



Land at Kellogg College, Oxford OX2 6PN

Preliminary Ecological Appraisal

September 2023

on behalf of University of Oxford

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Report Contents

1	Executive Summary	1
2	Introduction	2
2.1	Site Description & Context	2
2.2	Proposals	2
2.3	Aims of Study	2
3	Methodology	2
3.1	Desk Study	2
3.2	Field Survey	3
3.2.1	Extended Phase 1 Habitat Survey	3
3.2.2	Initial Bat Survey & Preliminary Roost Assessment	3
3.3	Evaluation Methodology	4
3.4	Limitations	5
4	Results & Evaluation	6
4.1	Ecological Context	6
4.1.1	Sites of Nature Conservation Importance	6
4.1.2	Species Records	7
4.2	Habitats	11
4.1.1	Buildings and Structures	11
4.1.2	Amenity Grassland	11
4.2.3	Planted Tree	11
4.1.2	Hard-standing	11
4.3	Species	11
4.1.1	Plants	11
4.1.2	Invertebrates	11
4.2.3	Amphibians	12
4.1.2	Reptiles	12
4.2.3	Birds	12
4.2.3	Bats	12
4.2.3	Mammals (excl. Bats)	12
4.2.3	Other Species	12
5	Discussion	13
5.1	Relevant Legislation & Policy Guidance	13
3.2.1	Nesting Birds	13
3.2.2	The Natural Environment and Rural Communities Act 2006	13
4.1.2	National Planning Policy Framework	13
5.2	Impact Assessment	14
3.2.1	Sites of Nature Conservation Importance	14
3.2.2	Habitats	14
4.1.2	Species	15
6	Recommendations	15
6.1	Further Surveys	15
6.2	Habitats	16
3.2.1	Creation	16
6.3	Species	16
3.2.1	Birds	16
3.2.2	Bats	17
7	References	17
8	Appendix 1. Photographs	18

9	Appendix 2. Site Location Plans	19
10	Appendix 3. Phase 1 Habitat Plan.....	20
11	Appendix 4. Species for Landscape and Ornamental Planting	21
12	Appendix 5. Data Search Results	23

1 Executive Summary

Site Details	The land at Kellogg College is located at Kellogg College, to the east side of Banbury Road, Oxford, Oxfordshire OX2 6PN. The approximate Ordnance Survey grid reference for the site is SP 5115 0747.
Proposals	There is a proposal for a single-storey extension into the site area.
Methodology	An extended Phase 1 Habitat Survey was undertaken on 29 th August 2023 by Oliver Bevan <i>MEnvSci</i> .
Evaluation	<ul style="list-style-type: none"> • The site comprises an area of amenity grassland, containing a single tree and bounded by brick walls and a building. • None of the habitats within the site are considered to meet the criteria for habitats of 'principal importance', as listed within Section 41 of the NERC Act 2006. • All habitats are considered to be of value in the site context only, or of negligible value. <div style="background-color: black; width: 100%; height: 40px; margin-top: 10px;"></div>
Impact Assessment	<ul style="list-style-type: none"> • The proposals will result in the loss of hard-standing and amenity grassland. • It is considered that the creation of vegetated landscaping areas will compensate for the loss of amenity grassland.
Recommendations	Recommendations are also made with regard to species-specific enhancement such as bat boxes, bird boxes and lighting.

2 Introduction

2.1 Site Description & Context

The land at Kellogg College (referred to as 'the site' for the purpose of this report) is located at Kellogg College, to the east side of Banbury Road, Oxford, Oxfordshire OX2 6PN. The approximate Ordnance Survey grid reference for the site is SP 5115 0747.

The site comprises the northern section of an area of amenity grassland, bounded by buildings to the east and west, and a brick wall to the north. The grassland extends to the south before being met by further walls and buildings. The site forms part of a larger amenity space within the Kellogg College complex. This complex comprises education and research buildings within tended ground of amenity grassland, planted trees and shrubs.

The wider landscape is dominated by the urban environment of North Oxford. North Oxford comprises dwellings and university facilities alongside associated gardens and amenity spaces. Habitats of value are limited to vegetated gardens, roadside trees and amenity grasslands.

