Sandleford Park, Newbury

Appendix F1: Ecological Appraisal

Bloor Homes and Sandleford Farm Partnership

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The Pavilion, 1st Floor, Botleigh Grange Office Campus, Hedge End, Southampton, Hampshire, SO30 2AF

Tel: 02382 022800

Email: ecology@wyg.com

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Prepared by:		Ben Cooke GradCIEEM **Consultant Ecologist**
Checked By:		Kevin Wood GradCIEEM **Senior Ecologist**
Verified By:		Tamsin Clark MCIEEM **Associate Ecologist**

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1	December 2018	TC	BC	Updated to duplicate application 3a. To include updated survey results & additional information re springs / seepages, marshy grassland and woodland.
2	February 2019	TC	N/A	Updated as ES addendum to application 3a

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Executive Summary

Contents	Summary
Site Location	The site is located at Sandleford Park in Newbury, West Berkshire, centred on OS Grid Reference SU 46847 64550. The site comprises agricultural fields with areas of grassland and several copses of ancient woodland. A central valley runs from the north-western corner of the site towards the River Enborne at the site's southern boundary.
Existing Site Information	WYG completed an initial ecological appraisal in 2008 with update surveys completed in 2011, 2013, 2015, 2016 and 2017. In addition, a number of protected species surveys have been completed at the site during 2018.
Scope of this Survey(s)	An updated Ecological Appraisal including a update desk-based study and an extended Phase 1 habitat survey. The desk-based study used online resources and information sourced from the Local Ecological Records Centres.
Results	The habitats on-site have broadly remained unaltered from those described during the previous surveys. The habitat on-site continues to provide suitability for a range of protected species including roosting bats, badgers, dormice, GCN, reptiles and invertebrates.
Recommendations	**Avoidance recommendations;** • It is recommended that mature trees, hedgerows, scrub and on-site waterbodies are retained where possible on-site. • It is recommended that on-site woodland is retained and that any access is restricted, or follows predetermined pathways through the woodland. • Pre-commencement badger survey. • With regards to watercourses, standard good environmental practice in accordance with the Environment Agency's Pollution Prevention Guidelines should be implemented during construction. • Appropriate treatment should be implemented to eradicate Japanese knotweed, Himalayan balsam, Himalayan cotoneaster and New Zealand pygmyweed from the site prior to development commencing. **Further survey recommendations;** • Further surveys for specific species and habitats have been completed over the past few years, including summer 2018.

Glossary

Badger Act	Protection of Badgers Act 1992
BCT	Bat Conservation Trust
BoCC	Bird(s) of Conservation Concern
BTO	British Trust for Ornithology
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology & Environmental Management
CRoW Act	Countryside and Rights of Way Act 2000
EcIA	Ecological Impact Assessment
EMMP	Ecological Mitigation and Management Plan
EPS	European Protected Species
EPSL	European Protected Species Licence
GCN	Great crested newt
Habitats Regulations	Conservation of Habitats and Species Regulations 2017
HAP	Habitat Action Plan
HBIC	Hampshire Biodiversity Information Centre
Hedgerow Regulations	Hedgerow Regulations 1997
HPI	Habitat(s) of Principal Importance
JNCC	Join Nature Conservancy Council
LERC	Local Ecological Record Centre
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
LPA	Local Planning Authority
LWS	Local Wildlife Site
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
NE	Natural England
NERC Act	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	Revised National Planning Policy Framework (2018)
PEA	Preliminary Ecological Appraisal
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site(s) of Special Scientific Interest
TVERC	Thames Valley Environmental Records Centre
W&CA	Wildlife & Countryside Act 1981

1.0 Introduction

1.1 Background

WYG was commissioned by Bloor Homes and Sandleford Farm Partnership in December 2018 to update the Ecological Appraisal report to inform an ES addendum for application 3a of the site known as Sandleford Park, Newbury.

This report has been prepared by Consultant Ecologist, Ben Cooke, GradCIEEM.

1.2 Site Location

The site is located at Sandleford Park in Newbury, West Berkshire and is centred at Ordnance Survey National Grid Reference SU 46847 64550. The survey area, hereafter referred to as the 'site', is shown on Figure 1 and comprises of agricultural fields with areas of grassland and several copses of ancient woodland dispersed throughout. A central valley runs from the north-western corner of the site towards the River Enborne at the site's southern boundary.

For details of the development description, please see the main ES chapter.

1.3 Purpose of the Report

The objectives of this is assessment are to carry out:

An updated assessment of the potential ecological receptors present on site, any constraints they pose to future development and any recommendations for any further surveys, avoidance, mitigation or enhancement measures that are needed (as appropriate).

Note that, where possible, common names for flora and fauna have been used throughout this report for ease of reading.

2.0 Methodology

2.1 Desk Study

2.1.1 Previous Reports

WYG completed an initial ecological appraisal in 2008 with update surveys completed in 2011, 2013, 2015, 2016 and 2017 (. Additional species and vegetation surveys were have been completed since this time, including some during 2018.

A number of protected species surveys have been completed at the site including great crested newt presence/ likely absence, reptile presence/ likely absence, dormouse, white clawed crayfish, aquatic invertebrate, terrestrial invertebrate, breeding bird (including specific nightjar surveys), barn owl, badger, bat roost assessment of trees and buildings, bat emergence/ return survey of trees and buildings with bat roosting potential, bat hibernation surveys, bat foraging and commuting surveys and an otter and water vole survey.

Fauna and habitat surveys include fungi, woodland, grassland and arable plants.

2.1.2 Local Ecological Records Centre

Information was requested from both HBIC and TVERC in November 2017 for information on any nature conservation designations and protected or notable species records within 2 km of the site.

The data search covers:

- Statutory designated sites for nature conservation, namely SACs, SPAs, Ramsar sites, SSSIs, NNRs and LNRs;
- Non-statutory designated sites for nature conservation, namely LWS;
- Legally protected species, such as great crested newts, bats and badger;
- Notable habitats and species, such as those listed as Habitats or Species of Principal Importance; and
- Priority habitats or species within both HBIC and TVERC areas.

The data search did not cover:

- Tree Preservation Orders (TPOs); or
- Conservation Areas designated for their special architectural and historic interest.

2.1.3 Online Resources

A search for relevant information was also made on the following websites:

MAGIC www.magic.gov.uk - DEFRA's interactive, web-based database for statutory designations and information on any EPSL applications that have been granted in the local area since 2009.

NBN Atlas https://nbnatlas.org/ - for records of protected and notable species.

Note that the use of some NBN Atlas data is limited (e.g. commercial use of data provided under a CC BY-NC licence is not possible) therefore we may not be able to report full details of those records in such cases.

2.2 Field Surveys

The following methodologies have been used to identify the ecological receptors present on or near the site, which are relevant to the proposed development.

2.2.1 Habitats

An extended Phase 1 habitat survey was undertaken on the site on 6th December 2017 by WYG Consultant Ecologist, Ben Cooke, GradCIEEM. The weather conditions were overcast with light snowfall, which did not settle.

The vegetation and broad habitat types within the site were noted during the survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (Joint Nature Conservation Committee, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (2010). The site was also appraised for its suitability to support notable flora, with regard to the CIEEM Guidelines for Preliminary Ecological Appraisal (2017).

2.2.2 Protected & Notable Species

The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations, Schedule 5 of the W&CA, the CRoW Act, those given extra protection under the NERC Act, and species included in the Hampshire LBAP. There are presently no targets for species within the Berkshire LBAP.

Great Crested Newt

The site was appraised for its suitability to support GCN. The assessment was based on Guidance outlined in the Joint Nature Conservation Committees' published *Herpetofauna Workers' Manual* (Gent & Gibson, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Becket & Foster, 2001).

Bats

Roosting bats – Buildings/structures/trees

Any suitable buildings, structures or trees on site were assessed from the ground for their suitability to support breeding, resting and hibernating bats using survey methods based on the BCT *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd ed, 2016) – hereafter referred to as the 'BCT Guidelines'. The following system has therefore been used to categorise the bat roost suitability of any features found:

Table 1 Categories of Bat Roost Suitability (BCT Guidelines)

Suitability	Typical Roosting Features
Negligible	Negligible habitat feature on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding

Suitability	Typical Roosting Features
	habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions & surrounding habitat.

Foraging/commuting bats

The BCT Guidelines use the following criteria to categorise the potential value of habitats and features for use by foraging and commuting bats and these have been used to characterise the value of this site:

Table 2 Categories of Habitat Suitability (BCT Guidelines)

Suitability	Typical Foraging & Commuting Features
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the Joint Nature Conservation Committees' published *Herpetofauna Workers' Manual* (Gent & Gibson, 2003).

Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1989).

Hazel Dormice

The site was surveyed for its suitability to support hazel dormice. The assessment was based on guidance outlined in Bright *et al*. (2006).

Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians, birds and invertebrates with regard to CIEEM's *Guidelines for Preliminary Ecological Appraisal* (2017) and *BS42020:2013 Biodiversity – Code of Practice for Planning and Development*. Evidence of any current or historical presence of such species was recorded.

2.2.3 Invasive Species

The site was searched for evidence of invasive plant species, such as Japanese knotweed, Himalayan balsam, giant hogweed, wall cotoneaster and rhododendron – however see Appendix A for a full list.

2.3 Limitations

The optimal period to undertake an extended Phase 1 habitat survey is April-September. The survey was completed in December which is outside the optimal survey window. Although the survey was completed during this time, the current report represents the fifth iteration describing the overall ecological state of the site. As such, based on previous descriptions the site remains relatively unchanged throughout each updated report. Therefore it is not considered to be a limitation to the accurate assessment of the habitats and the dominant species of the respective vegetation types were visible and identifiable.

To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under UK or European wildlife legislation. This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, given that we have completed suites of protected species surveys at the site over the past 10 years, we have high confidence in our understanding of the habitats on site.

The details of this report will remain valid for a period of **two years** from the date of the survey (i.e. until December 2019), after which the validity of this assessment should be reviewed to determine whether further updates are likely to be required. Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be are any changes to the red line boundary or development proposals which this report was based.

3.0 Baseline Conditions

3.1 Designated Sites

The following designated site of nature conservation importance have been identified within 2km of the site.

