.2.2 Habitat similar to that previously recorded in the Settlement Area is still present and continues to be suitable for supporting bats and great crested newts. In addition, areas of scrub habitat with the potential to support reptiles has developed in the barracks areas to the south of Camp Road (see Figure 2). The following actions are therefore recommended:

- Clearance and management of invasive species (Cotoneaster) present on site should be undertaken in line with Defra guidelines if it is to be removed;
- UK BAP Priority Habitats (hedgerows) should be incorporated into the design of the Development or extended or replaced with similar native species to the same, or preferably greater, length;
- Any necessary clearance of trees and shrubs should take place outside of the bird breeding season (works can be undertaken September to February inclusive);
- All trees to be retained should be protected throughout the development in accordance with the guidelines detailed in the British Standard 5837 '*Trees in relation to construction*'. If any scattered trees are removed native trees could be planted as compensation;
- Care should be taken to ensure that habitat suitable for pea muscels (RW1 Figure 2b), grizzled skipper, wall and small heath (butterflies) (DS and SS Figure 2), and tree sparrows is retained and protected where possible; new habitat should preferably be created for these species to comply with biodiversity guidance within the planning system;
- All native species-poor hedgerows (UKBAP Priority Habitat, see Figure 2) should be retained and protected where possible. If it is necessary to remove any hedgerow an equivalent length should be planted in compensation comprising similar native species to those lost; and
- The stream (RW1) should be retained and protected throughout the proposed development. Any necessary works on, or adjacent to, this watercourse should adhere to the Environment Agency pollution prevention guidelines (PPG5) '*Working on or near water*'.

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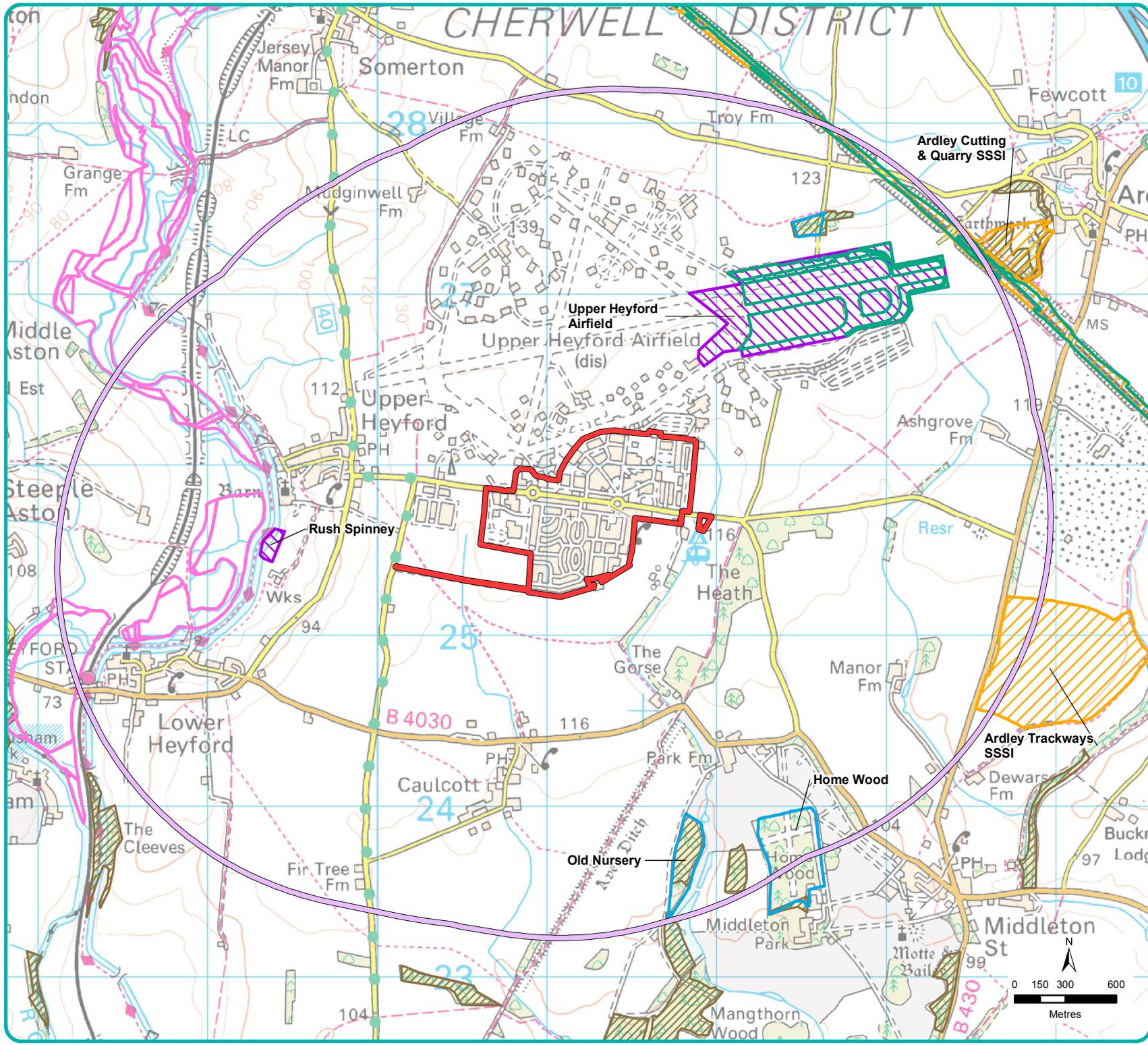
1.3 FURTHER SURVEY

1.3.1 Further surveys are recommended as follows:

- Great crested newt surveys should be updated to inform the EIA with regard to current use of water bodies and terrestrial habitat by this species at the site;
- Reptile surveys should be carried out at habitats on site suitable for this species group. (If reptiles are not found to be present these areas should be cleared immediately and kept short to discourage their migration onto the site); and
- Bat surveys should be updated as suitable habitat still exists at the site in order to inform the EIA.

1.3.2 Further surveys for great crested newts (updated surveys) and reptiles are currently being undertaken. Further survey for bats and badgers is recommended if suitable habitat for these species is to be affected directly or indirectly by proposed or future development as they are legally protected or otherwise of conservation concern.

1.3.3 It is necessary to be aware that further mitigation measures may be required following the results of the further surveys and, if any development does not take place within two years, that great crested newt, reptile and bat surveys would need to be updated.