Habitats of particular ecological value within the wider locality are primarily focussed towards the east of the site, in association with the river Cherwell. The river is located approximately 630m east of the site. Beyond this is the New Marston Meadows Site of Special Scientific Interest. Also of note is the University Parks, an area of amenity parkland located approximately 150m south-east of the site.

2.2 Proposals

There is a proposal for a single-storey extension into the site.

2.3 Aims of Study

The aims of this study are to describe and evaluate the habitats present within the site and to assess the potential for the site to support protected and notable species. The report discusses the potential impacts of the proposed development on the ecology of the site, on valued habitats and on protected/notable species. The study also makes recommendations for appropriate mitigation measures and habitat enhancement with regard to habitats and species. The need for further ecological survey work is discussed in light of the impact assessment.

3 Methodology

3.1 Desk Study

The Thames Valley Environmental Records Centre (TVERC) was contacted in August 2023 to gather records that it holds for protected and notable species, and non-statutory sites of nature conservation importance from within a 1km radius of the site.

The Multi-Agency Geographic Information for the Countryside (www.magic.gov.uk) website was searched for information regarding internationally protected sites (e.g. Special Areas of Conservation) within 5km of the survey area and statutory sites of nature conservation importance (e.g. Sites of Special Scientific Interest) within a 1km radius of the site. Other Internet resources interrogated as part of the desk study include:

Bing Maps - www.bing.com/maps
Google Earth - www.earth.google.co.uk
Google maps - www.google.co.uk/maps

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and the Oxfordshire Biodiversity Action Plan (BAP) were also consulted to gather information pertaining to priority habitats and species for conservation action at the national and local level.

Aerial photography interpretation is used to place the site into an ecological context and to provide information on the nature of the habitats beyond the site boundary. The information gathered is used to provide a baseline to the habitat assessment.

3.2 Field Survey

3.2.1 Extended Phase 1 Habitat Survey

An extended Phase 1 Habitat Survey was undertaken on 29th August 2023 by Oliver Bevan *MEnvSci*. A walkover of the site was conducted, and a description of the habitats present was prepared using standard Phase 1 Habitat Survey methodology (JNCC, 2010).

Target notes were also prepared on features of particular ecological interest and an assessment was made of the site’s potential to support protected and notable species (such as species listed under Section 41 of the NERC Act 2006).

3.2.2 Initial Bat Survey & Preliminary Roost Assessment

An initial bat survey (daytime building inspection) and preliminary roost assessment (PRA) were also undertaken on 29th August 2023 by Mr Bevan. Mr Bevan holds a licence from Natural England to survey for bats within all counties of England (Natural England Level 1 Licence no. 2021-53108-CLS-CLS).

A detailed internal and external survey of the buildings was undertaken using a 1 million candle-power torch in order to look for bats and/or evidence of bats and to assess the potential of the buildings to support roosting bats. Internal rooms, loft spaces (if present) and external elevations were inspected for evidence of bats including, bat droppings, urine stains, feeding remains (such as moth wings) and characteristic fur staining around access points.

The bat survey was undertaken according to best practice guidelines published by the Bat Conservation Trust (Collins, 2016) and the *Bat Workers Manual* (JNCC, 2010).

Trees and buildings were assessed for their potential to offer shelter to roosting bats in accordance with best practice guidelines published by the Bat Conservation Trust (Collins, 2016). The trees were assessed from ground level (using binoculars) as either having high, moderate, low or negligible potential to shelter roosting bats according to the criteria shown in Table 1.

Table 1. Criteria for the assessment of buildings and trees for roosting bats (Collins, 2016).

Potential	Features
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure or tree 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 habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
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 significance.