Table 3 Designated Sites within 2km

Designation	Site Name	Distance & Direction	Summary of features
SSSI	Greenham & Crookham Common	0.4km, E	Extensive complex of heathland, grassland, gorse scrub, broadleaved woodland and alder lined gullies. The site also includes a large ancient coppice woodland, Peckmoor Copse. The heathland and acid grassland within the SSSI comprises the single largest tract of these habitats within the County. Four species of reptiles are found within the SSSI (adder, common lizard, grass snake and slow worm). In addition, all three native newt species have been identified within the SSSI. A wide range of invertebrates and breeding birds are also located within the SSSI.
SSSI	River Kennet	1.8km, N	A river situated within a chalk catchment which had been modified in the past by the construction of the Kennet and Avon Canal. The river flows through substantial areas of undisturbed marshy grassland, wet woodland and reedbeds. The flora along the river is species-rich and diverse with a clear succession in plant communities reflects variations in the geology. Aquatic invertebrates are abundant with the river noted for large hatchings of mayflies which are of local distribution. The river supports good populations of kingfisher, mute swan and little grebe.
LNR	Herbert Plantation	1.3km, SSE	A mixed woodland of oak, birch, alder and pine.
LWS	High Wood Complex	On-site	A group of six semi-natural ancient woodlands (Crooks' Copse, Slockett's Copse, Barn Copse, High Wood, Dirty Ground Copse, Gorse Covert) with an encroachment of sycamore. The woodlands are dominated by oak with

Designation	Site Name	Distance & Direction	Summary of features
			hazel abundant in the understorey. Bluebells are often the dominant ground flora through the woodlands.
LWS	Waterleaze Copse	On-site	Area of ancient semi-natural woodland dominated by oak, adjacent to the River Enborne with areas of wet alder. The woodland also contains ash, sycamore, downy birch and crack willow. Ground flora is dominated by bracken and creeping soft-grass.
LWS	Enborne Meadow	0.11km, SE	Semi-improved grasslands which retain a significant element of unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions/ Sites which support one or more notable species.
LWS	Brick Kiln Copse	0.14km, W	A broadleaved copse with an area of wet woodland. A variety of species comprise the canopy including oak, silver birch and rowan. Ground flora contains several ancient woodland indicator species including bluebell, primrose and hard fern.
LWS	Alder Field Fen	0.16km, S	Semi-improved grasslands which retain a significant element of unimproved grassland.
LWS	Wood Fen, Oakleaze Farm	0.22km, SSW	Semi-improved grasslands which retain a significant element of unimproved grassland.
LWS	Oakleaze Farm Meadow 2	0.22km, SSW	Semi-improved grasslands which retain a significant element of unimproved grassland.
LWS	Oakleaze Farm Meadow 1	0.45km, SSW	Agriculturally unimproved grassland/ Sites which support one or more notable species.
LWS	Corporation Copse	0.47km, SSW	Small open copse comprised of a silver birch and oak with an understorey and of hazel. The ground flora consists of creeping soft-grass, bluebell and wood sorrel.
LWS	Falkland Farm Meadow East	0.56km, SSW	Semi-improved grasslands which retain a significant element of unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that

Designation	Site Name	Distance & Direction	Summary of features
			support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Oakridge, Newton Common	0.6km, SSW	Agriculturally unimproved grassland.
LWS	Newtown Grange	0.81km, SSE	Ancient semi-natural woodlands/ Other semi-natural woodland if; (ii) they comprise important community types of restricted distributions in the County, such as yew woods and alder swamp woods/ Pasture woodland and wooded commons, not included in any of the above, which are of considerable biological and historical interest/ Sites which support one or more notable species.
LWS	Newtown Common (West)	0.81km, S	Pasture woodland and wooded commons, not included in any of the above, which are of considerable biological and historical interest/ Areas of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub/ Areas of heathland which are afforested or have succeeded to woodland if; (i) they retain significant remnants of heathland vegetation which would enable their recovery/ Sites which support one or more notable species.
LWS	Large Copse Meadow	0.86km, SW	Grasslands which have become improvised through inappropriate management but which retain sufficient elements of relic unimproved grassland to enable recovery.
LWS	Falkland Farm Meadow 5	0.88km, SW	Agriculturally unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Falkland Farm Meadow 3	0.95km, SW	Agriculturally unimproved grassland.
LWS	Large Copse	0.98km, SW	Ancient semi-natural woodland.
LWS	Newtown Common (East)	0.98km, SSE	Pasture woodland and woodland commons, not included in any of the above, which are of considerable biological and historical interest/ Areas

Designation	Site Name	Distance & Direction	Summary of features
			of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub/ Areas of heathland which are afforested or have succeeded to woodland if; (i) they retain significant remnants of heathland vegetation which would enable their recovery / Sites which support one or more notable species.
LWS	Arbuthnot Wood & Crambow Gully	1.1km, SE	Ancient semi-natural woodland/ Other semi-natural woodland if; (ii) they comprise important community types of restricted distribution in the County, such as yew woods and alder swamp woods
LWS	Sheepwash Farm Meadow 1	1.2km, S	Semi-improved grasslands which retain a significant element of unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Sheepwash Farm Meadow 2	1.36km, S	Semi-improved grasslands which retain a significant element of unimproved grassland.
LWS	Falkland Farm Meadow 2	1.37km, SW	Semi-improved grasslands which retain a significant element of unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Falkland Farm Meadow 1	1.41km, SW	Agriculturally unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Burghclere Common	1.42km, SSE	Areas of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub/ Areas of heathland which are afforested or have succeeded to woodland if; (i) they retain significant remnants of heathland vegetation which would enable their recovery.

Designation	Site Name	Distance & Direction	Summary of features
LWS	Deadmoor Lane Meadow, Newtown Common	1.53km, SSW	Agriculturally unimproved grassland.
LWS	Glebe Place Meadow	1.55km, SSW	Agriculturally unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Wash Water Field	1.6km, SW	Agriculturally unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Fordfields Meadows	1.63km, SSW	Semi-improved grasslands which retain a significant element of unimproved grassland/ Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permeant) conditions.
LWS	Rosemoor Copse	1.63km, SE	Ancient semi-natural woodland/ Other woodland if; they comprise important community types of restricted distribution in the County, such as yew woods and alder swamp woods.
LWS	Oaken Copse	1.64km, WNW	Small ancient woodland with oak, birch some cherry with hazel coppice. An area of coppiced small-leaved lime is also present within the woodland. Ground flora includes green hellebore, bluebell and yellow archangel.
LWS	Herbert Plantation	1.73km, SSE	Ancient semi-natural woodland/ Other woodland where there is a significant element of ancient semi-natural woodland surviving/ Other semi-natural woodland if; (ii) they comprise important community types of restricted distribution in the County, such as yew woods and alder swamp woods/ Sites which support one or more notable species.
LWS	Little Hitchens Copse	1.8km, SSW	Ancient semi-natural woodland.
LWS	Sydmonton Common & Lower Burnoak Copse	1.8km, SE	Ancient semi-natural woodland/ Areas of heathland which are afforested or have succeeded to woodland if; (ii) they are

Designation	Site Name	Distance & Direction	Summary of features
			contiguous with, or form an integral part of an open area of heathland.
LWS	Lillismoor Copse	1.92km, SE	Ancient semi-natural woodland/ Other woodland where there is a significant element of ancient semi-natural woodland surviving/ Other semi-natural woodland if; (ii) they comprise important community types of restricted distribution in the County, such as yew woods and alder swamp woods.
LWS	Wash Water Railway Field	1.9km, SW	Agriculturally unimproved grassland.
LWS	Redding Copse & Lushy Gully	1.94km, W	Redding Copse consists of predominantly oak and hazel with some areas of alder with pockets mixed conifers. The woodland is used for pheasant rearing. Lushy Gully has a mixed canopy and areas of dense rhododendron understory spilt in two by the A34.
LWS	Hicthens Copse & Clearing	2km, SSW	Ancient semi-natural woodland/ Other woodland where there is a significant element of ancient semi-natural woodland surviving/ Other semi-natural woodland if; (ii) they comprise important community types of restricted distribution in the County, such as yew woods and alder swamp woods.
LWS	Earlstone Common	2km, SSE	Pasture woodland and wooded commons, not included in any of the above, which are of considerable biological and historical interest/ Areas of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub/ Areas of heathland which are afforested or have succeeded to woodland if; (i) they retain significant remnants of heathland.
LWS	Great Pen Wood	2km, SW	Other woodland where there is a significant element of ancient semi-natural woodland surviving.
LWS	West Wood	2km, NNE	Semi-natural ancient woodland with a canopy dominated by ash and alder with ash and oak. Willow is found within wetter areas. The woodland understory is dominated by hazel with bramble

Designation	Site Name	Distance & Direction	Summary of features
			covering the ground. Wetland species are also found such as marsh marigold.
LWS	Burntcroft Copse	2km, SSE	Ancient semi-natural woodland/ Other woodland where there is a significant element of ancient semi-natural woodland surviving/ Other semi-natural woodland if; (ii) they comprise important community types of restricted distribution in the County, such as yew woods and alder swamp woods.

3.1.1 Ancient Woodland

There are 7 units of ancient and semi-natural woodland within the site boundary (Figure 2), including:

- Crook's Copse which covers approximately 2.31 ha;
- High Wood (group of scattered trees to west of Slockett's Copse) which covers approximately 0.27 ha;
- High Wood (Slockett's Copse) which covers approximately 2.67 ha;
- High Wood which covers approximately 8.92 ha;
- Dirty Ground Copse which covers approximately 2.45 ha;
- Barn Copse woodland which covers approximately 2.54 ha and lies to the west of Slockett's Copse.
- Waterleaze Copse woodland which covers approximately 5.41 hectares and lies along the southern boundary.

There are 38 ancient semi-natural woodland blocks within 2km of the site boundary, the closest of which is an unnamed area of woodland, 500 metres to the south of the site.

There are 16 ancient, replanted woodland blocks within 2km of the site boundary, the closest of which is 1.9km to the south west of the site.

All woodlands on site are recognised as "Ancient" (listed under the national Ancient Woodland Inventory) and all appear on the 1877 Ordnance Survey First Edition Map. Waterleaze Copse bordering the River Enborne has reduced in size considerably since 1977 and Gorse Covert, as its name suggests, was largely open scrub at that stage. Generally the other woodlands have not changed in shape or size since the early maps of the site.

3.2 Habitats

The following habitats have been identified, with an updated assessment completed in May 2018:

3.2.1 Broad-leaved Semi-natural Woodland

There are seven main woodland blocks on-site, which form a network of semi-natural broadleaved woodland habitats in proximity to each other and largely connected by hedgerows and wide grassy

tracks and banks. The central core of woodlands is set in a confined valley system and within a mosaic of wet grassland and semi-improved acid grassland.

The woodlands are currently managed for game purposes and several have large pheasant release pens within them and feeding stations scattered throughout. No visible evidence of sylvicultural practices were found during the survey apart from clearance for game shooting rides and the tidying of fallen trees.

Waterleaze Copse

The largest woodland on-site (13.6ha) is comprised of two elements, a dry acidic woodland in the elevated regions with a strip of wet woodland bordering the River Enborne.

The woodland is well-drained, acidic to neutral with relatively sparse ground flora. Bracken tends to dominate the woodland edge and the more open areas of the woodland. Nettles have colonised woodland edge bordering the arable fields.

The trees are typically mature with specimens of oak, beech, horse chestnut and silver birch, however sycamore has colonised extensively and is locally dominant. Sycamore is found in seedling, sapling, semi-mature and mature forms, indicating a long period of colonisation. The trend is towards the domination of this species within the woodland. The shrub understorey is relatively sparse, but in places is dominated by dense hazel, holly and elder, the latter in the disturbed areas near the pheasant release pen.

Parts of the woodland on the upper edge on the east side are considered to fit W10a *Quercus robur – Pteridium aquilinum-Rubus fruticosus* woodland typical subcommunity, while the drier, large bank down to the river at the east end has extensive creeping soft-grass and is considered to fit the W10e *Acer pseudoplatanus-Oxalis acetosella* subcommunity. The woodland upstream of the pond at SU471641 is considered to be W6a *Alnus glutinosa – Urtica dioica* woodland typical subcommunity.

The woodlands along the flood plain are more complex. On the wetter soils there are alders with nettles and these fit the W6a *Alnus glutinosa – Urtica dioica* woodland typical subcommunity. On the slightly more raised soils there are large areas of dominant ramsons, which is usually typical of the W8f *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland *Allium ursinum* subcommunity, yet these are also partly under alder, not a typical canopy associate of W8e and many of the other W8 constants are sparse or absent. The 2014 survey noted large areas of ramsons that are not characteristic of the W6 woodlands (though known in the W6d *Sambucus nigra* subcommunity) and the 2019 survey accepts this classification of these stands as W6 though they could be considered to grade into W8f where there is more sycamore.

During previous surveys conducted during the optimum survey period (2014), twenty ancient woodland indicator species have been identified in this area in addition to the bryophyte *Cryphaea heteromalla*. This species has a restricted distribution within Berkshire but is relatively common nationally. Waterleaze Copse also contains a small population of thin-spiked wood-sedge which has a restricted distribution in Berkshire.

The High Wood complex:

This complex of woodlands (designated as a LWS, see Table 3 Section 3.1) comprises six separate copses on-site. All have similar communities present and are typically well drained, acidic oak–bracken-wood sorrel woodland types (affinities with the W10e sub community NVC type). Brief information on each is given below:

Barn Copse

This gently sloping, north-facing wood has large areas of dense holly with little ground flora, but where there is ground flora this is composed of patchy carpets of bluebells and creeping soft-grass with frequent wood sorrel, and sparse bracken and bramble. The canopy is mixed sycamore and pedunculate oak, with occasional ash.