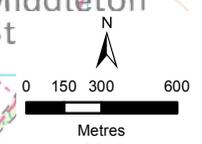
Legend

- Application Site Boundary
- Zone of Influence
- Site of Special Scientific Interest (SSSI)
- Local Wildlife Site
- Ancient Woodland
- Coastal & Floodplain Grazing Marsh
- Lowland Calcareous Grassland
- Deciduous Woodland

Data originates from different sources and scales of mapping and should therefore be considered indicative of position and extent.
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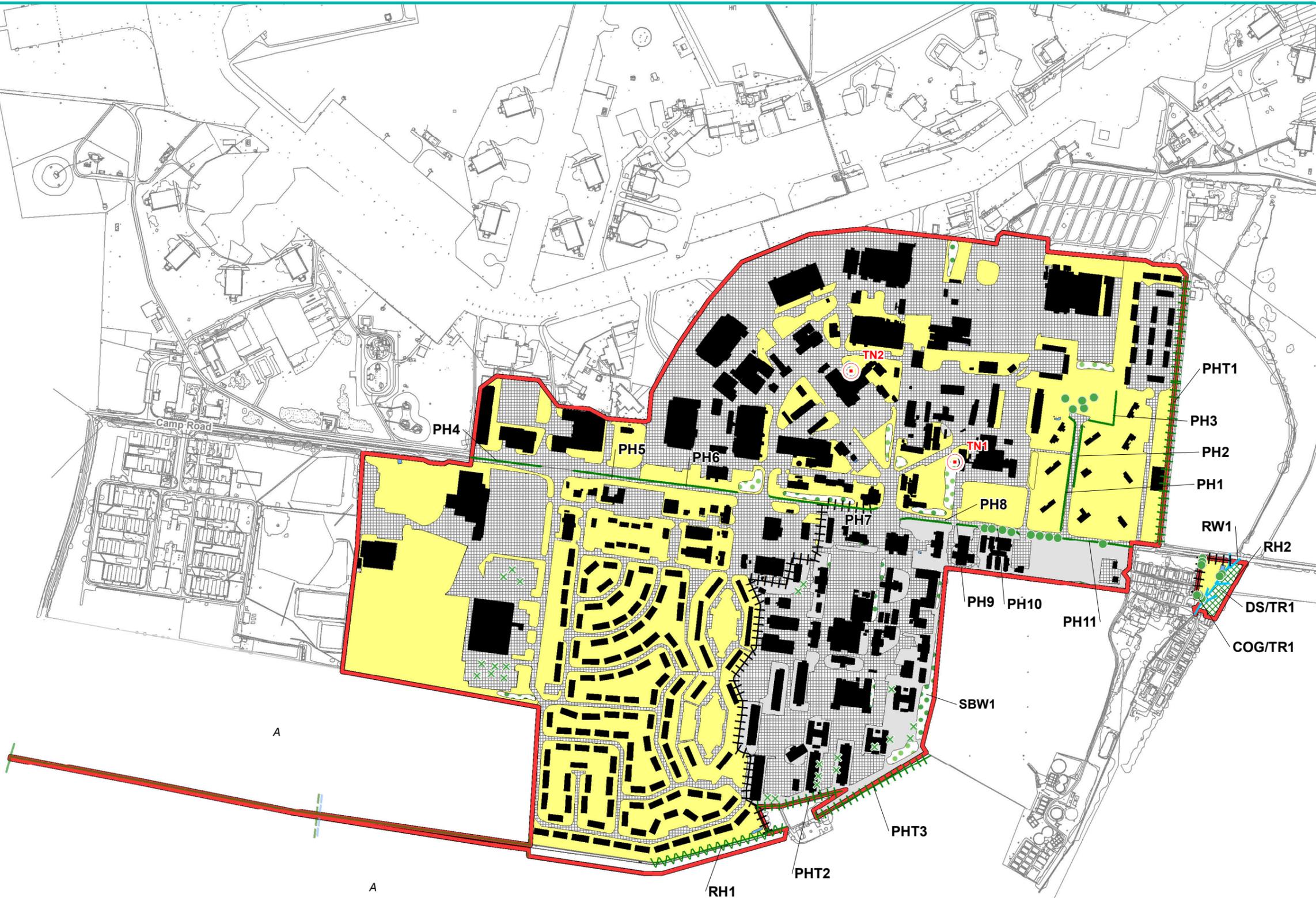
Figure: 1
Site Location and
Desk Study Results

Surveyed For: Waterman Energy, Environmental and Design
 Drawing Ref: AWAT124/5988/2
 Drawing Size: A4
 Drawn By: Thomson Ecology (KS)
 Checked By: Thomson Ecology (TD)
 Date: 23/09/2010



Legend

- Target Note
- Habitats Within Application Site Boundary*
- × Scattered Scrub (SS)
- Scattered Broadleaved Trees (SBW)
- Running Water (RW)
- ▬▬▬ Species Rich Intact Hedge (RH)
- ▬▬▬ Species Poor Intact Hedge (PH)
- ▬▬▬ Species Rich Hedge With Trees (RHT)
- ▬▬▬ Species Poor Hedge With Trees (PHT)
- ▬▬▬ Fence (F)
- ▨ Dense / Continuous Scrub (DS)
- ▨ Scattered Broadleaved Trees (SBW)
- ▨ Scattered Coniferous Trees (SCW)
- ▨ Coarse Grassland (*rank*) (COG)
- ▨ Standing Open Water (SW)
- ▨ Arable (A) (A)
- ▨ Amenity Grassland (A) (AM)
- ▨ Buildings (B)
- ▨ Hard Standing (HS)
- ▨ Bare Ground (BG)
- Habitats Outside Application Site Boundary*
- ▬▬▬ Species Poor Intact Hedge (PH)
- ▬▬▬ Species Poor Defunct Hedge (PH-)
- ▬▬▬ Dry Ditch (DD)
- ▭ Application Site Boundary

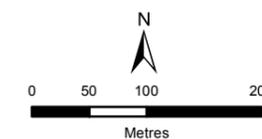


This map has been drawn at a sufficient accuracy to fulfill the requirements of a Phase 1 baseline habitat survey. This map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

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Figure: 2
Extended Phase 1 Habitat Survey Update

Surveyed For: Waterman Energy, Environmental and Design
Drawing Ref: AWAT124/5882/2
Drawing Size: A3
Drawn By: Thomson Ecology (KS)
Checked By: Thomson Ecology (TD)
Date: 23/09/2010



2 INTRODUCTION

2.1 DEVELOPMENT BACKGROUND

2.1.1 Waterman Energy, Environment and Design (Waterman) has obtained planning permission for the Flying Field part of the 516ha decommissioned Heyford Park Airfield, in Upper Heyford, Oxfordshire with conditions relating to ecology. Part of the site, known as the Settlement Area (see Figure 1) is to be resubmitted to planning with a mixture of refurbished and new-build houses with the demolition of some existing buildings and extensive landscaping proposals including the retention of some or all hedgerows, trees and enhancement of public open spaces to be confirmed. The proposals described above are hereafter referred to collectively as 'the development'.