Potential	Features
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 and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Potential roost features (PRFs) in trees that may be used by bats include (Collins, 2016):

- woodpecker holes;
- rot holes;
- hazard beams:
- other vertical or horizontal cracks and splits (such as frost cracks) in stems or branches;
- partially detached bark;
- knot holes arising from naturally shed branches, or branches previously pruned back to the branch collar;
- man-made holes (e.g. cavities that have developed from flush cuts) or cavities created by branches tearing out from parent stems;
- cankers (caused by localised bark death) in which cavities have developed;
- other hollows or cavities, including butt-rots;
- double leaders forming compression forks with included bark and potential cavities;
- gaps between overlapping stems or branches;
- partially detached ivy with stem diameters in excess of 50mm; and bat, bird or dormouse boxes

The study also takes into account the structure and ecological context of buildings, including the following factors which may increase the likelihood of roosting bats being present:

- Age of the building (pre-20th Century or early 20th Century construction)
- Nature of construction; traditional brick, stone or timber construction
- Large and complicated roof void with unobstructed flying spaces
- Large (>20 cm) roof timbers with mortice/tenon joints, cracks and holes
- Entrances and gaps for bats to fly and crawl through
- Poorly maintained fabric providing ready access points for bats into roofs, walls; but at the same time not being too draughty and cool.
- Roof warmed by the sun, south-facing roofs in particular
- Weatherboarding and/or hanging tiles with gaps
- Undisturbed roof voids
- Buildings and built structures in proximity to each other providing a variety of roosting opportunities throughout the year
- Buildings or built structures close to good foraging habitat, in particular mature trees, parkland, woodland or wetland, especially in a rural setting.

3.2.2.1 Weather Conditions

Surveys were conducted on 29th August 2023. The weather on the day was dry, mild (17°C) and sunny (20% cloud cover) with a light breeze (Beaufort Scale 2).

3.3 Evaluation Methodology

The evaluation of habitats follows the geographic frame of reference presented within the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal* (CIEEM, 2016).

The Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines recognise that ecological evaluation is a 'complex and subjective process' but provides key considerations to apply when 'applying professional judgement to assign values to ecological features and resources'. These include consideration of geographic frame of reference; site designations and features; biodiversity value; large populations or important assemblages of species; potential or supporting value; social value and economic value.

Focusing on assessments of biodiversity value, there are various characteristics that can be used to identify ecological resources or features that are likely to be important in terms of biodiversity. These include:

- Rare or uncommon species in the local, national or international context;
- Endemic or locally distinct sub-populations of a species;
- Species on the edge of their distribution;
- Notably large populations of animals or concentration of animals considered uncommon or threatened in a wider context;
- Species, rich assemblages of plants or animals;
- Ecosystems and their component parts, which provide the habitats required by the above species, populations and/or assemblages;
- Plant communities (and associated animals) considered typical of valued natural/semi-natural vegetation types; and
- Habitat diversity, connectivity and/or synergistic associations.

In this report, habitats are assigned to a value relating to their geographic frame of reference, using the following scale:

- International
- UK
- National (England)
- Regional (South East)
- County (Oxfordshire)
- District (City of Oxford)
- Local or parish (Oxford)
- Immediate zone of influence of the site (Kellogg College)
- Negligible

Regarding protected and notable species, an assessment of habitat suitability and potential presence of species has been undertaken given the results of the desk study and field survey.

3.4 Limitations

Whilst it is considered that a thorough habitat survey has been undertaken, and robust data and conclusions have been delivered within the assessment, the study provides only a snapshot of the species present at the time of the survey and should be considered with this in mind.

4 Results & Evaluation

4.1 Ecological Context

4.1.1 Sites of Nature Conservation Importance

4.1.1.1 Statutory Sites

There are two statutory sites of national nature conservation importance, such as Sites of Special Scientific Interest within a 1km radius of the site, namely New Marston Meadows SSSI and Port Meadow with Wolvercote Common and Green SSSI.

There is a single statutory sites of international nature conservation importance, such as Special Protection Areas, within a 5km radius of the site, namely the Oxford Meadows Special Area of Conservation (SAC).

New Marston Meadows SSSI

New Marston Meadows SSSI is located approximately 650m east of the site boundary. This SSSI is designated primarily due to the presence of unimproved lowland meadows, which lie on the flood plain of the river Cherwell. The predominant grassland within the hay meadows is the *Alopecurus pratensis-Sanguisorba officinalis* type, indicative of ancient meadows. Grazed meadows are predominantly of the *Agrostis stolonifera-Alopecurus geniculatus* type.