In the areas with little or no ground flora this considered to fit W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland typical subcommunity. Where there is ground flora, the community is considered to be the W10e *Acer pseudoplatanus-Oxalis acetosella* subcommunity.

High Wood

A large ancient woodland (approx. 8.9ha), situated centrally within the site. The woodland holds the largest pheasant release pen found on-site, which appears not to have had a major impact on the woodland. The woodland is structurally diverse with evidence of forestry management activity noted in the 2013 survey.

This large wood is quite varied. There is a large pheasant pen on the east side (not entered), a small area of neglected sweet chestnut coppice in the centre and a few planted conifers (larch, Sitka spruce and silver fir) and some dense areas of holly with little ground flora, especially across the middle of the wood. However, the southern end is quite open with extensive glades of creeping soft-grass or mixed creeping soft-grass and bluebell as are areas on the east and north side, and occasionally on the west side. As with Barn Copse and Dirty Ground Copse, these are considered to be W10e *Acer pseudoplatanus-Oxalis acetosella* subcommunity rather than the W10a typical subcommunity.

Ten Ancient Woodland Indicator species were recorded during the Woodland NVC survey in 2014 (Appendix F17) within High Wood with access restricted in places due to the pheasant release pen.

Slockett's Copse

An acidic oak hazel woodland (approx. 2.6ha), with a mature understory of hazel. This woodland is also managed for game purposes, but no pheasant release pens are present. The ground flora is considered to be species rich although few ancient woodland indicator species were recorded in 2014 (Appendix F17).

Similar to Barn Copse and parts of High Wood, this copse has some very dense areas of holly and small areas of open ground flora with bluebells and wood sorrel, but less creeping soft-grass overall (probably more shaded). This is considered to fit the W10e *Acer pseudoplatanus-Oxalis acetosella* subcommunity rather than the W10a typical subcommunity.

A single plant of the Schedule 9 invasive plant Himalayan cotoneaster *Cotoneaster simonsii* was noted in Slockett's Copse (Figure 2).

Crook's Copse

This wood is on a hill crest at the north end of the park and is the smallest (approx. 2.3ha). The stream which flows into the valley between High Wood and Slockett's Copse originates in Crook's Copse and gathers in a small channel within the woodland. As a result the woodland is damp with numerous base-rich, wet flushes emanating from the hillside.

The wood is located on apparently slightly more clayey, base-rich soils than most of the other copses and consequently has a slightly richer flora with locally abundant primroses and pignut, and carpets of pure bluebells where not shaded out by holly. Unlike the other woods, there are only small patches of creeping soft-grass and very little sorrel. The woodland is considered to fit W10a *Quercus robur – Pteridium aquilinum-Rubus fruticosus* woodland typical subcommunity. There is one small area of alder woodland with remote sedge which is considered too small to map.

Dirty Ground Copse

Approximately 2.5ha in size, and as with the other woodlands within the complex, this area is also acidic, but humid with base-rich flushes. Thirteen ancient woodland indicator species were recorded within this woodland during 2014 including sanicle, wood sorrel, remote sedge and hairy-brome (Appendix F17). As described within Waterleaze Copse, Dirty Ground Copse also contains a small population of thin-spiked wood-sedge which has a restricted distribution in Berkshire.

This gently sloping, north-east-facing wood has large open areas of creeping soft-grass, bluebells and wood sorrel with little or no bracken and bramble, and a mixed sycamore - pedunculate oak canopy. There is little defined shrub layer other than a few areas of dense holly towards the SW end of the wood.

2108 NVC surveys considered it to fit the W10e *Acer pseudoplatanus-Oxalis acetosella* subcommunity.

At regular intervals in the wood there are springs and flushes running downhill to the north-east, often with iron-rich ground water flushing (which consequently raises the soil pH). These flushes are typically lined with remote sedge, creeping buttercup, bugle, enchanter's nightshade and yellow pimpernel, and sometimes have a few alder trees along the sides. These are 2–4 m wide, narrow, impoverished fragments of the W7b *Alnus glutinosa –Fraxinus excelsior – Lysimachia nemorum* woodland, *Carex remota – Cirsium palustre* woodland.

This is the only copse in which the flushes are obvious to any extent and are probably the origin of the name of the wood (Dirty Ground Copse).

Gorse Covert

A dry, well-drained acidic woodland (approx. 2.9ha) with large areas dominated by bracken with gorse on the edges. The woodland supports mature oak specimens as well as ash, sycamore and silver birch with occasional rowan. The ground flora includes foxglove, primrose, bluebell, wood sage, honeysuckle, creeping softgrass and wood meadow-grass. Eight Ancient Woodland Indicator species were recorded within this woodland in 2014 (Appendix F17).

This woodland has a sparser ground flora composition than the other woodlands, with more bramble and a smaller range of woodland herbs. Only the east end has scattered patches of creeping soft-grass and wood sorrel is apparently absent, so this woodland is considered to be W10a *Quercus robur - Pteridium aquilinum - Rubus fruticosus* woodland typical subcommunity.

The name 'Gorse Covert' implies it may once not have been woodland (gorse is still abundant along the south-east edge) and is of younger age than the other woodlands on site. It is not included in the Ancient Woodland Inventory (MagicMap https://magic.defra.gov.uk/MagicMap.aspx).

Woodland Summary

All of these woodlands are considered to fulfil the criteria for the definition of the UK Priority Habitat type *Lowland Mixed Deciduous Woodland (as they are over 0.25ha and support characteristic plant communities).*

As described within Section 3.1 above, all the woodlands with the exception of Gorse Covert, assessed during the NVC woodland (Appendix F17) are classified as ancient woodland.

The woodlands were found to be as they were during the previous surveys completed in 2011, 2013, 2014, and 2017 although it should be noted that woodland management was identified has having been completed prior to the 2013 survey, with some of the more immature trees having being removed from High Wood.

3.2.2 Dense/Scattered Scrub

There are areas of dense/ scattered scrub present throughout the site, with the stands consisting predominantly of bramble. Areas of scattered scrub are situated along the western extent of the site and the field margins of compartments within the eastern extent of the site. Areas of dense scrub are distributed more widely throughout the site although confined to the eastern half of the site.

3.2.3 Broad-leaved Scattered trees

There are a number of broadleaved scattered trees present within the site boundary, including some which are considered to be veteran trees due to their size and condition. In particular these are present within the eastern half of the site along the access tracks traversing the site.

3.2.4 Hedgerows

There is an extensive network across the site (Figure 2) which consists of a combination of species-poor, species-rich, intact and defunct hedgerows. Two hedgerows (Hedgerow A and Hedgerow E) are considered likely to be '*important*' under the Hedgerow Regulations 1997 (see Appendix A) due to the presence of standard trees and seven woody species together with woodland indicator species in the ground layer. Hedgerow A is located along the western boundary of the site and Hedgerow E is located along the north eastern boundary of the site (shown on Figure 2).

These hedgerows form important corridors connecting woodlands and other habitats over the site, and provide commuting routes for nocturnal animals such as bats.

3.2.5 Marshy Grassland

The majority of the wet grassland habitats are located together within the centre of the site, encompassing several fields partitioned by hedgerows and streams, the grassland is very wet and mire-like in places. Springs and base-rich flushes emerge into the valley where the mires reach their greatest extent and are found slightly upslope away from the stream and valley bottom. A smaller strip of wet grassland is located within a field compartment at the eastern extent of the site.

The meadows straddle the main stream which flows north-south towards the River Enborne and are encircled by the ancient woodland copse. Together the woodland and wet grassland form an important habitat and feature for this site.

A detailed National Vegetation Classification (NVC) survey was completed in 2018 (Appendix F22). The marshy grasslands were found to range in quality from some fairly uniform species-poor Yorkshire fog-dominated grasslands on the drier ground to mixed soft rush pastures on the wetter ground to some diverse sharp-flowered rush stands on the flat valley bottoms on the wettest soils (see Figure 2).

The sharp-flowered rush stands were considered to be the vegetation type M23 *Juncus effusus/acutiflorus* (rush species) - *Galium palustre* (marsh bedstraw) rush-pasture which forms part of the Purple Moor Grass and Rush Pastures HPI. The other marshy grassland types are generally regarded as a modified grassland types of lower botanical interest.

The small area of Purple Moor Grass and Rush Pastures HPI along the valley bottoms at Sandleford (0.445 ha) contains 16% of the known Berkshire resource of this habitat so is assessed as being of County Importance.

3.2.6 Neutral Semi-improved Grassland

This habitat is predominantly confined to field compartments along the eastern boundary some of which are utilised by grazing cattle. The species recorded historically within these compartments include; false oat grass, ox-eye daisy, crested dogs-tail, cock's-foot, perennial ryegrass, yarrow, spear thistle, soft brome, meadow foxtail, common nettle, creeping thistle, common sorrel, sheep fescue, dock sp., creeping bent, groundsel and meadow buttercup.

These fields appeared unchanged from those described during previous surveys.

3.2.7 Acid Grassland: Semi-improved to Improved Grassland

Acid grasslands are located in the well-drained elevated areas on-site and are semi-improved to improved, in character. These areas have been modified and degraded from intensive grazing and have been found to comprise the following species during earlier surveys; perennial ryegrass, bracken, cock's-foot, sheep fescue, common bent, creeping buttercup, common foxtail, white clover, creeping bent, crested dog's-tail, sweet vernal grass, heath speedwell, and lawn moss.

Due to the modification and degradation as a result of intensive management, the grassland is not considered to meet the Lowland Acidic Grassland HPI type criteria.

The habitat appeared unchanged from those described during previous surveys.

3.2.8 Tall Ruderal

Tall ruderal habitat is present within the site boundary located throughout the site. The largest extent is located within the area surrounding the ponds at the north eastern extent of the site, adjacent to Newtown Road. Species present within these areas include; common nettle, thistle sp. and white dead nettle. Saplings are also present within the aforementioned area including field maple, hawthorn, silver birch and hazel.

3.2.9 Standing Water

Numerous ponds are present on-site. Many have little emergent aquatic vegetation and are shaded by surrounding woodland habitat. Several of the waterbodies were found to be dry or almost completely devoid of water. There are larger ponds located in Waterleaze Copse, whilst these are shaded, both ponds support emergent aquatic vegetation including water mint. A full description of the ponds, together with their Habitat Suitability Assessment score with regards to great crested newts is provided in section 3.3.1 below.

3.2.10 Running Water

The River Enborne is bordered by wet woodland (alder carr) which grades to elevated areas supporting damp to dry acidic woodland. The stream is shaded for much of its length as such the emergent and aquatic vegetation communities appear to be sparse.

The River Enborne at the site is recognised as an HPI. The river is structurally varied with a range of riverine features, including point bars, riffles, glides, pools and meandering bends. At several points, high earth-cliff banks have developed.

A stream tributary of the River Enborne runs through a central valley (to the south of Slocketts Copse and High Wood and to the north of Barn Copse and Dirty Ground Copse) before flowing into Waterleaze Copse. The stream bed is a mosaic of silt, bedrock and pebbles. The banks are heavily wooded in sections with dense scrub in places. The drain which flows into the stream, flows through an open marshy field with stands of rush. The stream and drain both peter out into wet flushes in their upper reaches.

Some springs and seepages are present in the valleys and woodland areas, and are described in the water resources chapter (*Chapter 11*). They are considered to be fed from a combination of surface run off and infiltration to ground.

3.2.11 Arable

A significant proportion of the site is utilised for the growing of arable crops, with their agricultural use having changed regularly as recorded during previous surveys. All arable field compartments at the time of the December 2017 survey had to some degree been recently ploughed and left fallow; as such a low level of grass growth had begun to encompass several of these fields. In several fields, areas of maize have been planted for game cover.

Botanical surveys of arable plants have been completed in 2011, 2014 and 2018 (Appendix F23). The 2018 results were broadly similar to previous surveys, with some changes due to the different crops, natural turnover of species and differences in timing of the surveys.