2.1.2 The development will be located on an approximately 82ha area of developed land, recently used for offices, housing and associated facilities for the former airfield (Grid Reference SP521 257) adjacent to Camp Road and close to the village of Upper Heyford and an area of land to the east of an existing caravan site (see Figure 1),

2.2 ECOLOGY BACKGROUND

2.2.1 An extended Phase 1 Habitat Survey was undertaken by EPR Ltd (Chapter 15 of Environmental Statement, Evans 2007) as part of the EIA for the entire airfield site. Alterations to the planning application for the Settlement Area considered within this report require that the previous ecological surveys are updated and that an extended Phase 1 habitat survey is carried out on the area of land adjacent to the caravan site. Further surveys previously carried out include botanical, invertebrate, great crested newt, reptile, bat, bird, and badger surveys to inform the EIA for the larger site. Update surveys for great crested newts and reptiles are currently being carried out in the Settlement Area.

2.3 LIMITATIONS

2.3.1 The extended Phase 1 habitat survey was undertaken within the optimal time of year for this type of survey with no limitations.

3 METHODOLOGY

3.1 DESK STUDY

3.1.1 A study area was defined that encompasses the site and all land within 2km of the perimeter of the site (see Figure 1). Nature conservation organisations with an interest in the study area were approached and asked to provide up-to-date information on sites designated for their nature conservation value, local nature reserves, records of protected species and other species of conservation concern and any other information that they considered relevant. Records of designated sites were sought for the full study area, whereas records for species were sought for part of the study area encompassing the site and within 1km of the perimeter of the site.

3.1.2 The organisations contacted include:

- Thames Valley Environmental Record Centre;
- Oxfordshire Badger Group;
- Oxfordshire Bat Group; and
- Oxfordshire Amphibian and Reptile Group.

3.1.3 Letters requesting information were sent on 20th April 2010 with responses requested by 4th May 2010.

3.1.4 In addition, published data was consulted including the following:

- The Multi- Agency Geographical Information for the Countryside (MAGIC);
- Natural England's Nature on the Map; and the
- Non-statutory Cherwell Council's Local Plan (2011).

3.2 FIELD SURVEY

3.2.1 A survey area was defined that encompassed the Site itself and 2km surrounding the Site boundary. The survey area is shown on Figure 1.

3.2.2 An extended Phase 1 habitat survey (JNCC, 1993; IEA, 1995) was conducted throughout the survey area. Plant species nomenclature follows Stace (1997). This survey was limited to comparing the habitats present in 2007 (Evans 2007) with those currently present, noting any changes. No specific faunal surveys were undertaken. In the additional area surveyed, a full extended Phase 1 habitat survey was carried out.

3.2.3 In addition, the badger setts previously identified were visited, where accessible, to look for signs of current use.

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- 3.2.4 The survey was conducted on 19th April 2010 in ideal conditions for this type of survey with a further visit to area adjacent to the caravan park visited on 5th May 2010.

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4 RESULTS

4.1 DESK STUDY

4.1.1 Responses were received from the following organisations:

- Thames Valley Environmental Records Centre;
- Oxfordshire Badger Group;
- Oxfordshire Bat Group; and
- Oxfordshire Amphibian and Reptile Group.

4.1.2 The results are summarised below.

Designated Sites

4.1.3 There are two statutory designated sites within 2km of the site boundaries. These are Ardley Trackways SSSI (designated for archaeological features) and Ardley Cutting and Quarry SSSI. Two sites (RAF Upper Heyford Airfield and Rush Spinney Oxfordshire Wildlife Sites, OWS) with non-statutory designation for nature conservation also lie within 2km of the site perimeter (see Table 1 and Figure 1).

Table 1: Designated sites within 2km of the site

Site Designation	Grid Reference	Area (ha)	Distance to site (km)	Description
National Sites (SSSIs)				
Ardley Trackways SSSI	SP 540 248	54.81	1.5	A nationally important site for its geological features of special interest, including preserved dinosaur footprints and trackways, other examples of which are unknown in England.

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Site Designation	Grid Reference	Area (ha)	Distance to site (km)	Description
Ardley Cutting and Quarry SSSI	SP 540269	40.13	1.9	A site located along the London to Birmingham railway line, of geological interest for its exposed Jurassic rocks and of biological interest for its limestone grassland, scrub, ancient woodland, and wetland habitats. The SSSI is important for invertebrates, particularly butterflies of which a number of locally rare species can be found. Great crested newts have also been found in the SSSI.
County and Local Sites (SINCs, LNRs, etc)				
RAF Upper Heyford Airfield Oxfordshire Wildlife Site	SP 519269	28.0	0.6	A large area of grassland with some species-rich areas included. Notable species present include bee orchid (<i>Ophrys apifera</i>) and dwarf thistle (<i>Cirsium acaule</i>).
Rush Spinney Oxfordshire Wildlife Site	SP 494 256	1.6	0.8	A small area of marsh with a diverse variety of wetland and wet-grassland species. An uncommon habitat in Oxfordshire and a priority for conservation.

Biodiversity Action Plan Habitats

- 4.1.4 UK Biodiversity Action Plan (BAP) Priority Habitats and Local BAP habitats, located within 2km of the site boundary, are listed in Table 2 and shown on Figure 1.

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Table 2: Biodiversity Action Plan Habitats

Habitat Name and Type	Grid Reference	Distance to site (km)	Source of Information
Lowland calcareous grassland (within RAF Upper Heyford Airfield Wildlife Site and Ardley Cutting and Quarry)	SP 519269	0.6	Nature on the Map
Coastal and floodplain grazing marsh	SP 494257	0.8	Nature on the Map
Lowland mixed deciduous woodland	SP 523 238	0.9	Nature on the Map

Ancient Woodland

- 4.1.5 There are two areas of ancient woodland located within 2km of the site. Old Nursery, a 6.37ha area of ancient replanted woodland situated 1.3km from the site and Home Wood, 16.94ha of ancient replanted woodland situated 1.4km from the site boundary (see Figure 1).

Protected Species and Species of Conservation Concern

- 4.1.6 A number of protected species and species of conservation concern were identified within 2km of the site during the desk study; these are detailed in Table 3. Where reference is made to the badger record this information should be treated as confidential and not be circulated in the public domain. Results are only shown where the species has been recorded within the last 10 years.