Port Meadow with Wolvercote Meadow and Green SSSI

Port Meadow with Wolvercote Meadow and Green SSSI is located approximately 890m west of the site boundary. This SSSI is designated due to the presence of unimproved floodplain grassland, which has been grazed continuously for approximately 1000 years. This has led to the establishment of a number of rare grassland species, particularly those associated with seasonally inundated ground.

Oxford Meadows SAC

The Oxford Meadows SAC is located approximately 890m west of the site, and occupies the vast majority of the Port Meadow with Wolvercote Meadow and Green SSSI. The Oxford Meadows SAC comprises a series of lowland hay meadows within the Thames Valley centre of their distribution. The SAC includes vegetation communities that are perhaps unique in the world in reflecting the influence of long-term grazing and hay-cutting on lowland hay meadows. The meadows are of particular botanical interest and importance. Oxford Meadows is also designated as a SAC because Port Meadow is the larger of only two known sites in the UK for creeping marshwort *Apium repens*.

4.1.1.2 Non-statutory Sites

There are four non-statutory sites of nature conservation importance within a 1km radius of the site, and an additional two conservation target areas (CTAs).

University Parks City Wildlife Site (CWS)

University Parks CWS is a 29ha area of historic parkland located approximately 160m south-east of the site boundary. The site is notable for the presence of mature trees, although most are non-native, and the associate invertebrate and avian assemblages.

Oxford Canal CWS

Oxford Canal CWS is a 3.4ha vegetated canal running north-south along the west side of Oxford, approximately 880m west of the site at the closest point. The canal acts as a wildlife corridor and supports a number of notable species including water vole *Arvicola amphibius* and kingfisher *Alcedo atthis*.

Park Farm Meadow CWS

Park Farm Meadow CWS consists of three semi-improved grassland fields occupying an area of 8.4ha. The fields are located approximately 900m east of the site. These fields are relatively species poor, containing species indicative of seasonally inundated pasture. The area is notable for its well-developed hedgerows and the proximity of the site to the river Cherwell and New Marston Meadows SSSI.

Trap Grounds Local Wildlife Site (LWS)

Trap Grounds LWS is a 1.4ha area of reedbed located approximately 920m north-west of the site. The site is important for the breeding bird assemblage associated with reedbed, including water rail *Rallus aquaticus* and reed warbler *Acrocephalus scirpaceus*. There is also an adjoining mosaic of woodland and grassland to the west which supports grass snake *Natrix helvetica* and common lizard *Zootoca vivipara*.

Thames & Cherwell at Oxford CTA

The Thames and Cherwell at Oxford CTA is located approximately 610m east of the site boundary. This CTA comprises the riparian ground alongside the Thames and Cherwell in Oxford, covering 660ha. The CTA's predominant ecological value stems from the lowland meadows astride the rivers, alongside patches of wet grassland, swamp and fen. Biodiversity action plan targets associated with the CTA are as follows:

1. Lowland meadow (and floodplain grazing marsh) – management, restoration and creation.
2. Fen (and swamp) – management, restoration and creation.
3. Reedbed – management and creation.
4. River – management and restoration (including resource protection).

Oxford Meadows and Farmoor CTA

The Oxford Meadows and Farmoor CTA is located approximately 880m south-west of the site boundary. This CTA covers 1653ha of land, comprising the Thames valley west of Oxford. The area is notable for its extensive lowland meadows and floodplain grazing marsh, including nationally and internationally important examples, particularly those associated with seasonal inundation. Other notable habitats include eutrophic standing water, fen, swamp, reedbeds and wet woodland. Biodiversity action plan targets associated with the CTA are as follows:

1. Lowland meadow – maintenance, restoration and creation.
2. Floodplain grazing marsh – maintenance, restoration and creation (outside of the lowland meadow sites, for wading birds).
3. Reedbeds – maintenance and creation.
4. Fen (and swamp) – maintenance.
5. Ponds – creations (of pond complexes in particular)
6. Arable field margins – maintenance, restoration and creation (for wild flowers in particular)
7. Hedgerows – maintenance.
8. River – maintenance (including resource protection).

4.1.2 *Species Records*

The following sections summarise the protected/notable species records provided by the Thames Valley Environmental Records Centre for the 1km search radius around the site. All species records are from 1990 onwards.