The site is not rich in arable weeds and is assessed as being of Local value only. None of the arable weeds present are protected species listed under Schedule 8 of the Wildlife & Countryside Act 1981 (as amended). Five of the arable weeds are listed in the Berkshire Rare Plant Register (field woundwort, thorn apple, great brome, medium-flowered winter-cress and fool's parsley).

Under the IUCN threat categories, with the exception of sand spurrey which is Vulnerable, and field woundwort which is Near Threatened, all the native species and archeophytes are Least Concern. The arable field margins are not considered to qualify as HPI.

3.2.12 Bare Ground

A series of tracks are situated on-site; one runs centrally from east to west across the entirety of the site and another within the eastern extent of the site running from north to south. The latter emanates from the Newbury college campus before connecting to the former track.

3.2.13 Buildings

There are two buildings on-site; a stable and a pre-fab office building located within the eastern extent of the site. Due to the potential importance for bats, details of the buildings will be discussed in Section 3.3.3 below.

3.3 Protected & Notable Species

3.3.1 Great Crested Newts

HBIC and TVERC returned 45 records of GCN within 2km of the site, of these 15 were historical records (i.e. pre-2008). All records of GCN are located over 0.5km form the site with the nearest record located approximately 0.6km to the NE of the site within a pond to the east of Haysoms Drive, Newbury. All the records are situated to the east of the A339 which is considered to represent a major barrier to dispersal, and as such, are to not considered to be connected to the site via commutable corridors such as hedgerows or woodland. It is considered therefore highly unlikely that a GCN would commute to the site.

There are a total of eight waterbodies on-site with an additional three located within 500m radius of the site boundary. Access to waterbodies P3, P4 and P5 (TN4) was not possible at the time of survey. Descriptions of the waterbodies are provided within the Table 4 below.

Table 4 Waterbody descriptions

Pond Reference	OS grid Reference	Distance (km) and Direction	Approximate size (m2)	Description
P1 (TN1)	SU4718564055	On-site	868	Large, deep pond within Waterleaze Copse. Water flows into and out of the pond via a network of ditches.
P2 (TN2)	SU4719363943	On-site	612	Pond within Waterleaze Copse, surrounded by vegetation. Water flows into and out of the pond via a network of ditches.
P3	SU4618864220	0.22km, W	50	Small, very shallow series of puddles within Brickkiln Copse, found to be dry during previous GCN surveys.
P4	SU4618864221	0.21km, W	30	Small, very shallow series of puddles within Brickkiln Copse,

Pond Reference	OS grid Reference	Distance (km) and Direction	Approximate size (m2)	Description
				found to be dry during previous GCN surveys.
P5 (TN3)	SU4736464593	On-site	32	Small, heavily shaded pond, surrounded by dense vegetation. The pond was found to be almost dry during previous GCN surveys.
P6 (TN4)	SU4735564805	On-site	16	Small, heavily shaded pond, surrounded by dense vegetation, shallow at the time of survey, very steep banks so largely inaccessible.
P7 (TN5)	SU4736064734	On-site	736	Man-made balancing pond, with fairly steep banks, found to be dry at the time of survey.
P8 (TN6)	SU4741764847	On-site	833	Manmade balancing pond, with fairly steep banks, found to be dry at the time of survey.
P9 (TN7)	SU4705364955	On-site	84	Small, heavily shaded, steep banked pond near Crook's Copse. Vegetation was very dense and sides very steep so limited access, almost dry.
P10 (TN8)	SU4651064635	On-site	0	OS maps show this pond is located at the edge of Barn Copse, however at the time of survey it was not visible, a damp depression was present not suitable for survey.
P11 (TN9)	SU4727164656	Immediately adjacent to boundary	2700	Large man made balancing pond within Newbury College grounds, mostly shallow banks, with emergent vegetation present around edges of pond.
P12 (TN10)	SU4670864549	On-site	3	A small depression filled within the root system of a tree on the northern outskirts of Dirty Ground Copse. The waterbody was relatively shallow at the time of survey.

It is understood from information within planning application 16/00106/OUTMAJ, that there are three additional ponds off-site within 500m of the site boundary within the grounds of Park House School. However, access was not requested for the current survey, so this could not be confirmed.

HSI Assessment

The HSI assessments of the ponds are tabulated within Table 5 below. Ponds which were found to be dry at the time of survey or where there was no access were not assessed and therefore not included within Table 5 below.

Table 5 HSI assessments of waterbodies

Pond Reference	P1	P2	P6	P9	P11	P12
SI1 Field location	1.00	1.00	1.00	1.00	1.00	1.00
SI2 Pond area	0.97	1.00	0.03	0.17	0.68	0.01
SI3 Pond drying	0.90	0.10	0.50	0.50	0.90	0.10
SI4 Water quality	0.67	0.67	0.67	1.00	1.00	0.67
SI5 Shade	1.00	1.00	0.40	0.30	1.00	0.40
SI6 Fowl	0.67	1.00	1.00	1.00	0.67	1.00
SI7 Fish	1.00	1.00	1.00	1.00	0.67	1.00
SI8 Ponds	1.00	1.00	1.00	1.00	1.00	1.00
SI9 Terrestrial habitat	1.00	1.00	1.00	1.00	1.00	1.00
SI10 Macrophytes	0.33	0.36	0.31	0.31	0.31	0.41
HSI SCORE :	**0.82**	**0.69**	**0.52**	**0.62**	**0.80**	**0.38**
Pond Suitability :	**Excellent**	**Average**	**Below Average**	**Average**	**Excellent**	**Poor**

Presence / Likely Absence Survey

Great crested newt presence / likely absence surveys have been previously completed on waterbodies on-site and within 500m of the site (2011, 2013 and 2015). No great crested newts were recorded during these surveys. In 2017, eDNA sampling was completed on P11 (TN9) (the only accessible water body that was not dry at the time of the eDNA surveys), which returned a negative result for the presence of GCN. As such, GCN are considered likely to be absent from the site.

3.3.2 Reptiles

A total of 568 records (seven of which were historical records) relating to four species of reptile including adder, common lizard, grass snake and slow worm were returned by via the HBIC and

TVERC data search. The closet record returned was a slow worm situated 0.4km to the east of the site.

Reptile presence / likely absence surveys have previously been completed on-site, most recently in 2018 (Appendix F3). A low population of slow worms, grass snakes and common lizards have been recorded at the site. As the site has remained relatively unchanged it is assumed that these species are potentially present within all areas of suitable habitat.

3.3.3 Bats

HBIC and TVERC returned records of up to 185 bat species (119 historical records) within 2km of the site boundary, these are summarised in Table 5 below.

Table 6 Bat Records within the 2km Data Search Area

Common Name	No, of Records	Nearest Record to Site (km)
Barbastelle	1	0.1km, WNW
Brown Long-eared	20	On-site
Common Pipistrelle	32	0.1km, WNW
Daubenton's bat	9	On-site
Long-eared species	4	0.17km, NW
Pipistrellus Sp.	30	On-site
Natterer's	3	1.6km, NW
Noctule	14	On-site
Serotine	10	0.12km, SSE
Soprano Pipistrelle	7	On-site
Unidentified Bat	53	0.17km, E
Whiskered	2	On-site

Trees

The site comprises seven ancient woodland compartments and fields bisected by several treelines and hedgerows within which there are numerous mature trees with potentially suitable potential bat roosting features (e.g. cracks and crevices). In addition there are a number of notable individual scattered trees throughout the site. The majority these individual trees are clustered primarily into three assemblages. The first is a group of oaks situated within the eastern extent of the site, parallel to the east of High Wood and adjacent off-site recycling centre. The second is a group of mature oaks situated within the south eastern extent of the site. The third is located to the west of Slockett's

Copse. During the course of previous assessments conducted on-site, a total of eight bat roosts have been confirmed within individual trees on-site (Appendix F8).

The proposed A339 link road runs within a few metres of a dead, mature sweet chestnut tree considered to have high potential to support roosting bats, and within <50m of a mature lime tree, which is considered to have moderate potential to support roosting bats. These trees were subject to dusk emergence/ pre-dawn return surveys in 2016, during which the mature lime was identified as a confirmed off-site bat roost for common pipistrelle and may support at least two more bats of the same or different species (Appendix F8).

In addition two trees (oak trees) were identified as containing roosting bats adjacent to Warren Road, Newbury (Appendix F8).

Buildings

There is an open stable (TN14, Figure 2) with wooden beams and numerous cracks and crevices is located at the eastern extent of the site. The field compartment in which the stable is situated is currently grazed by cattle. Inspection of the area immediately surrounding the building found that the ground is heavily poached, suggesting that the stable is intermittently utilised by the cattle. The building is considered to offer low potential to support roosting bats, and was subject to nocturnal surveys in 2014 and 2015 which found no bats to be using the building at the time of the survey (Appendix F8).

A small pre-fabricated office building (TN15, Figure 2) is also located at the eastern extent of the site although to the north of the stable. The structure is of constructed of wooden panelling with a flat roof comprised of a combination of metal and wooden panelling with plastic lining. The exterior of the building is weather worn with the state of repair not appearing significant as there were no features noted which would allow access to the interior. The building has no roof void and seemingly is utilised regularly by negligible potential to support roosting bats.

Commuting and Foraging bats

Bat activity surveys have been completed on-site in 2011, 2013, 2016 and 2017 (Appendix F9). Up to 8 species of bat were found to be using the habitats on-site, including two recorded passes of a barbastelle. The majority of the site was found to support commuting or foraging bats to some extent as there were a number of commuting and foraging routes along hedgerows, woodland edges, between woodlands and along field margins. Edge habitats along the woodlands and tracks were found to be used for commuting.

The seven ancient woodlands on-site have complex woodland structures with vegetation of varying heights and hence are likely to provide important foraging habitat for bats. Barbastelle bats are often associated with ancient woodlands and hence there is a possibility that these woodlands will be used by these notable bat species.

The River Enborne, which forms the southern boundary of the site, and the central swale area that runs from the north west and north east of the site, traveling south eastwards into Waterleaze Copse are considered to have high invertebrate assemblages and hence are also considered to support a high invertebrate fauna and hence provide important foraging habitats to bats.

The hedgerows on-site are considered to offer good bat commuting and foraging habitat even though several were gappy. However, it is considered that the woodland and central swale will provide the greatest foraging habitat to bats, although it is still likely that these hedgerows will be used by foraging and commuting bats.

3.3.4 Badger

HBIC and TVERC returned 11 records of badger within 2km of the site.

The continued presence of badgers was confirmed with an active main sett situated on-site. The majority of the additional identified setts (classified as either subsidiary or outlier) previously identified on-site were found to be inactive/ disused during the course of the most recent survey (Appendix F11). Snuffle holes were identified on-site in close proximity of the main sett however no latrines were identified during the course of the survey.

3.3.5 Hazel Dormice

A total of 14 records were returned by HBIC and TVERC. The closet of these records was situated approximately 1.1km to the east of the site. All of the records returned are situated on the opposing side of the A339 which is considered a major barrier to dispersal.

The presence of dormice on-site was confirmed during surveys completed in 2014, however update surveys completed in 2017 did not confirm presence (Appendix F10).

The interconnectivity of the woodland via intact hedgerows, particularly in the northern area, and the derelict hazel understorey in some of the woodlands does provide favourable conditions for this species. Hazel dormice are listed as a European Protected Species and a UK Priority Species. It is considered that the following dormouse interest applies to woodlands on the site as shown in Table 7:

Table 7 Dormouse interest within woodlands at the site

Woodland Name	Dormouse potential	Comments
High Wood	Moderate-High	Large extent and diverse structure, well connected by intact hedgerows
Crook's Copse	Moderate	Diverse structure, well connected, small size with connecting hedgerows
Barn Copse	Moderate	Diverse structure and well connected with other woodlands
Slockett's Copse	High	Close to High Wood and well connected to Crook's Copse
Dirty Ground Copse	Low	Poor structure, but connected to Barn Copse via hedgerows

Woodland Name	Dormouse potential	Comments
Waterleaze	Moderate	Large extent and diverse structure, hazel is found throughout the wood, but scattered with an understory of holly too.
Gorse Covert	Low	Poor structure and lack of hazel understory

3.3.6 Otter & Water Vole

HBIC and TVERC did not return any records of otter, however a total of 37 records of water vole were returned from within 2km of the site. Of these 15 were recorded before 2008, therefore these records are considered to be historical. It should be noted that the records relating to water voles refer to sighting of individuals in addition to signs of activity (e.g. burrows, footprints etc).