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Table 3: Records of Protected and Other Species of Conservation Concern derived from the desk study

Common Name	Scientific Name	HR Sch 2 or 4	WCA Sch1, 5 or 8	UKBAP Priority	Local BAP species	Red Data Book	Other	Grid Ref.	Distance from site	Source
<i>Plants</i>										
Basil thyme	<i>Clinopodium acinos</i>			✓			VPRDLGB Vulnerable	SP 525269	1.84	TVERC
Meadow Clary	<i>Salvia pratensis</i>		✓				VPRDLGB Near Threatened	SP 536250	1.90	TVERC
Bluebell	<i>Hyacinthoides non-scripta</i>		✓					SP 526274	0.97	TVERC
Dwarf Spurge	<i>Euphorbia exigua</i>						VPRDLGB Near Threatened	SP 525269	0.97	TVERC
<i>Invertebrates</i>										
Pea mussel	<i>Pisidium tenuilineatum</i>			✓				SP 492263	1.99	TVERC
Dingy skipper butterfly	<i>Erynnis tages</i>			✓				SP 5226	0.95	TVERC
Grizzled skipper butterfly	<i>Pyrgus malvae</i>			✓				SP 5226	0.95	TVERC

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Common Name	Scientific Name	HR Sch 2 or 4	WCA Sch1, 5 or 8	UKBAP Priority	Local BAP species	Red Data Book	Other	Grid Ref.	Distance from site	Source
Small blue butterfly	<i>Cupido minimus</i>		Sch 5	✓				SP 5226	0.95	TVERC
Adonis blue butterfly	<i>Lysandra bellargus</i>		Sch 5					SP 5226	0.95	TVERC
Wall butterfly	<i>Lasiommata megera</i>			✓				SP 5226	0.95	TVERC
Small heath butterfly	<i>Coenonympha pamphilus</i>			✓				SP 5226	0.95	TVERC
Shaded broad bar moth	<i>Scotopteryx chenopodiata</i>			✓				SP 5376 2725	1.73	TVERC
Small square spot moth	<i>Diarsia rubi</i>			✓				SP5376 2725	1.73	TVERC
Grey dagger moth	<i>Acronicta psi</i>			✓				SP 534 274	1.90	TVERC
Rosy rustic moth	<i>Hydraecia micacea</i>			✓				SP5376 2725	1.73	TVERC
Four spotted moth	<i>Tyta luctuosa</i>			✓				SP5376 2725	1.73	TVERC
<i>Amphibians</i>										
Great crested newt	<i>Triturus cristatus</i>	✓	✓	✓				SP 5376 2725	1.73	TVERC

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Common Name	Scientific Name	HR Sch 2 or 4	WCA Sch1, 5 or 8	UKBAP Priority	Local BAP species	Red Data Book	Other	Grid Ref.	Distance from site	Source
Smooth newt	<i>Triturus vulgaris</i>		✓ (sale only)					SP 538 273	1.90	TVERC
Common frog	<i>Rana temporaria</i>		✓ (sale only)					SP 538 273	1.90	TVERC
Birds										
Lapwing	<i>Vanellus vanellus</i>			✓			BoCC Red List	SP 5127	1.30	TVERC
Woodcock	<i>Scolopax rusticola</i>						BoCC Amber List	SP 522253	1.17	TVERC
Swift	<i>Apus apus</i>						BoCC Amber List	SP 496259	1.51	TVERC
Tree sparrow	<i>Passer montanus</i>			✓			BoCC Red List	SP 5027	1.70	TVERC
Red Kite	<i>Milvus milvus</i>		✓				BoCC Amber List	SP 4824	1.06	TVERC
Curlew	<i>Numenius arquata</i>			✓			BoCC Amber List	SP 486251	1.73	TVERC
Skylark	<i>Alauda arvensis</i>			✓			BoCC Red List	SP 4826	1.74	TVERC
Starling	<i>Sturnus vulgaris</i>			✓			BoCC Red List	SP 4826	1.74	TVERC

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Common Name	Scientific Name	HR Sch 2 or 4	WCA Sch1, 5 or 8	UKBAP Priority	Local BAP species	Red Data Book	Other	Grid Ref.	Distance from site	Source
Yellowhammer	<i>Emberiza citrinella</i>			✓			BoCC Red List	SP 527 280	1.42	TVERC
Corn Bunting	<i>Miliaria calandra</i>			✓			BoCC Red List	SP 527280	1.42	TVERC
Spotted Flycatcher	<i>Muscicapa striata</i>			✓			BoCC Red List	SP 4824	1.94	TVERC
Swift	<i>Apus apus</i>						BoCC Amber List	SP 4960 2591	1.12	TVERC
<i>Mammals</i>										
Brown long-eared bat	<i>Plecotus auritus</i>	✓	Sch 5	✓				SP 515258	0.41	TVERC
Otter	<i>Lutra lutra</i>	✓	Sch 5	✓				SP 493255	1.83	TVERC
Badger	<i>Meles meles</i>						Badger Protection Act 1992	SP 520260	0.95	OBG

HR = Conservation (Habitats &c) Regulations 2010
WCA = Wildlife and Countryside Act 1981, as amended
BAP = UK Biodiversity Action Plan
BoCC = Birds of Conservation Concern

TVERC = Thames Valley Environmental Records Centre
OBG = Oxfordshire Badger Group
VPRDLGB = Vascular plant red data list for Great Britain

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4.2 **FIELD SURVEY - UPDATE OF NEW SETTLEMENT AREA**

Habitats and Flora

4.2.1 The following Phase 1 habitat types were identified; habitats which have developed since the previous surveys were conducted are in bold:

- Scattered scrub;
- Scattered broadleaved trees;
- Scattered coniferous trees;
- Standing water;
- Introduced shrub;
- Amenity grassland;
- Coarse grassland;
- Species-rich hedgerow
- Species-poor hedgerow;
- Species-poor hedgerow with trees; and
- Buildings and hard-standing.

4.2.2 These habitats are described below and their distribution is given on Figure 2.

Scattered Scrub - SS

4.2.3 The south-eastern section of the Settlement Area site, the former barracks, has had little management in the last few years. As a result, a number of common shrub species have begun to flourish. Hawthorn (*Crataegus monogyna*) was frequent with bramble (*Rubus fruticosus* agg.) and occasional elder (*Sambucus nigra*) scrub. **This habitat appears to have developed** since the previous extended Phase 1 habitat survey.