4.1.2.1 *Plants*

Plant species records since 1990 include a variety of woodland, grassland and wetland species. Species considered pertinent to the site include bluebell *Hyacinthoides non-scripta*, butcher's-broom

Ruscus aculeatus, common valerian *Valeriana officinalis*, corn buttercup *Ranunculus arvensis*, corn mint *Mentha arvensis*, devil's-bit scabious *Succisa pratensis*, field scabious *Knautia arvensis*, fritillary *Fritillaria meleagris*, grape-hyacinth *Muscari neglectum*, large-leaved lime *Tilia platyphyllos*, ragged-robin *Silene flos-cuculi*, wild strawberry *Fragaria vesca*.

The above records date from 1998 to 2022.

4.1.2.2 Invertebrates

Invertebrate records from the search radius include a range of butterflies, moths, flies and beetles. Recorded species include small tiphia *Tiphia minuta*, yellow-shouldered nomad bee *Nomada ferruginata*, *Platystethus nodifrons*, *Tournotaris bimaculate*, musk beetle *Aromia moschata*, brown hairstreak *Thecla betulae*, purple emperor *Apatura iris*, small blue *Cupido minimus*, wall *Lasiommata megera*, common club-tail *Gomphus vulgatissimus*, common darter *Sympetrum striolatum*, common darter *Sympetrum striolatum*, large black slug *Arion (Arion) ater*, beaded chestnut *Agrochola lychnidis* small square-spot *Diarsia rubi*, sulphur pearl *Sitochroa palealis*, white ermine *Spilosoma lubricipeda* and small heath *Coenonympha pamphilus*.

Invertebrate records date from 1990 to 2021.

4.1.2.3 Amphibians

Amphibians recorded from the search radius are limited to common frog *Rana temporaria* and common toad *Bufo bufo*. Records date from 2009 to 2020.

4.1.2.4 Reptiles

There are records of grass snake, common lizard and slow worm *Anguis fragilis* from the search radius. reptile records from the search radius, which all relate to grass snake *Natrix helvetica*. The records date from 1998 to 2017 and primarily relate to the Trap Grounds LWS.

4.1.2.5 Birds

The Records Centre holds records of a range of bird species suited to urban, wetland, farmland, woodland and grassland environments. Recorded species considered pertinent to the site are black-headed gull *Chroicocephalus ridibundus*, black redstart *Phoenicurus ochruros*, bullfinch *Pyrrhula pyrrhula*, dunnock *Prunella modularis*, fieldfare *Turdus pilaris*, firecrest *Regulus ignicapilla*, greenfinch *Chloris chloris*, herring gull *Larus argentatus*, house martin *Delichon urbicum*, house sparrow *Passer domesticus*, mistle thrush *Turdus viscivorus*, moorhen *Gallinula chloropus*, peregrine *Falco peregrinus*, redwing *Turdus iliacus*, *Turdus iliacus*, song thrush *Turdus philomelos*, sparrowhawk *Accipiter nisus*, starling *Sturnus vulgaris*, stock dove *Columba oenas*, swift *Apus apus*, tawny owl *Strix aluco*, woodpigeon *Columba palumbus* and wren *Troglodytes troglodytes*.

Bird species records date from 1998 to 2022.

Mammal records date from 1998 to 2022.

4.1.2.7 Bats

Bat species recorded from the search radius include common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii*, lesser noctule *Nyctalus leisleri* and noctule *Nyctalus noctula*.

Bat species records date from 1995 to 2022.

4.1.2.8 Other Species

Other species records include the bullhead *Cottus gobio*, which is not considered relevant to the site due to the lack of onsite waterbodies, and the poplar bells fungus *Schizophyllum amplum*. There are no records of other protected species, such as great crested newt *Triturus cristatus* considered pertinent to the site.

Kellogg College, Oxford Designated Sites Map



- Conservation Target Area
- Oxford City Wildlife Site
- Oxfordshire Local Wildlife Site
- Proposed Oxford City Wildlife Site

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Figure 1. Non-statutory sites within a 1km radius of the site.

4.2 Habitats

Photographs of the site are presented in Appendix 1. Appendix 2 illustrates the location of the site and provides an aerial photograph of the site within the surrounding landscape. A habitat map of the site is presented in Appendix 3.