An otter and water vole presence/ likely absence survey was completed in 2013. The presence of otter was confirmed utilising the River Enborne along the site's southern boundary, in the form of feeding remains and a spraint. There were no active holts identified on-site or within 100m of the boundary. Water voles were confirmed along the same river in albeit in small numbers with both burrows and latrines noted. During the botanical surveys completed in 2014, a water vole was seen near the ponds at the eastern extent of the site near Newtown Road. The presence of water vole were again confirmed along the River Enborne with footprints noted along the northern bank in 2018 (Appendix F15). The footprints were noted in close proximity to the previous features confirming the presence of the species on-site in 2013. No signs of the presence of otter were noted in 2018.

3.3.7 Birds

A total of 190 records of bird species within a radius of 2km of the site was returned (of which 36 were considered to historical records) by HBIC and TVERC. Of these a total of 11 are legally protected species, listed on Schedule 1 of the WCA (as amended). The data search also returned 18 records of bird species of high importance (BoCC Red List) within a 2km radius.

Previous surveys have identified a range of notable bird species and birds of medium conservation concern on-site and the site is considered to offer suitable habitat for breeding birds (Appendix F4). Barn owls have previously been confirmed roosting within trees on-site (Appendix F5) with the central and eastern regions of the site considered to offer suitable foraging habitat.

Nightjars surveys were conducted in 2011, 2014 and 2018 based on anecdotal evidence that nightjars occasionally utilise the site (Appendix F6). No nightjars were identified on-site, as nightjars are usually associated with heathland and open woodland the habitat on-site is considered sub-optimal for breeding nightjars.

3.3.8 Aquatic Invertebrates

HBIC and TVERC returned no records of white-clawed crayfish within a 2km radius of the site.

The locally important species golden-ringed dragonfly was identified within the stream on-site in 2011 and 2014, but was not noted in 2018, likely due to lower water levels as a consequence of a lack of rain (Appendix F13).

A low number of bullheads *Cottus gobio* were caught within the stream during the aquatic invertebrate sampling but they do not form part of the BMWP and ASPT scores. Bullheads are listed on Schedule II of the Conservation of Habitats and Species Regulations 2017, and are a UK Priority Species under Section 41 of the NERC Act.

White clawed crayfish surveys were completed on-site in 2013, however no white-clawed crayfish were identified during this survey such they are considered likely to be absent from the site (Appendix F14). As signal crayfish remains were found along the River Enborne during an otter and water vole survey in 2013, it is considered likely that white-clawed crayfish are absent from the site.

3.3.9 Terrestrial Invertebrates

HBIC and TVERC returned at total of 208 records of invertebrates species within 2km of the site. Of these, a single species was listed as nationally scarce with a further 22 were listed as Priority Species under the Natural Environment and Rural Communities Act (2006).

Terrestrial invertebrate surveys were completed in 2011, 2014 and 2018 (Appendix F12). The surveys produced records of Red Data Book, nationally notable and nationally scare insect species across a range of habitats (e.g. wetland and woodland). Woodland insects were considered to be poorly represented.

The arable margins, central swale, woodlands and the large number of mature and veteran trees all provide potential to support notable invertebrates, in particular those associated with dead wood.

3.3.10 Invasive Species

Flora

HBIC and TVERC identified a total of eight species listed under Schedule 9 Part II within 2km of the site boundary. Of the 67 records returned, 32 were recorded prior to 2008 and are therefore considered to be historical records. The nearest of which was a stand of Himalayan balsam located at the southern edge of the site within the eastern extent of Waterleaze Copse (TN13).

Four invasive species of flora have been identified on-site; Himalayan balsam, Himalayan cotoneaster, Japanese knotweed (TN11) and New Zealand pygmyweed (TN12). Himalayan balsam has been previously identified growing extensively within Waterleaze Copse to the south of the two ponds (P1 and P2, TN1 & TN2) and along the southern boundary of the site bordering the River Enborne. Himalayan cotoneaster has been found in Slockett's Copse. Japanese knotweed was identified along the eastern site boundary and appeared to extend off-site, the extent of which could not be verified at the time of survey due to the presence of livestock within the same field compartment. New Zealand pygmyweed was identified growing in proximity to pond P1 (TN1).

Fauna

HBIC and TVERC identified a total of 14 records for five invasive animal species within 2km of the site. Four of the records (three for signal crayfish and a single record of American mink) were

considered to be historical records as they were recorded prior to 2008. The nearest record was for a signal crayfish situated within the River Enborne on the site's southern boundary.

3.3.11 Other Species

Brown hare

HBIC and TVERC returned a total of two records within 2km of the site, the closet record was situated approximately 1.9km, west of the site.

Brown hare have been recorded throughout the site on a number of occasions during previous surveys; the species is classified as a UK Priority Species. It is considered that the proposed open space land within the Country Park will retain suitable habitat for this species.

Bullhead

HBIC and TVERC returned a total of three records within 2km of the site, all of which were located within the River Kennet. The closet record was situated approximately 1.4km, north west of the site.

Juvenile bullheads were identified within the on-site stream during aquatic invertebrate surveys (Appendix F13). It is considered that the preservation of the streams within the Country Park will retain suitable habitat for this species on-site.

Common Toad

HBIC and TVERC returned a total of five records within 2km of the site, the closet record was situated approximately 0.15km, north east of the site. Common toads were identified on-site during reptile presence/likely absence surveys conducted in 2017 within suitable habitat surrounding the northernmost field compartment (Appendix F3). This area of the site abuts the Newbury Rugby Club to the west, where one of the off-site records was noted. It is considered that the proposed open space areas on-site will retain suitable habitat for this species.

Eurasian Hedgehog

HBIC and TVERC returned a total of 37 records within 2km of the site, the closet record was situated approximately 0.45km, east of the site.

No signs were identified indicating the presence of Eurasian hedgehog on-site however the presence of the woodland and intact hedgerows on-site are considered to provide potentially suitable habitat and provide corridors to suitable habitat off-site.

3.4 Importance of Ecological Features

In line with the CIEEM PEA Guidelines (2017), and based on the above baseline information, each ecological feature recorded within the study area is considered to have the following importance, as defined within the CIEEM EcIA Guidelines (2018):

Table 8 Importance of Ecological Features

Feature	Importance	Rationale
Greenham & Crookham Common SSSI	National	Designated for the presence heathland, ancient woodland, reptiles and invertebrates
River Kennet SSSI	National	Designated for the presence of invertebrates and aquatic birds
Broadleaved Woodland	County	The majority of the woodland copses on-site are designated as part of the High Wood Complex SINC and are considered likely to qualify as ancient.
Bats	County	Presence of roosting bats on-site confirmed. Their confirmed presence of on-site will undergo ongoing assessment concurrently during additional protected species surveys.
Terrestrial Invertebrates	County	Low value, suitable habitat present on-site
Arable	County	Low value, predominantly utilise for silage crop with some maize grown for game management. County scarce arable plant species have been on site during previous surveys
Otter	Local	Low value, suitable habitat present on-site
Water Vole	Local	Low value, suitable habitat present on-site
Birds (including Barn Owl)	Local	Pre-commencement survey recommended. The confirmed presence of roosting barn owl on-site will undergo ongoing assessment concurrently during additional protected species surveys.
Aquatic Invertebrates	Local	Low value, suitable habitat present on-site
Brown Hare	Local	Low value, any signs which indicate presence will be noted if identified on-site in the future
Badgers	Local	Pre-commence survey recommended to confirm on-going presence in pre-exiting locations on-site
Hedgerows	Local	Low value, offer linear features for commuting and foraging fauna including bats
Marshy Grassland	County	Small areas of sharp-flowered rush stands were considered to be the vegetation type M23 *Juncus effusus/acutiflorus* (rush species) - *Galium palustre* (marsh bedstraw) rush-pasture which forms part of the Purple Moor Grass and Rush Pastures HPI. The other marshy grassland types are generally regarded as a modified grassland types of lower botanical interest, although they offer suitable habitat for grass snakes to commute and forage
Acid Grassland- Semi-improved to improved grassland	Local	Low value, cattle grazed grassland

Feature	Importance	Rationale
Running Water	Local	Low value, offers suitable habitat for white clawed crayfish, otter and water vole
Reptiles	Unknown	Suitable habitat on-site on the form of woodland, semi-improved grassland field margins and tall ruderal vegetation.
Dormouse	Unknown	Suitable habitat present on-site in the form of woodland with hazel with intact hedgerows connecting copses. The previously confirmed presence of dormouse on-site will undergo ongoing assessment concurrently during additional protected species surveys.
Dense/ Scattered Scrub	Negligible	Low value bramble scrub only
Scattered Trees	Negligible	High value, confirmed roosting presence within several of the trees on-site and offer linear features for commuting and foraging
Neutral Semi-improved Grassland	Negligible	Low value offers suitable habitat for reptiles snakes to bask, commute and forage
Tall Ruderal	Negligible	Low value, predominantly stinging nettle
Buildings	Negligible	Low value offers potential for roosting bats
Common Toad	Negligible	Low value, any signs which indicate presence will be noted if identified on-site in the future
Hedgehog	Negligible	Low value, any signs which indicate presence will be noted if identified on-site in the future
Either: International (incl. European) / National / Regional / County / Local / Negligible **Or:** Unknown (i.e. further surveys/information needed)		

The potential for the proposals to have adverse or beneficial impacts on these features, along with the requirement for any mitigation or enhancement measures are discussed in detail below.

4.0 Relevant Planning Policy & Legislation

4.1 Revised National Planning Policy Framework

The revised NPPF was issued on 24th July 2018 and currently supplements government Circular *06/2005, Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System*.

Circular 06/2005 states that the presence of protected species is a material consideration in the planning process. Paragraph 170 of the NPPF also states that '*Planning policies and decisions should contribute to and enhance the natural environment by:*

a) *protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*
b) *recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*
c) *maintaining the character of the undeveloped coast, while improving public access to it where appropriate*
d) *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*
e) *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
f) *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

The conservation and enhancement of wildlife is also specifically reference re: development within the National Parks or the Broads.

When determining planning applications, local planning authorities should apply the following principles:

a) *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
b) *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

Regarding EcIA's and HRA's – any sites identified, or required, as compensatory measures for adverse effects on any Natura 2000/habitats site should also be given the same level as protection as the pSPA's and cSAC's themselves. In addition, when an application is being determined, "*The presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site ….*"

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should….:

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

4.2 Biodiversity 2020: A strategy for England's wildlife & ecosystem services

Biodiversity 2020 replaces the previous UK Biodiversity Action Plan and sets national targets to be achieved. The intent of Biodiversity 2020, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are the SPI & HPI detailed under NERC Act (see Appendix A for further details).

4.3 Local Biodiversity Action Plan

Local Biodiversity Action Plans (LBAPs) identify habitat and species conservation priorities at a local level (typically County by County) and are usually drawn up by a consortium of local Government organisations and conservation charities. Although they are no-longer managed at a national level many are still reviewed and updated at a local level.

The Berkshire Biodiversity Strategy (Berkshire Local Nature Partnership, 2014) is the relevant document for this site and it contains the following Priority Species and Habitats:

Table 9 Biodiversity Strategy- Priority Habitats

Priority Habitats	
Ponds	Lowland Mixed Deciduous Woodland
Eutrophic Standing Water	Wet Woodland
Rivers	Hedgerows

A total of 193 species are listed as priority species under the Berkshire Biodiversity Strategy. These species cover taxa including moss, fungus, flowering plants, beetles, moth, bird, reptile and terrestrial mammal.