Scattered Broadleaved Trees - SBW

4.2.4 There are semi-mature and mature broadleaved trees scattered throughout the site. Silver birch (*Betula pendula*) was frequently recorded with occasional sycamore (*Acer pseudoplatanus*), horse chestnut (*Aesculus hippocastanum*), beech (*Fagus sylvatica*) and cherry (*Prunus avium*). This habitat appears to be similar to that recorded previously.

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Scattered Coniferous Trees - SCW

- 4.2.5 A number of coniferous tree species have also been planted throughout the site. Leyland cypress (*Cupressocyparis x leylandii*) is frequently found planted in rows to boundaries. Larch (*Larix decidua*) and Scot's pine (*Pinus sylvestris*) were also recorded within the communal areas of the site. This habitat appears to be similar to that recorded previously.

Standing water - SW

- 4.2.6 There are 19 water tanks scattered throughout the Site, as previously identified. In total, these water bodies cover an area of 326m². These tanks and ponds are concrete-sided with netting over the surface. Aquatic macrophytes are limited but include common duckweed (*Lemna minor*).
- 4.2.7 There appears to have been an increase of leaf litter to these ponds, perhaps because of the growth of scrub and ruderal vegetation around many of the water bodies the debris of which has collected on the netting and shades the water of some of the waterbodies. This may have affected the potential of some of the water bodies to support great crested newts.

Introduced Shrub - IS

- 4.2.8 Introduced shrub is found throughout the site. The residential properties have well-managed gardens and include a number of planted beds. Hebe (*Hebe* sp.) mahonia (*Mahonia* sp.), spotted laurel (*Aucuba japonica*) and garden rose (*Rosa* sp.) were frequently recorded. There appears to have been no change to these habitats. Cotoneaster (*Cotoneaster horizontalis*) was present within introduced shrub beds in the north of the site (see TN1 on Figure 2).
- 4.2.9 In the southeast and southwest of the site where management appears to have been reduced in parts, introduced shrubs have proliferated. Butterfly bush (*Buddleja davidii*) and cherry laurel (*Prunus laurocerasus*) were frequently recorded. There **appears to have been an increase** in this type of habitat in these parts of the site since the previous survey.

Amenity Grassland - AM

- 4.2.10 Amenity grassland covers a large proportion of the site (approximately 32.6ha) in both communal open space and residential gardens. Perennial rye-grass (*Lolium perenne*) was abundant with red fescue (*Festuca rubra*) and Yorkshire-fog (*Holcus lanatus*) occasional. Herb species recorded include occasional creeping buttercup (*Ranunculus repens*), daisy (*Bellis perennis*), and common field speedwell (*Veronica persica*). Lesser

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celandine (*Ranunculus ficaria*) and ground-ivy (*Glechoma hederacea*) were also recorded. Apart from the areas south-east and south-west of Camp Road, these appear similar in size and composition to that recorded in the previous survey.

Coarse Grassland - COG1 and COG2

4.2.11 This **habitat has evolved** from amenity grassland as a result of minimal recent management of areas in the south-east of the site (COG1) and in the north-west of the site (COG2). Coarse grassland covers approximately 4.4ha. This lack of management has allowed a number of rank grassland species to become dominant. Cock's-foot (*Dactylis glomerata*) was abundant with frequent false oat-grass (*Arrhenatherum elatius*). Broadleaved-dock (*Rumex obtusifolius*), creeping cinquefoil (*Potentilla reptans*) and dove's-foot crane's-bill (*Geranium molle*) were also recorded.

4.2.12 **Species-Rich Hedgerow - RH1**

4.2.13 Species-rich hedgerow is to the south east boundary adjacent to farmland comprises frequent elm (*Ulmus procera*), hawthorn, elder, dog rose (*Rosa canina*) and occasional blackthorn (*Prunus spinosus*) and hazel and rare sycamore. Ivy is frequent within the ground layer of the hedgerow. sycamore. This habitat type has been designated a Habitat of Principal Importance under Section 41 of the NERC Act, 2006 since the previous survey so should now be taken into consideration.

Species-Poor Hedgerow - PH1-PH11

4.2.14 Species-poor hedgerow is present throughout the site but **was not previously specifically recorded**. PH1 is located in the east of the site. Beech (*Fagus sylvatica*) dominates this length of hedgerow with rare instances of hazel, hawthorn and sycamore. This habitat type has been designated a Habitat of Principal Importance under Section 41 of the NERC Act, 2006 since the previous survey so should now be taken into consideration.

4.2.15 PH2 runs parallel to PH1; this hedgerow is dominated by garden privet (*Ligustrum ovalifolium*) with occasional cherry laurel. Ivy (*Hedera helix*) is abundant in the ground layer of the hedgerow.

4.2.16 PH3 extends north from PH2 and has a similar vegetative composition to that of PH2 with garden privet dominant.

4.2.17 PH-4 and PH6 to PH11 extend along the two sides of camp road from east to west across the site. These well-managed, low hedges consist of frequent

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hawthorn and occasional sycamore. The ground layer of this hedgerow has abundant ivy and rare instances of broad-leaved dock.

- 4.2.18 PH5 is located in the north-west of the site and extends further west outside of the site boundary. Hawthorn is frequent with occasional elder and bramble. Both ivy and common nettle were frequently recorded within the under-storey of this hedgerow.

Species-Poor Hedgerow with Trees - PHT1-PHT3

- 4.2.19 Three lengths of species-poor hedgerow with trees are present on the eastern boundary of the site. Elm is frequent with occasional elder, dog rose and hawthorn. Ivy is frequent within the ground layer of the hedgerow.

Species-Rich Hedgerow with Trees - RHT1

- 4.2.20 RHT1 is located near the south-eastern boundary of the site and comprises native species including hawthorn.

Buildings and Hard-standing - B and HS

- 4.2.21 The remainder of the site consists of buildings and hard-standing totalling an area of approximately 42.8ha. The combination of buildings still in use and disused does not appear to have altered since the previous surveys were undertaken however, the buildings in the south-east of the site could provide additional bat roosting opportunities as they have become increasingly dilapidated since falling into disuse. The hard-standing on site includes roads and pavements.

4.3 **FIELD SURVEY - AREA ADJACENT TO CARAVAN PARK**

Habitats and Flora

- 4.3.1 The following Phase 1 habitat types were identified:

- Scattered broadleaved trees;
- Standing water;
- Running water;
- Amenity grassland;
- Species-rich hedgerow with trees;
- Dense scrub/ tall ruderal vegetation mosaic;
- Coarse grassland/ tall ruderal vegetation mosaic;

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4.3.2 These habitats are described below and their distribution is given on Figure 2.