4.1.1 Buildings & Structures

The site is bounded to the north and east by brick walls. The northern brick wall is freestanding whilst the eastern forms part of an adjacent building. There is also a single layer, timber, lean-to bike shed, with a corrugated plastic roof adjoining both walls.

The brick walls are in an excellent state of repair, and do not contain any cracks or cavities that could offer shelter to roosting bats. The bike shed is single layer in its construction, and therefore does not contain any cracks or cavities suitable for use by roosting bats. The internal space of the bike shed is unsuitable for roosting bats, being lit by natural light and exposed.

The brick walls and bike shed are assessed as being of negligible roosting bat potential.

4.1.2 Amenity Grassland

The majority of the site comprises amenity grassland. This grassland appears to be mown regularly as a lawn, with a sward height of 6cm observed at the time of survey. The lawn is dominated by species typical of improved grassland including daisy *Bellis perennis*, creeping buttercup *Ranunculus repens*, springy turf-moss *Rhytidiadelphus squarrosus*, self-heal *Prunella vulgaris*, chickweed *Stellaria media*, wood avens *Geum urbanum*, yarrow *Achillea millefolium* and ragwort *Jacobaea vulgaris*.

The amenity grassland does not meet the criteria for any grassland habitats of 'principal importance', as listed within Section 41 of the NERC Act 2006. The amenity grassland is considered to be of negligible ecological value.

4.2.3 Planted Tree

A single planted tree is present to the south of the site. This tree is a semi-mature ornamental Père David's maple *Acer davidii*.

The tree is not considered to meet the criteria for any woodland habitats of 'principal importance', as listed within Section 41 of the NERC Act 2006. The tree is considered to be of ecological value in the site context only.

4.1.2 Hard-standing

Hard-standing in the form of gravel and tarmac dominates the fringes of the site. Hard-standing is considered to be of negligible ecological value.

4.3 Species

4.1.1 Plants

No rare or scarce plants were noted within the site, in particular no rare grassland species were observed within the amenity grassland. Native species within the site comprise common species, particularly those associated with improved grassland.

4.1.2 Invertebrates

The site is likely to support a very limited assemblage of common and widespread invertebrates. This is unlikely to include notable invertebrates such as those identified within the desk study or that are listed on Section 41 of the NERC Act 2006.

4.3.3 *Amphibians*

There are no ponds or waterbodies within the site that could support breeding amphibians.

Terrestrial habitats of the site are largely unsuitable for amphibians, due to a lack of low growing vegetation and groundcover. It is considered highly likely that this will deter amphibians from the site.

There are no ponds within a 500m radius of the site (as shown by Ordnance Survey maps). There may be smaller unmarked ponds within the gardens of urban Oxford, however, such ponds are unlikely to support great crested newt. Furthermore, significant barriers to dispersal exist between gardens and the site, including busy roads and built development.

Considering the above discussion, amphibians, including the great crested newt, are considered to be absent from the site.

4.3.4 *Reptiles*

The site is dominated by mown amenity grassland. The amenity grassland is maintained at a short sward (~6cm) and has no obvious thatch. The hard-standing lacks significant vegetation cover or other refugia that could support reptiles.

These habitats are considered unsuitable for reptiles and as such, reptiles are considered absent from the site.

4.3.5 *Birds*

The tree to the south of the site and the boundary walls lack any evidence of nesting birds including historic nests and potential cavities. The site is also considered unsuitable for ground nesting birds such as skylark.

Breeding birds are therefore considered absent from the site.

4.3.6 *Bats*

All trees within the site are assessed as having 'negligible' bat roost potential (Collins, 2016). Similarly, structures and sections of buildings within and bordering the site are also assessed as having 'negligible' bat roost potential.

The site offers very limited foraging and commuting habitats for bats, and is unlikely to form a key foraging habitat for local bat populations.

Habitats within the site are largely considered unsuitable for hedgehogs. Vegetation within the site is severely limited and as such, the site is considered largely unsuitable for this species.

There are no aquatic habitats within or adjacent to the site suitable for otter or water vole. Considering this, these species are considered absent from the site.

4.3.8 *Other Species*

No evidence of any other protected species was found.