It should be noted that the existence of Priority Habitats and/or Species does not always infer an elevated level importance for those features. These plans may be designed to encourage an increase in these habitats/species, rather than to protect a county-scarce feature (for example).

4.4 Local Plan

Policy CS 17 (Biodiversity and Geodiversity) of the West Berkshire Core Strategy (West Berkshire Council, 2012) states;

Biodiversity and geodiversity assets across West Berkshire will be conserved and enhanced.

Habitats designated or proposed for designation as important for biodiversity or geodiversity at an international or national level or which support protected, rare or endangered species, will be protected and enhanced. The degree of protection given will be appropriate to the status of the site or species in terms of its international or national importance.

Development which may harm, either directly or indirectly,

- *locally designated sites (Local Wildlife Sites and Local Geological Sites), or*
- *habitats or species of principal importance for the purpose of conserving biodiversity, or*
- *the integrity or continuity of landscape features of major importance for wild flora and fauna*

will only be permitted if there are no reasonable alternatives and there are clear demonstrable social or economic benefits of regional or national importance that outweigh the need to safeguard the site or species and that adequate compensation and mitigation measures are provided when damage to biodiversity/geodiversity interests are unavoidable.

In order to conserve and enhance the environmental capacity of the District, all new development should maximise opportunities to achieve net gains in biodiversity and geodiversity in accordance with the Berkshire Biodiversity Action Plan and the Berkshire Local Geodiversity Action Plan. Opportunities will be taken to create links between natural habitats and, in particular, strategic opportunities for biodiversity improvement will be actively pursued within the Biodiversity Opportunity Areas identified on the Proposals Map in accordance with the Berkshire Biodiversity Action Plan.

4.5 Legislation

Full details of the UK legislation and offences which are relevant to the ecological receptors identified are included in Appendix A. However, based on the findings of our assessment, it is considered that the proposals will need to consider the following legal provisions:

- Harm to SSSI
- Disturbance or killing of an EPS
- Disturbance of killing of badger
- Disturbance or killing of other terrestrial mammals (brown hare and Eurasian hedgehog)
- Disturbance of nesting wild birds

- Disturbance or killing of notable invertebrate species
- Disturbance or destruction of notable plant species
- Cause and/ or permit the spread of an invasive species in the wild

5.0 Discussion

5.1 Designated Sites

5.1.1 Sites of Special Scientific Interest

Greenham Common SSSI lies approximately 800m to the east of the site. To seek to avoid any potential negative impacts on the adjacent SSSI through increases in visitor pressure, it is recommended that multi-functional green space be included on-site.

Water borne pollution arising from construction could potentially impact on SSSIs with aquatic connectivity to the site (i.e. River Kennett SSSI). Therefore it is necessary to provide and implement as strategy to reduce any potentially significant impacts to the designated sites in proximity to the site as a result of the development. In addition it is recommended that best working methods are practiced and all relevant Pollution Prevention Guidelines (PPGs) are adhered to.

5.1.2 Local Wildlife Sites

There are 41 SINC sites located within 2km of the site. The majority of the woodland copses on-site are designated as a LWS grouped together as the High Wood Complex and designated as they are ancient woodlands, and support Ancient Woodland Indicator species. These woodlands fulfil the criteria for the definition of the UK Priority Habitat type *Lowland Mixed Deciduous Woodland,* but collectively the woodland areas assume greater ecology interest and given their proximity to each other, providing connectivity and linkage across the site generally.

The site is bordered to the north, west and north east by urban development, but the semi-natural habitats along the southern, south west and south east boundaries remain intact and provide important links with the landscape beyond. Development impacts to these woodlands should be minimised and an ecological mitigation and management plan (EMMP, Appendix F18) has been produced to enhance and manage these habitats into the future.

The closest of the off-site locally designated sites lie adjacent to the southern boundary of the site, however they lie beyond the River Enborne which is the county boundary. As these sites lie beyond the River, the public would not be able to directly access these SINCs from the site, minimising public access to these areas. Much of the site itself will be retained and managed as a Country Park with various walking routes and play areas included, thus further reducing the potential for impacts on the surrounding designated sites.

5.2 Habitats

5.2.1 Broadleaved Semi-natural Woodland

All the woodland copses on-site fall within the High Wood Complex LWS, with the exception of Waterleaze Copse, and are being retained, together with a 15m buffer within the final design, in accordance with the Forestry Commission and Natural England's Standing Advice (2018). As the majority of these areas are designated for their floristic value or are considered to have the potential to support protected species, prohibited access to these areas or the implementation of predestined pathways throughout these areas is preferable. These areas have the potential to support nesting birds, roosting bats, otter, water vole, badger and dormice.

5.2.2 Dense/ Scattered Scrub

The areas of dense and scattered scrub on-site have the potential to be suitable to support species such as nesting birds, reptiles, invertebrates and dormice. Some scrub retention is recommended where possible. Where removal is required, precautionary methods of habitat clearance are recommended within the EMMP (Appendix F18).

5.2.3 Broadleaved Scattered Trees

A number of scattered trees on-site have been assessed as having potential to support roosting bats (Appendix F7). Wherever possible, trees that have been assessed as such have been retained as part of the proposals together with a suitable root protection zone. Retained trees will be fenced as protection from damage during the construction. The remaining scattered trees are listed as having negligible potential for bats. Any removal of scattered trees is recommended to be undertaken outside of the nesting bird season or following a nesting bird check. New trees planted as part of the proposals will include native species to enhance the ecological value of the site.

5.2.4 Hedgerows

The hedgerow network on-site links the numerous woodland copses which have the potential to support dormice and other protected and notable species. Hedgerows have been retained wherever possible, together with a 3m buffer. It is recommended that protective fencing is installed along the length of retained hedgerows to prevent damage during the construction phase of the development. Where hedgerows are proposed to be lost, additional hedgerow planting has been included within the proposals as mitigation for loss, together with infill planting of gappy hedgerows throughout the site.

5.2.5 Marshy Grassland

The small areas of sharp-flowered rush stands were considered to be the vegetation type M23 *Juncus effusus/acutiflorus* (rush species) - *Galium palustre* (marsh bedstraw) rush-pasture which forms part of the Purple Moor Grass and Rush Pastures HPI. The other marshy grassland types are generally regarded as a modified grassland types of lower botanical interest

These grasslands are being largely retained within the proposals, although valley crossings will be necessary. The potential designs of valley crossings have been shaped through ongoing ecology surveys and input into the design process, together with liaison with the LPA and the local Wildlife Trust. A drainage strategy is recommended to be implemented as a precaution to prevent pollutants and other contaminates entering the these areas as run-off.

5.2.6 Neutral Semi-improved Grassland

The topography (small tussocks) and density of the grassland provides suitable habitat for reptiles, known to be present within the site. Precautionary site clearance has been recommended within the accompanying CEMP (Appendix D1).

5.2.7 Acid Grassland: Semi-improved to Improved Grassland

Improved grassland on-site is considered to have relatively low ecological value although the habitat may have some value for foraging birds and insects. The grassland on-site is not considered to meet the requirements of classification under the grassland habitats listed under the Berkshire LBAP. The grassland lacks the species composition and topographical features to qualify under these habitats.

Any areas of grassland retained within future development proposals have the potential to be have their floristic value enhanced, which will be beneficial for invertebrates and birds.

5.2.8 Tall Ruderal

Tall ruderal habitat on-site may support reptiles, nesting birds and notable invertebrates. Precautionary methods of site clearance have been recommended within the CEMP (Appendix D1).

5.2.9 Standing Water

Standing water on-site consists of man-made balancing ponds and shallow waterbodies, the majority of which are considered ephemeral. Although the ponds do not meet the criteria to be assessed as a local priority habitat, the areas of standing water are considered suitable habitat to support breeding common toads. All waterbodies are being retained within the final proposals, and new waterbodies will be created within the Sustainable Drainage Strategy. This strategy will seek to reduce the risk of pollutants entering the waterbody as run-off, during the construction and operational phases.

5.2.10 Running Water

Running water is present on-site within the stream tributaries that run through the centre of the site and the River Enborne which runs along the site's southern boundary. Although there are historical records of white clawed-crayfish within the river (an Annex II species, the presence of which would allow the river to meet the qualifying criteria as a habitat of principal importance) given the more recent identification of signal crayfish (an invasive species) within the River Enborne it is considered that this species will no longer be present within the river. Therefore the river is no longer consider to the criteria to be assessed as a habitat of principal importance nationally or thereby a habitat of local importance within Berkshire. Measures such as a drainage strategy are recommended to be implemented to ensure there is no run-off entering the stream during the construction phase, and are included within the CEMP (Appendix D1).

Mitigation proposals are outlined in detail in the Water Resources Chapter (*Chapter 11*) for the effects of increased impermeable areas. The surface water management proposals will incorporate unlined source control, secondary and tertiary SUDS drainage features to allow infiltration of run off wherever possible to maximise infiltration and recharge. Pipes or culverts to convey stream flows beneath road crossing points will be adequately sized with capacity to convey unrestricted flows downstream. In summary, the surface water management proposals will minimise the hydrological impacts to existing springs and streams as well as mitigating the effects on groundwater recharge.

5.2.11 Arable

The fields compartments of arable are considered to have low ecological value, with the exception of the arable field margins which have in the past recorded notable species (the composition of which was dependent on the current agricultural regime). Translocation of arable plant seeds, and some of the seedbank are proposed within the EMMP (Appendix F18), together with enhancement and management of selected areas of the Country Park.

5.2.12 Bare Ground

Areas of bare ground have negligible ecological potential and the removal of this will have no consequence for the ecology of the site.

5.2.13 Buildings

Of the two buildings on-site only the stable building is considered to have the potential to support bats and birds which is discussed further in Section 5.3 below.

5.3 Protected & Notable Species

5.3.1 Great Crested Newt

Of the six waterbodies identified on-site two were assessed as being of 'excellent' suitability for GCN, two as 'average' suitability, one as being of 'below average' suitability and one was considered to be 'poor'. There were no records of GCN returned within a 500m radius of the site and there has been no GCN identified during survey efforts on-site (Appendix F2). As such, GCN are considered likely to be absent from the site.

5.3.2 Reptiles

All ruderal, grassland and scrub habitats on-site have been assessed as having low potential to support reptiles Reptile surveys have found a low population of common lizard, grass snake and slow worm to be present on site (Appendix F3). Avoidance measures during habitat clearance, and mitigation / enhancement measures for the Country Park are outlined in the EMMP (Appendix F18).

5.3.3 Bats

Roosting

Several trees on-site have been confirmed as bat roosts (Appendices F7 and F8), and, where tree removal is required, European Protected Species Licence application will need to be applied for. As a precautionary measure it is recommended that a pre-construction check of the stable (which was classified as being of low roosting potential) is carried out prior to any works, to ensure that there are no roosting bats utilising the building. As the pre-fabricated office building is considered to be of negligible potential for roosting bats no further works are deemed necessary.

Additional roosting opportunities will be provided within the final development as mitigation and enhancement for roosting bats.

Foraging

The site is known to support foraging and commuting bats (Appendix F9). The design has been informed by ecology survey and ongoing input the masterplan, such that dark corridors will be retained across the site, and a sensitive lighting strategy will be implemented, to reduce light spillage into surrounding retained habitats in particular the woodland, hedgerows and central valleys.

5.3.4 Badger

Evidence of badger activity is confirmed on-site and setts recorded. No setts are proposed to be lost as a result of the development, and the incorporation of dark / wildlife corridors and new planting within the proposed development seek to ensure that badgers can continue to utilise the site. As a precautionary measure it is recommended that a pre-construction badger check is carried out prior to works staring to ensure that badger activity on-site has not changed (Appendix F11).