Scattered Broadleaved Trees - SBW1

4.3.3 There are a number of semi-natural broadleaved trees scattered throughout the site predominantly with the dense scrub dominating the east of the site. Horse chestnut, cherry and willow (*Salix* sp.) were all occasionally recorded.

Standing Water - SW1

4.3.4 There is a concrete walled water tank in the north of the site covering an area of 0.008ha. There were no aquatic macrophytes recorded within this waterbody.

Running Water - RW1

4.3.5 A small stream runs from north to south through the centre of the site. The stream is shallow (between 10 and 20cm in depth). As this stream passes through the site it is over-shadowed by bramble and common nettle. As a result of this shading no aquatic macrophytes were present in this water course.

Amenity Grassland - AM

4.3.6 A large proportion of the site approximately 0.18ha consists of amenity grassland. Perennial rye-grass dominates this habitat with dandelion, plantain, white clover (*Trifolium repens*) and daisy present.

Species-rich Hedgerow with Trees - RHT2

4.3.7 The eastern boundary of this site is bordered by a species-rich hedgerow with trees. This hedgerow is dominated by hawthorn with occasional elm (*Ulmus* sp). Trees occasionally occurring within this hedgerow include horse chestnut.

Dense Scrub/Tall Ruderal Vegetation Mosaic - DS/TR1

4.3.8 The majority of this site consists of a mosaic of dense scrub and tall ruderal vegetation covering an area of approximately 0.22ha. Thick bramble dominates this habitat with frequent common nettle, abundant cleavers and locally frequent hedge garlic. Cherry (*Prunus* sp) and goat willow (*Salix caprea*) are scattered throughout.

Coarse Grassland/Tall Ruderal Vegetation Mosaic - COG/TR1

4.3.9 The dense scrub in the south of the site gives way to a coarse grassland tall ruderal vegetation mosaic covering approximately 0.01ha. Grass species

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recorded include abundant cock's foot and Yorkshire fog. Ruderal species include abundant common nettle (*Urtica dioica*) however, access was difficult in the west of this site so the species list was limited.

Fauna

4.3.10 The fauna recorded during the survey is listed in the table below.

Table 4: Fauna Incidentally Recorded on Site

Common Name	Species Name
Active badger sett (junction to east)	<i>Meles meles</i>
Grey squirrel	<i>Sciurus carolinensis</i>
Rabbit (droppings)	<i>Oryctolagus cuniculus</i>
Blackbird	<i>Turdus merula</i>
Chaffinch	<i>Fringilla coelebs</i>
Great tit	<i>Parus major</i>
Jay	<i>Garrulus glandarius</i>
Pied wagtail	<i>Motacilla alba</i>
Robin	<i>Erithacus rubecula</i>

5 LEGISLATION AND PLANNING POLICY ISSUES

5.1 BACKGROUND

5.1.1 The content of the legislation and planning policy section is the legislation and planning policy issues that we know are relevant based on this desk study and extended Phase 1 habitat survey. The legislation and policy issues that might arise following further surveys are excluded. Potential further ecological issues are discussed in Section 6. A detailed description of the method for this section is given in Appendix 1.

5.2 DESIGNATED SITES

5.2.1 The Ardley Trackways (SSSI) is approximately 1.5km away from the proposed development and is subject to planning conditions (APP/C3105/A08/2080594) relating to the adjacent Flying Field site. The proposals at the Site are unlikely to have a significant effect on this statutory designated site and its important attributes because:

- The development will be contained completely within the existing site footprint and is separated by semi-natural habitat;
- The development will not result in significant increase in emissions to air; and
- Pollution should be controlled during construction works in accordance with the Environment Agency pollution prevention guidelines.

5.2.2 For the same reasons, the proposed development should not have direct or indirect effects on Ardley Cutting and Quarry (SSSI) and the two non-statutory designated sites located within 2km of the development site and is therefore compliant with Policy EN24 of the Non-statutory Cherwell Local Plan (2011).

5.3 BIODIVERSITY ACTION PLAN PRIORITY HABITATS

5.3.1 There are three types of UKBAP Priority Habitat within 2km of the site, the closest being lowland calcareous grassland which is 0.6km from the site boundary and in the airfield north of the new settlement area. These habitats are also Habitats of Principal Importance (HPI) for the conservation of biodiversity as listed by the Secretary of State under Section 41 of the Natural Environment and Rural Communities Act (2006). Under Planning Policy Statement 9 (PPS9), the local planning authority should conserve these habitat types. The reasons listed in Section 5.2.1 should ensure that the development is unlikely to have an effect on any local UK Biodiversity

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Action Plan Priority Habitat and should also be consistent with PPS9 and Policy NRM5 of the Southeast Plan (2009). In addition these are subject to planning conditions (see 5.2.1).

5.3.2 The following UK Biodiversity Action Plan Priority Habitats were recorded on the newly-surveyed part of the site adjacent to the caravan park (see Figure 2 for habitats):

- The stream (RW1) bisecting this site separates amenity grassland and dense scrub;
- The species-rich hedgerow with trees (RHT2) to the east of this part of the site; and
- The native species-poor hedgerows (PH) to the northern boundary of the site along Camp Road.

5.3.3 These habitats should be retained and protected throughout the development. Planting of new sections of hedgerow could be used to compensate for any necessary losses and to ensure compliance with Policy EN37 of the non-statutory Cherwell Local Plan (2011). In addition, any proposed works undertaken adjacent to the stream RW1 will need to be carefully controlled in order to ensure compliance with Policy EN13 of the aforementioned local plan which states that “*river corridors will be protected and wherever possible enhanced*”.

5.4 ANCIENT WOODLAND

5.4.1 There are two areas of ancient woodland located within 2km of the site. The closest of these, Old Nursery, is situated 1.3km from the site. For the reasons listed in Section 5.2.1 the development is unlikely to have an effect on any local areas of ancient woodland and should be consistent with PPS9, and Policy EN37 of the Non-statutory Cherwell Local Plan (2011) which seek to protect ancient woodland from the adverse affects of development and enhance biodiversity where practicable.

5.5 OTHER HABITATS

Trees

5.5.1 Mature broadleaved trees are scattered throughout the sites. Policy EN37 of the non-statutory Cherwell Local Plan (2011) states that “*In exercising its development control functions the council will welcome opportunities for countryside management projects where all important trees, woodland and hedgerows are retained*”.