5 Discussion

5.1 Relevant Legislation & Policy Guidance

3.2.1 *Nesting Birds*

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The nesting season for most species is between March and August inclusive.

3.2.2 *The Natural Environment and Rural Communities Act 2006*

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on the Secretary of State to publish, review and revise lists of living organisms and types of habitat in England that are of principal importance for the purpose of conserving English biodiversity. It also requires the Secretary of State to take, and promote the taking of, steps to further the conservation of the listed organisms and habitats. This is important in the context of planning decisions as the National Planning Policy Framework affords planning policy protection to the habitats of species listed by virtue of Section 41.

There are no habitats listed within Section 41 of the NERC Act 2006 that are considered relevant to the site.

There are no species listed within Section 41 of the NERC Act 2006 that are relevant to the site, or considered to be potentially relevant.

4.1.2 *National Planning Policy Framework*

The National Planning Policy Framework was revised on 20 July 2021 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous National Planning Policy Framework published in March 2012, revised in July 2018 and updated in February 2019.

The NPPF states that planning policies and decisions should contribute to and enhance the natural and local environment by:

- 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);
- 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;
- maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- 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
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

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

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;

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;

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

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 integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

The following should be given the same protection as habitats sites:

Potential Special Protection Areas and possible Special Areas of Conservation;

Listed or proposed Ramsar sites; and

Sites identified, or required, as compensatory measures for adverse effects on a habitats site, (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitat's site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

5.2 Impact Assessment

3.2.1 Sites of Nature Conservation Importance

The proposals are unlikely to have any significant impacts on statutory or non-statutory sites of nature conservation importance. Habitat loss will be limited to the site itself and will not extend beyond the site boundary.

3.2.2 Habitats

It is understood that the proposals are to extend an adjacent building into the site to form a kitchen. The proposals will result in the loss of amenity grassland.

Habitats to be lost are primarily of negligible or site value only.

The NPPF states that planning policies and decisions should contribute to and enhance the natural and local environment by minimising impacts to existing habitats and providing net gains for biodiversity. It is considered that new native planting within the landholding, and/or species-specific enhancement can compensate for the loss of amenity grassland.

5.2.3 Species

5.2.3.1 Plants

There are no foreseeable impacts on rare or protected plant species.

5.2.3.2 Amphibians

There are no predicted impacts on amphibians, as amphibians are considered absent from the site.

5.2.3.3 Reptiles

There are no predicted impacts on reptiles, as reptiles are considered absent from the site.

5.2.3.4 Birds

There are no predicted impacts on breeding birds, as breeding birds are considered absent from the site.

5.2.3.5 Bats

There are no foreseeable impacts on roosting bats, or habitats of value to foraging bats. The extension is to impact a bike shed and area of brick wall with negligible bat roost potential. Other sections of the building such as the roof, are to remain unaffected. Roosting bats do not occupy the interior of the building, which comprises an actively used amenity space.

External lighting could have an impact on bats by affecting their activity and behaviour. In that certain species of bat have been shown to be attracted to mercury vapour lamps which emit light over a very broad-spectrum including UV light to which insects are particularly sensitive.

Furthermore, insects can be attracted in large numbers to mercury lamps and so can bats of the genera *Nyctalus* and *Pipistrellus*, including noctules *N. noctula* and common pipistrelles *P. pipistrellus* (Rydell and Racey 1993). Lighting has shown to have an opposite effect on certain other species, such as the lesser horseshoe bat *Rhinolophus hipposideros*, which have been shown to avoid areas of artificial light (Stone *et al.* 2009).



5.2.3.7 Other Species

There are no foreseeable impacts on other species.

6 Recommendations

6.1 Further Surveys

No further surveys are considered necessary at this stage.

6.2 Habitats

3.2.1 Creation

It is recommended that new areas of landscape or ornamental planting associated with new development are designed, planted and managed to maximise their value to wildlife. One key element of this would be the species used within the planting, which should comprise native species where possible, as well as ornamental plants of known value to wildlife.

The key will be to provide a variety of flowers and fruits throughout the year in order to provide food for insects and birds, as well as providing potential nest sites through the planting of trees and shrubs.