5.3.5 Hazel Dormice

The continued presence of dormouse on-site and the proposed methodology for these species to mitigate any potential impacts should be informed by the results of the most up to date presence/likely absence surveys. Although no dormice have been recorded on-site since 2014 (Appendix F10), the site continues to offer suitable habitat for the species. As such, the design has evolved to retain and enhance dormouse habitat wherever possible, and to incorporate measures to allow dormice to cross proposed access routes through hedgerows. It is likely that a dormouse licence will be required to allow works to proceed, as they have historically been recorded on the site.

5.3.6 Otter and Water Vole

Otter and water vole are known to be present on-site (Appendix, F15), within the southern parts, which will form the Country Park. As such, the design of the Country Park, and the EMMP (Appendix F18) have evolved to retain and enhance habitat for these species.

5.3.7 Birds

Removal of any trees/ scrub/ tall ruderal vegetation and buildings are recommended to be undertaken outside of the bird breeding season (March- September inclusive- although to be guided by other protected species surveys) or after an inspection be an experienced ecologist no earlier than 24 hours before commencement of works. If nesting birds are located, the ecologist will suggest suitable buffers are put in place to prevent disturbance. Mitigation and enhancement measures for species such as skylark and barn owl are included within the EMMP (Appendix F18).

5.3.8 Aquatic Invertebrates

The on-site streams and the River Enborne have been assessed as having low potential to support white-clawed crayfish. As the presence of signal crayfish was confirmed within the in the River Enborne, and given the lack of white-clawed crayfish recorded during previous surveys on-site, it is considered likely that this species is absent from the site (Appendix F13).

Other aquatic invertebrates recorded on-site include species of Mayflies of the family *Leptophlebiidae* and Stoneflies of the family *Leuctridae*. These species are known to be particularly sensitive to pollutants therefore their presence indicates a low level of pollution within the watercourses on-site. Golden-ringed dragonfly were recorded on-site in 2011 and 2014, although not in 2018, this species is considered to be of local importance (Appendix F13).

All streams will be retained, together with suitable buffers within the final development, with management guided by the EMMP (Appendix F18), which also details precautionary methods for working near these areas during construction of the valley crossing. Avoidance measures are also provided within the CEMP (Appendix D1).

5.3.9 Terrestrial Invertebrates

Many of the habitats on site are potentially suitable for a range of invertebrate species. Specific avoidance, mitigation and enhancement measures for those rare and notable invertebrate species found on site are included within the EMMP (Appendix F18). The use of a range of native species within the landscaping proposal is likely to enhance the sites potential to provide foraging resources for a range of invertebrate species.

5.3.10 Invasive Species

Four invasive species listed under Schedule 9 Part II of the WCA (as amended) have been confirmed on-site; Himayalan balsam, Himalayan cotoneaster, Japanese knotweed and New Zealand pygmyweed. It is recommended that removal of these species is undertaken at the earliest opportunity, with measures outlined within the EMMP (Appendix F18).

5.3.11 Other Species

Avoidance measures for species such as brown hare, hedgehog, toad and bullhead are provided within the EMMP (Appendix F18), this, together with the retention and enhancement of suitable habitats within the Country Park is considered to appropriately mitigation for these species.

6.0 Summary

6.1 Designated Sites

To avoid any potential negative impacts on the adjacent SSSI's through increases in visitor pressure, suitable multi-functional open space has been included within the proposed development for future residents to use for recreation. The delivery of the Country Park will be phased to ensure that future residents have access to suitable walking routes within the proposed development.

The potential for water borne pollution arising from construction, impacting SSSIs with aquatic connectivity to the site (i.e. River Kennett SSSI) will be controlled through the CEMP and EMMP (Appendices D1 and F18), and the presence of the Country Park in the south of the site.

The majority of the woodland copses on-site are designated as a SINC (High Wood Complex). These woodlands fulfil the criteria for the definition *Lowland Mixed Deciduous Woodland* HPI*,* and are considered to qualify as ancient woodland. Collectively the woodland areas assume greater ecology interest and given their proximity to each other, providing connectivity and linkage across the site generally. These woodlands have been retained within the masterplan, and the EMMP (Appendix F18) has been produced to protect and enhance these habitats into the future.

6.2 Habitats

The natural and semi-natural habitats (particularly mature trees, hedgerows, scrub and on-site waterbodies) within the site have been retained wherever possible, with suitable buffers. Replacement planting and enhancements within the Country Park are also proposed.

Where the retention of these habitats is not possible, clearance works will be undertaken in accordance with the CEMP and EMMP (Appendices D1 and F18).

6.3 Protected & Notable Species

The following protected and notable species have been recorded within the site:

- Badger
- Reptiles (various species)
- Bats (various species)
- Badger
- Hazel Dormouse
- Otter
- Water Vole
- Birds (various species)
- White Clawed Crayfish
- Terrestrial Invertebrates (Various species)

Avoidance, mitigation, compensation and enhancement measures have been provided within the EMMP (Appendix F18), based upon the findings and recommendations of species specific surveys (detailed in Appendices F2-F123).

7.0 References

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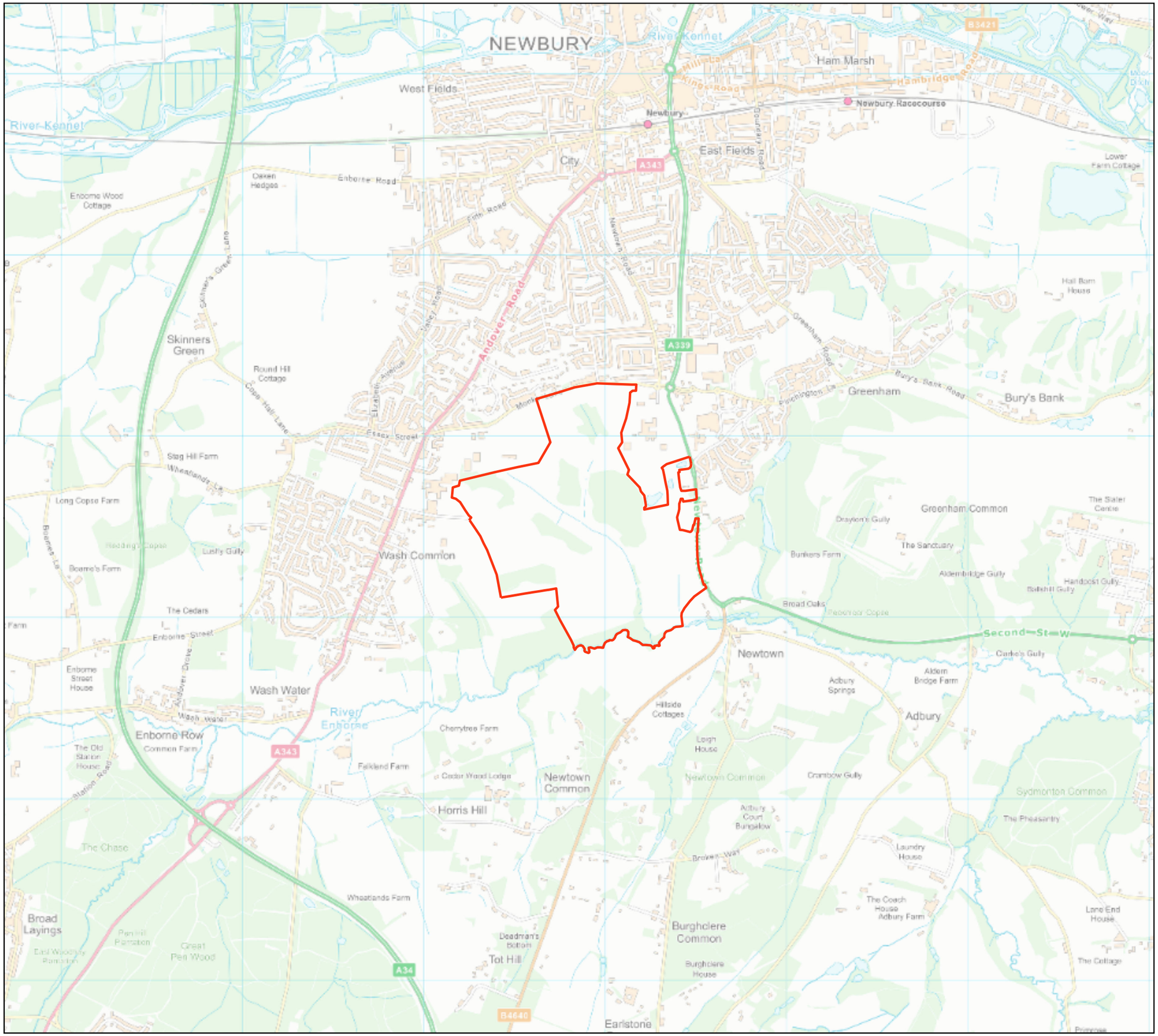
FIGURES

Figure 1 – Site Location Plan
Figure 2 – Phase 1 Habitat Plan
Figure 3 – Waterbodies On-site and within 500m



Rev	Date	Notes
A	09/03/2018	Initial map production

Legend

Site boundary

0 250 500 1,000 Meters

N

Site Location Plan

Sandleford Park, Newbury
Bloor Homes

Scale at A3:	Project No:	Drawing No:	Revision:
1:20,000	A070660-23	Figure 1	A

Drawn by:	Drawn date:	Approved by:
ben.cooke	09/03/2018	david.west

T:\GIS Southampton\Sandleford Park Newbury\Plans\Figure1_Site Location_19117.mxd

Rev	Date	Notes
A	14/12/18	Initial map production

Hedgerow F
Crooks Copse
Hedgerow G
Hedgerow E
Barns Copse
Slocketts Copse
High Wood
Hedgerow D
Dirty Ground Copse
Hedgerow A
Gorse Covert
Hedgerow C
Hedgerow B
Waterleaze Copse
SI
A

Legend

- Cotoneaster
- Purple Moor Grass and Rush Pastures HPI
- Target Note
- Site boundary
- Arable
- Scattered scrub
- Scattered trees
- Pond
- Fence
- Hedgerows
- Spring and seepage points
- Standing water
- Running water
- Buildings
- Bare ground
- Dense scrub
- Dry waterbody
- Wet woodland
- Broadleaved semi-natural woodland
- Marshy grassland
- Tall ruderal
- Semi-improved grassland

0 50 100 200 Meters

N

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ord park, newbury

BLOOR H

Site Location & Phase 1 Habitat Plan

Sandleford Park, Newbury
Bloor Homes & Sandleford Farm Partnership

Scale at A3:	Project No:	Drawing No:	Revision:
1:6,000	A070660-24	Figure 2	A
Drawn by:	**Drawn date:**	**Approved by:**	
ben.cooke	14/12/2018	david.west	

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Rev	Date	Notes
A	09/03/18	Initial map production

Legend

- SiteBoundary
- 500m Buffer
- Pond
- Dry Waterbody

0 50 100 200 300 Meters

N

Pond Locations

Sandleford Park, Newbury
Bloor Homes & Sandleford Farm Partnership

Scale at A3:	Project No:	Drawing No:	Revision:
1:8,850	A070660-23	Figure 3	A
Drawn by:	**Drawn date:**	**Approved by:**	
Alex Hellyar	09/03/2018	Tamsin Clark	

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Appendix A – Wildlife Legislation

Bern Convention

The *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the of the Convention, and regulate the exploitation of speices listed in Appendix 3. The regulation imposes legal obligations on participating countires to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the *EC Birds Directive* (1979) and the *EC Habitats Directive* (1992 – see below). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985 (as amended), Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).

Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Fora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species Regulations 2017.

Birds Directive

The EC Directive on the Conservation of Wild Birds (791409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

Conservation of Habitats and Species Regulations 2017

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the Habitats Directive respectively) to the European Commission. These sites, if ratified by the European Commission, are then designated as Special Protection Areas (SPAs) within six years.