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- 5.5.2 Provided that trees to be retained are protected throughout the development in accordance with the guidelines detailed in the British Standard 5837 '*Trees in relation to construction*', the development should be compliant with Policy EN37 of the non-statutory Cherwell Local Plan (2011).
- 5.6 **PROTECTED SPECIES**
- 5.6.1 A number of common bird species were recorded on the site, some of which are most likely to breed on the site as suitable habitat is present. All birds, eggs and nests are protected from damage and destruction under the Wildlife and Countryside Act 1981, as amended. Timing tree and scrub removal activities outside the breeding bird season should minimise the risk of an offence.
- 5.6.2 An active badger sett was recorded under Chilgrove Road, north of its junction with Camp Road, to the east of the Site. Badgers are protected under the Protection of Badgers Act 1992. This Act makes it illegal to wilfully kill, injure or take any badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy or obstruct access to any part of a badger sett. At present the proposals should not have an effect on this sett, however badgers could use the site so care should be taken to ensure that they are protected from the effects of the development in line with the Badgers Act.
- 5.6.3 In addition to the legislation quoted, the ODPM circular 06/2005 states that the presence of protected species is a material consideration in the planning process, which is addressed in Policy EN25 of the non-statutory Local Plan (2004, saved policies). This states that, "*the presence of protected species is a material consideration in considering proposals for development. Policy EN25 seeks to protect them from development that would result in their loss or damage*".
- 5.7 **INVASIVE PLANT SPECIES**
- 5.7.1 Cotoneaster (*Cotoneaster horizontalis*) is present on the New Settlement Area part of the site and was listed as a non-native species from April 2010 under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (see target note TN1 on Figure 2). As it would be an offence to cause this species to grow in the wild outside of its current extent, steps should be taken throughout the development to ensure that this does not occur.
- 5.8 **ECOLOGICAL ENHANCEMENT**
- 5.8.1 Central and local government policy now points towards ecological enhancement on development sites. For example, PPS9 states that "*plan*

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policies should promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development. Policy EN36 of the non-statutory Cherwell Local Plan (2011) states that, “*the council will seek opportunities to secure the enhancement of the character and appearance of the landscape*”.

- 5.8.2 The development proposals include measures to enhance biodiversity as set out in Section 2.1.1 and should therefore be consistent with these policies.

6 POTENTIAL FURTHER ECOLOGICAL ISSUES

6.1 GREAT CRESTED NEWTS

6.1.1 The water tanks spread across the Site and in the part of the site adjacent to the caravan park have been found to support populations of great crested newts (Evans, 2007 and 2008). Mitigation has been proposed in a previous planning application but the changes to the planning application for this part of the site requires that updated surveys and mitigation are carried out to inform the current use of the Site by great crested newts.

6.1.2 The dense scrub and hedgerows present on the Site and the broadleaved woodlands present to the east of the Site (connected by suitable habitat including hedgerows) have the potential to be used as great crested newt terrestrial habitat. Great crested newts and their habitats are strictly protected by legislation and national planning policy, including the following; Conservation of Habitats and Species Act 2010, Wildlife and Countryside Act 1981, as amended, Countryside and Rights of Way Act 2000, Natural Environment and Rural Communities Act 2006 and Planning Policy Statement 9.

6.1.3 Great crested newts are also Priority Species in the UK Biodiversity Action Plan and Species of Principal Importance for nature conservation in England under Section 41 of the NERC Act 2006. This places a duty on all public authorities to have regard to the conservation of biodiversity, including local planning authorities and statutory undertakers.

6.2 REPTILES

6.2.1 The coarse grassland in the south-east and the north-west of the Site, the dense scrub and tall ruderal vegetation in the area of land adjacent to the caravan park have the potential to support populations of reptiles. Surveys are recommended to establish whether reptiles have colonised this habitat from adjacent farmland since previous surveys found them absent.

6.2.2 All reptiles are protected by the Wildlife and Countryside Act 1981, as amended, from intentional killing, injuring and selling only. In addition all reptiles are listed as Priority Species in the UK Biodiversity Action Plan (HM Government 1994 *et seq.*). As a Priority Species in the UK Biodiversity Action Plan, all reptiles are also listed as Species of Principal Importance for the Conservation of Biodiversity in England under Section 41 of the NERC Act 2006.

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6.3 BATS

6.3.1 A number of trees and buildings on the Site have the potential to support roosting bats. Bat roosts have previously been recorded in buildings on the Site (Evans 2007; Evans 2008) including a pipistrelle maternity roost, and brown long-eared bats were recorded in previous surveys and the desk studies (2007 and 2010). In order to identify any impacts from the Development on this species group, further surveys are therefore recommended to establish the current use of the Site by bats.

6.3.2 All British bat species are fully protected under the Conservation of Habitats and Species Act 2010, the Wildlife and Countryside Act 1981 (as amended) and Countryside and Rights of Way Act 2000 from killing or causing injury to the bats themselves and disturbance, damage and destruction of their roosts.

6.4 BADGERS

6.4.1 Areas of hedgerow and dense shrub and woodlands within 500m of the eastern boundary of the Site have the potential to support a badger sett. Badger setts have been identified previously in these woodlands and the Flying Field (Evans, 2007). The desk study also provided records of badgers within 2km of the Site. Badgers are fully protected from disturbance and injury through the Protection of Badgers Act 1992.

6.4.2 Inspection of the site of a recorded badger sett to the south of Chilgrove junction with Camp Road, found no evidence of current use, though rabbits appeared to be resident. However, on the northern side of this junction there were several badger setts (see TN2 on Figure 2) which appear to constitute a main sett currently in use. There were at least ten holes counted and these entered the area under the tarmaced lane. In the Flying Field part of the Site, already conditioned under the current planning permission, no evidence of a badger path was seen where previously identified under the pillbox to the north of the Flying Field, shown on the maps accompanying the EIA. Holes were present which could be used by badgers, although a female fox and two cubs were reportedly seen regularly here. Badgers could therefore occasionally be present on the Site, possibly with outlier setts occurring prior to development. Checks would therefore need to be made to ensure that there is no possibility of an offence being caused under the Protection of Badgers Act 1992.

6.5 OTTERS

6.5.1 Otters were recorded as being found within 2km of the site during the desk study. Otters and their habitats are strictly protected by both European and

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national legislation and national planning policy, including the following; The Conservation of Habitats and Species Regulations 2010, the Wildlife and Countryside Act 1981, as amended, Countryside and Rights of Way Act 2000, Natural Environment and Rural Communities Act 2006; and Planning Policy Statement 9. The Site itself, however, does not contain any habitat which could support otters. There are therefore no potential further ecological issues with regards to otters and this development.

6.6 BIODIVERSITY ACTION PLAN PRIORITY SPECIES

6.6.1 The stream RW1 that runs through the caravan park is suitable habitat for the pea mussel (*Pisidium tenuilineatum*). Six species of butterfly were recorded within 1km of the Site. There is habitat in the form of suitable food plants present on the site for three of these species. Two species of bird, the lapwing (*Vanellus vanellus*) and the tree sparrow (*Passer montanus*) were also recorded. However, lapwing are unlikely to nest on any part of the New Settlement Area site or the three additional areas surveyed as there is limited suitable habitat available.

6.6.2 The airfield to the north of the Site offers extensive habitat for these ground nesting birds and protection and monitoring is included in planning conditions attached to planning reference number APP/C3105/A/08/2080594 dated 11th January 2010.

6.6.3 As UKBAP Priority Species they are also listed as Species of Principal Importance under Section 41 of the NERC Act (2006). This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species.

6.6.4 In line with relevant legislation and planning policy, should habitat with potential to support these species be affected by the current, or future, proposals mitigation is recommended focusing on the retention and protection, or replacement of habitat

6.7 BIRDS OF CONSERVATION CONCERN

6.7.1 A number of birds on the red and amber list for birds of conservation concern were recorded within 1km of the site. These species receive no specific legal or policy protection over and above the general protection of all birds by the Wildlife and Countryside Act 1981 (as amended).

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7 APPENDIX 1 PHASE 1 HABITAT SURVEY SPECIES LISTS

7.1 UPDATE OF NEW SETTLEMENT AREA - ADDITIONAL HABITATS AT THE SITE

Scattered Scrub - SS

Common Name	Species Name	DAFOR
Butterfly-bush	<i>Buddleja davidii</i>	A
Bramble	<i>Rubus fruticosus</i> agg.	F
Hawthorn	<i>Crataegus monogyna</i>	F
Elder	<i>Sambucus nigra</i>	O

Coarse grassland - COG1

Common Name	Species Name	DAFOR
Cock's-foot	<i>Dactylis glomerata</i>	A
False-oat grass	<i>Arrhenatherum elatius</i>	F
Cow Parsley	<i>Anthriscus sylvestris</i>	O
Lesser celandine	<i>Ranunculus ficaria</i>	O
Creeping cinquefoil	<i>Potentilla reptans</i>	O
Dandelion	<i>Taraxacum officinale</i> agg.	O
Bramble	<i>Rubus fruticosus</i> agg.	O
Dove's-foot Crane's-bill	<i>Geranium molle</i>	O
Ribwort plantain	<i>Plantago lanceolata</i>	O
Yorkshire-fog	<i>Holcus lanatus</i>	O
Broad-leaved dock	<i>Rumex obtusifolius</i>	O

Coarse Grassland - COG2

Common Name	Species Name	DAFOR
Creeping bent	<i>Agrostis stolonifera</i>	LA
Red fescue	<i>Festuca rubra</i> agg.	LA
Yarrow	<i>Achillea millefolium</i>	F

Species-poor hedgerow - PH1

Common Name	Species Name	DAFOR
Beech	<i>Fagus sylvatica</i>	D
Hazel	<i>Corylus avellana</i>	R

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Common Name	Species Name	DAFOR
Hawthorn	<i>Crataegus monogyna</i>	R
Sycamore	<i>Acer pseudoplatanus</i>	R

Species-poor Hedgerow - PH2

Common Name	Species Name	DAFOR
Garden privet	<i>Ligustrum ovalifolium</i>	D
Ivy	<i>Hedera helix</i>	A
Cherry laurel	<i>Prunus laurocerasus</i>	O

Species-poor Hedgerow - PH3

Common Name	Species Name	DAFOR
Garden privet	<i>Ligustrum ovalifolium</i>	D

Species-poor Hedgerow - PH4- and PH6-11

Common Name	Species Name	DAFOR
Ivy	<i>Hedera helix</i>	A
Hawthorn	<i>Crataegus monogyna</i>	F
Sycamore	<i>Acer pseudoplatanus</i>	O
Broad-leaved dock	<i>Rumex obtusifolius</i>	R

Species-poor Hedgerow - PH5

Common Name	Species Name	DAFOR
Common nettle	<i>Urtica dioica</i>	F
Hawthorn	<i>Crataegus monogyna</i>	F
Ivy	<i>Hedera helix</i>	F
Elder	<i>Sambucus nigra</i>	O
Bramble	<i>Rubus fruticosus agg.</i>	O

Species-poor Hedgerow with Trees - PHT1-3

Common Name	Species Name	DAFOR
Elm	<i>Ulmus procera</i>	F
Ivy	<i>Hedera helix</i>	F
Elder	<i>Sambucus nigra</i>	O

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Common Name	Species Name	DAFOR
Hawthorn	<i>Crataegus monogyna</i>	O
Dog rose	<i>Rosa canina</i>	O

Species-rich Hedgerow with Trees - RHT1 and 2

Common Name	Species Name	DAFOR
Hawthorn	<i>Crataegus monogyna</i>	F
Ivy	<i>Hedera helix</i>	F
Elm	<i>Ulmus procera</i>	F
Elder	<i>Sambucus nigra</i>	O
Horse chestnut	<i>Aesculus hippocastanum</i>	O
Dog rose	<i>Rosa canina</i>	O

7.2 AREA ADJACENT TO CARAVAN SITE

Scattered Broadleaved trees - SBW1

Common Name	Species Name	DAFOR
Horse chestnut	<i>Aesculus hippocastanum</i>	O
Hawthorn	<i>Crataegus monogyna</i>	O
Ivy	<i>Hedera helix</i>	O
Wild cherry	<i>Prunus avium</i>	O
a willow	<i>Salix spp.</i>	O

Amenity Grassland - AM1

Common Name	Species Name	DAFOR
Perennial rye-grass	<i>Lolium perenne</i>	D
White clover	<i>Trifolium repens</i>	F

Species-poor Hedgerow with Trees PHT1-

Common Name	Species Name	DAFOR
Lawson's cypress	<i>Chamaecyparis lawsoniana</i>	D
Horse chestnut	<i>Aesculus hippocastanum</i>	F

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Dense Scrub/Tall Ruderal Vegetation Mosaic - DS/TR1

Common Name	Species Name	DAFOR
Bramble	<i>Rubus fruticosus agg.</i>	D
Cleavers	<i>Galium aparine</i>	A
Common nettle	<i>Urtica dioica</i>	F
Garlic mustard	<i>Alliaria petiolata</i>	LF

Coarse Grassland/Tall Ruderal Vegetation Mosaic - COG/TR1

Common Name	Species Name	DAFOR
Cock's-foot	<i>Dactylis glomerata</i>	A
Yorkshire-fog	<i>Holcus lanatus</i>	A
Common nettle	<i>Urtica dioica</i>	F