The Regulations also make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 - see below:

Schedule 2 – European Protected Species of Animals	Schedule 5 – European Protected Species of Plants

Horseshoe bats *Rhinolophidae* - all species	Shore dock *Rumex rupestris*
Common bats *Vespertilionidae* - all species	Killarney fern *Trichomanes speciosum*
Wild cat *Felis silvestris*	Early gentian *Gentianella anglica*
Dolphins, porpoises and whales *Cetacea* – all sp.	Lady's-slipper *Cypripedium calceolus*
Dormouse *Muscardinus avellanarius*	Creeping marshwort *Apium repens*
Pool frog *Rana lessonae*	Slender naiad *Najas flexilis*
Sand lizard *Lacerta agilis*	Fen orchid *Liparis loeselii*
Fisher's estuarine moth *Gortyna borelii lunata*	Floating-leaved water plantain *Luronium natans*
Great crested newt *Triturus cristatus*	Yellow marsh saxifrage *Saxifraga hirculus*
Otter *Lutra lutra*	
Lesser whirlpool ram's-horn snail *Anisus vorticulus*	
Smooth snake *Coronella austriaca*	
Sturgeon *Acipenser sturio*	
Natterjack toad *Epidalea calamita*	
Marine turtles *Caretta caretta, Chelonia mydas, Lepidochelys kempii, Eretmochelys imbricata, Dermochelys coriacea*	

Wildlife & Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the 'Bern Convention' and the Birds Directive are implemented in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use; or
- take or destroy an egg of any wild bird.

Or to intentionally do the following to a wild bird listed in Schedule 1:

- disturbs any wild bird 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.

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places; and
- The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to:

- intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant;
- unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; or
- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, Schedule 5 'Animals which are Protected' contains a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates. Schedule 8 'Plants which are Protected' of the Act, contains 185 species, including higher plants,

bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise case to grow in the wild any plant which is listed in Part II of Schedule 9.

It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

Schedule 1 - Birds which are protected by special penalties			
Avocet	*Recurvirostra avosetta*	Osprey	*Pandion haliaetus*
Bee-eater	*Merops apiaster*	Owl, Barn	*Tyto alba*
Bittern	*Botaurus stellaris*	Owl, Snowy	*Nyctea scandiaca*
Bittern, Little	*Ixobrychus minutus*	Peregrine	*Falco peregrinus*
Bluethroat	*Luscinia svecica*	Petrel, Leach's	*Oceanodroma leucorhoa*
Brambling	*Fringilla montifringilla*	Phalarope, Red-necked	*Phalaropus lobatus*
Bunting, Cirl	*Emberiza cirlus*	Plover, Kentish	*Charadrius alexandrinus*
Bunting, Lapland	*Calcarius lapponicus*	Plover, Little Ringed	*Charadrius dubius*
Bunting, Snow	*Plectrophenax nivalis*	Quail, Common	*Coturnix coturnix*
Buzzard, Honey	*Pernis apivorus*	Redstart, Black	*Phoenicurus ochruros*
Capercaillie	*Tetrao urogallus*	Redwing	*Turdus iliacus*
Chough	*Pyrrhocorax pyrrhocorax*	Rosefinch, Scarlet	*Carpodacus erythrinus*
Corncrake	*Crex crex*	Ruff	*Philomachus pugnax*
Crake, Spotted	*Porzana porzana*	Sandpiper, Green	*Tringa ochropus*
Crossbills (all species)	*Loxia*	Sandpiper, Purple	*Calidris maritima*
Curlew, Stone	*Burhinus oedicnemus*	Sandpiper, Wood	*Tringa glareola*
Divers (all species)	*Gavia*	Scaup	*Aythya marila*
Dotterel	*Charadrius morinellus*	Scoter, Common	*Melanitta nigra*
Duck, Long-tailed	*Clangula hyemalis*	Scoter, Velvet	*Melanitta fusca*
Eagle, Golden	*Aquila chrysaetos*	Serin	*Serinus serinus*
Eagle, White-tailed	*Haliaetus albicilla*	Shorelark	*Eremophila alpestris*
Falcon, Gyr	*Falco rusticolus*	Shrike, Red-backed	*Lanius collurio*
Fieldfare	*Turdus pilaris*	Spoonbill	*Platalea leucorodia*
Firecrest	*Regulus ignicapillus*	Stilt, Black-winged	*Himantopus himantopus*
Garganey	*Anas querquedula*	Stint, Temminck's	*Calidris temminckii*
Godwit, Black-tailed	*Limosa limosa*	Swan, Bewick's	*Cygnus bewickii*
Goshawk	*Accipiter gentilis*	Swan, Whooper	*Cygnus cygnus*
Grebe, Black-necked	*Podiceps nigricollis*	Tern, Black	*Chlidonias niger*
Grebe, Slavonian	*Podiceps auritus*	Tern, Little	*Sterna albifrons*
Greenshank	*Tringa nebularia*	Tern, Roseate	*Sterna dougallii*
Gull, Little	*Larus minutus*	Tit, Bearded	*Panurus biarmicus*
Gull, Mediterranean	*Larus melanocephalus*	Tit, Crested	*Parus cristatus*
Harriers (all species)	*Circus*	Treecreeper, Short-toed	*Certhia brachydactyla*
Heron, Purple	*Ardea purpurea*	Warbler, Cetti's	*Cettia cetti*
Hobby	*Falco subbuteo*	Warbler, Dartford	*Sylvia undata*
Hoopoe	*Upupa epops*	Warbler, Marsh	*Acrocephalus palustris*
Kingfisher	*Alcedo atthis*	Warbler, Savi's	*Locustella luscinioides*
Kite, Red	*Milvus milvus*	Whimbrel	*Numenius phaeopus*
Merlin	*Falco columbarius*	Woodlark	*Lullula arborea*
Oriole, Golden	*Oriolus oriolus*	Wryneck	*Jynx torquilla*
Invasive plant species listed in Schedule 9			

Australian swamp stonecrop or New Zealand pygmyweed	*Crassula helmsii*	Japanese rose	*Rosa rugosa*
Californian red seaweed	*Pikea californica*	Japanese seaweed	*Sargassum muticum*
Curly waterweed	*Lagarosiphon major*	Laver seaweeds (except native species)	*Porphyra* spp
Duck potato	*Sagittaria latifolia*	Parrot's-feather	*Myriophyllum aquaticum*
Entire-leaved cotoneaster	*Cotoneaster integrifolius*	Perfoliate alexanders	*Smyrnium perfoliatum*
False Virginia creeper	*Parthenocissus inserta*	Pontic rhododendron	*Rhododendron ponticum*
Fanwort or Carolina water-shield	*Cabomba caroliniana*	Purple dewplant	*Disphyma crassifolium*
Few-flowered garlic	*Allium paradoxum*	Red algae	*Grateloupia luxurians*
Floating pennywort	*Hydrocotyle ranunculoides*	Rhododendron	*Rhododendron ponticum* × *Rhododendron maximum*
Floating water primrose	*Ludwigia peploides*	Small-leaved cotoneaster	*Cotoneaster microphyllus*
Giant hogweed	*Heracleum mantegazzianum*	Three-cornered garlic	*Allium triquetrum*
Giant kelp	*Macrocystis* spp.	Variegated yellow archangel	*Lamiastrum galeobdolon* subsp. *argentatum*
Giant knotweed	*Fallopia sachalinensis*	Virginia creeper	*Parthenocissus quinquefolia*
Giant rhubarb	*Gunnera tinctoria*	Wakame	*Undaria pinnatifida*
Giant salvinia	*Salvinia molesta*	Wall cotoneaster	*Cotoneaster horizontalis*
Green seafingers	*Codium fragile*	Water fern	*Azolla filiculoides*
Himalayan cotoneaster	*Cotoneaster simonsii*	Water hyacinth	*Eichhornia crassipes*
Hollyberry cotoneaster	*Cotoneaster bullatus*	Water lettuce	*Pistia stratiotes*
Hooked asparagus seaweed	*Asparagopsis armata*	Water primrose	*Ludwigia grandiflora*
Hottentot fig	*Carpobrotus edulis*	Water primrose	*Ludwigia uruguayensis*
Hybrid knotweed	*Fallopia japonica* × *Fallopia sachalinensis*	Waterweeds	*Elodea* spp.
Indian (Himalayan) balsam	*Impatiens glandulifera*	Yellow azalea	*Rhododendron luteum*
Japanese knotweed	*Fallopia japonica*		

Protection of Badgers Act 1992

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger"

Natural Environment and Rural Communities Act 2006

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of Habitats and Species which are of Principal Importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 Habitats of Principal Importance and 1,150 Species of Principal Importance.

Hedgerow Regulations 1997

The Hedgerow Regulations were made under Section 97 of the Environment Act 1995 and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.

Birds of Conservation Concern

This is a review of the status of all birds occurring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations, including the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The latest report was produced in 2015 (Eaton *et al*, 2015) and identified 67 red list species, 96 amber species, and 81 green species. The criteria are complex, but generally:

- **Red list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years.
- **Amber list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included, together with those whose 50% of the population is localised in 10 sites or fewer and those whose 20% of the European population is found in the UK.
- **Green list** species are all regularly occurring species that do not qualify under any of the red or amber criteria are green listed

Global IUCN Red List

The International Union for Conservation of Nature (IUCN) Threatened Species was devised to provide a list of those species that are most at risk of becoming extinct globally. It provides taxonomic, conservation status and distribution information about threatened taxa around the globe.

The system catalogues threatened species into groups of varying levels of threat, which are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CE), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), Not Evaluated (NE). Criteria for designation into each of the categories is complex, and consider several principles.

Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision making process.

Wild Mammals (Protection) Act 1996
This Act offers protects a form of protection to all wild species of mammals, irrespective of other legislation, and focussed on animal welfare, rather than conservation. Unless covered by one of the exceptions, a person is guilty of an offence if he mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering. It's application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works etc.

Appendix B– Target Notes

Target Note	Description	Photograph
1	Pond 1; large, deep pond within Waterleaze Copse. Water flows into and out of the pond via a network of ditches.	
2	Pond 2; Pond within Waterleaze Copse, surrounded by vegetation. Water flows into and out of the pond via a network of ditches.	
3	Pond 5; Small, heavily shaded pond, surrounded by dense vegetation. The pond was found to be almost dry during previous GCN surveys.	N/A
4	Pond 6; Small, heavily shaded pond, surrounded by dense vegetation, shallow at the time of survey, very steep banks so largely inaccessible.	N/A
5	Pond 7; Man-made balancing pond, with fairly steep banks, found to be dry at the time of survey.	N/A
6	Pond 8; Man-made balancing pond, with fairly steep banks, found to be dry at the time of survey.	N/A
7	Pond 9; Small, heavily shaded, steep banked pond near Crook's Copse. Vegetation was very dense and sides very steep so limited access, almost dry.	N/A
8	Pond 10; OS maps show this pond is located at the edge of Barn Copse, however at the time of survey it was not visible, a damp depression was present not suitable for survey.	N/A
9	Pond 11; Large man made balancing pond within Newbury College grounds, mostly shallow banks, with emergent vegetation present around edges of pond.	N/A

Target Note	Description	Photograph
10	Pond 12; A small depression filled within the root system of a tree on the northern outskirts of Dirty Ground Copse. The waterbody was relatively shallow at the time of survey.	
11	Stand of Japanese knotweed at the eastern extent of the site	N/A
12	New Zealand pygmyweed growing in proximity to Pond 1	N/A
13	Himalayan balsam growing in proximity to both Pond 1 and Pond 2	N/A
14	Open stable with wooden beams and numerous cracks and crevices is located at the eastern extent of the site. The field compartment in which the stable is situated is currently grazed by cattle. Inspection of the area immediately surrounding the building found that the ground is heavily poached, suggesting that the stable is intermittently utilised by the cattle	
15	A small pre-fabricated office building is also located at the eastern extent of the site although to the north of the stable. The structure is of constructed of wooden panelling with a flat roof comprised of a combination of metal and wooden panelling with plastic lining.