Appendix 4 recommends a number of suitable species for landscape and garden planting schemes, including non-native species for more formal areas, although the species mix should by no means be limited to this list. Planting should aim to provide ground cover for animals such as hedgehogs and invertebrates, and so low-growing ground cover should be encouraged. Native species such as bugle, ivy and periwinkle could be used for this purpose, or ornamental species such as lady's mantle, elephant's ears or perennial geraniums may also be suitable for formal areas of ornamental planting. A diversity of structure should also be encouraged through the planting of small trees, with shrubs and herbaceous plants species established below.

6.3 Species

3.2.1 Birds

The erection of bird nesting boxes is recommended in order to compensate for the loss of nesting habitat and aid in delivering an ecological enhancement. Over 60 species are known to adopt nest boxes including blue tits, great tits, starlings, robins and sparrows.

The location and nature of the nest box depends on the species it is designed for; boxes for tits, sparrows or starlings should be fixed two to four metres up a tree or a wall; open-fronted boxes for robins and wrens need to be low down, below 2m, and well-hidden in vegetation. Unless there are trees or buildings which shade the box during the day, boxes should be faced between north and east, thus avoiding strong sunlight and the wettest winds.

Recommended boxes are:

- 1B Schwegler Nest Box
- 2H Schwegler Robin Box
- Vivara Pro Seville 28mm Woodstone Nest Box

As an enhancement, it is also recommended that integrated bird nesting features are incorporated into the fabric of the extension. This would benefit declining urbanised bird species such as house sparrows. It is preferable that bird boxes for urbanised species be installed on northern or eastern faces under the eaves of a building. In this instance, swift boxes are not considered appropriate.

Recommended integrated boxes are:

- Bird Brick Houses Sparrow Terrace Box
- Vivara Pro Woodstone House Sparrow Nest Box
- 1SP Schwegler House Sparrow Terrace

3.2.2 Bats

6.3.2.1 Bat Roosting Opportunities

Due to the low height of the extension, bat boxes are not considered appropriate.

6.3.2.2 External Lighting

It is recommended that external lighting be avoided within the site, unless it is necessary for reasons of security and safety. In particular, light spillage around new bat roosting features and along boundaries should be avoided, so that a dark corridor is created around the peripheries of the site in order to facilitate the movement of bats, as well as other nocturnal wildlife.

Where external lighting is required, it should be kept at low level and a low intensity, with hoods and baffles used to direct the light to where it is required (Bat Conservation Trust 2018, Emery 2008). To minimise the impact on bats, the use of low pressured sodium lamps is recommended in preference to mercury or metal halide lamps which have a UV element that can affect the distribution of insects and attract bats to the area, affecting their natural behaviour (Bat Conservation Trust 2018).

The key principles for choosing a suitable type of lamp are:

Avoid blue-white short wavelength lights: these have a significant negative impact on the insect prey of bats. Use alternatives such as warm-white (long wavelength) lights as this will reduce the impact on insects and therefore bats.

Avoid lights with high UV content: (e.g. metal halide or mercury light sources) or reduce/completely remove the UV content of the light. Use UV filters or glass housings on lamps which filter out a lot of the UV content.

Selecting an appropriate lamp unit that is designed to be environmentally friendly will minimise light spill, but further controls can be imposed by installing directional accessories such as baffles, hoods and louvres on lamps to direct light away from ecologically sensitive areas.

LED (Light Emitting Diode) units are an effective way to direct the light into small target areas and are recommended. Composite LEDs can be switched off to reduce/direct the light beam to specific areas.

7 References

Bat Conservation Trust, 2018. *Bats and artificial lighting in the UK: Bats and the Built Environment series*. The Bat Conservation Trust, London.

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. 2020. *The UK Habitat Classification User Manual Version 1.1* at <http://www.ukhab.org/>

CIEEM, 2016. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.

Emery, M., 2008. *Effect of Street Lighting on Bats*. Urbis Lighting Ltd., Anglia.

JNCC, 2010. *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. JNCC First published 1990; reprinted in 2010.

8 Appendix 1. Photographs



Photograph 1. The site, viewed from the north.



Photograph 2. The site, viewed from the north-west.



Photograph 3. Northern section of the site.



Photograph 4. The site, viewed from beyond the northern brick wall.

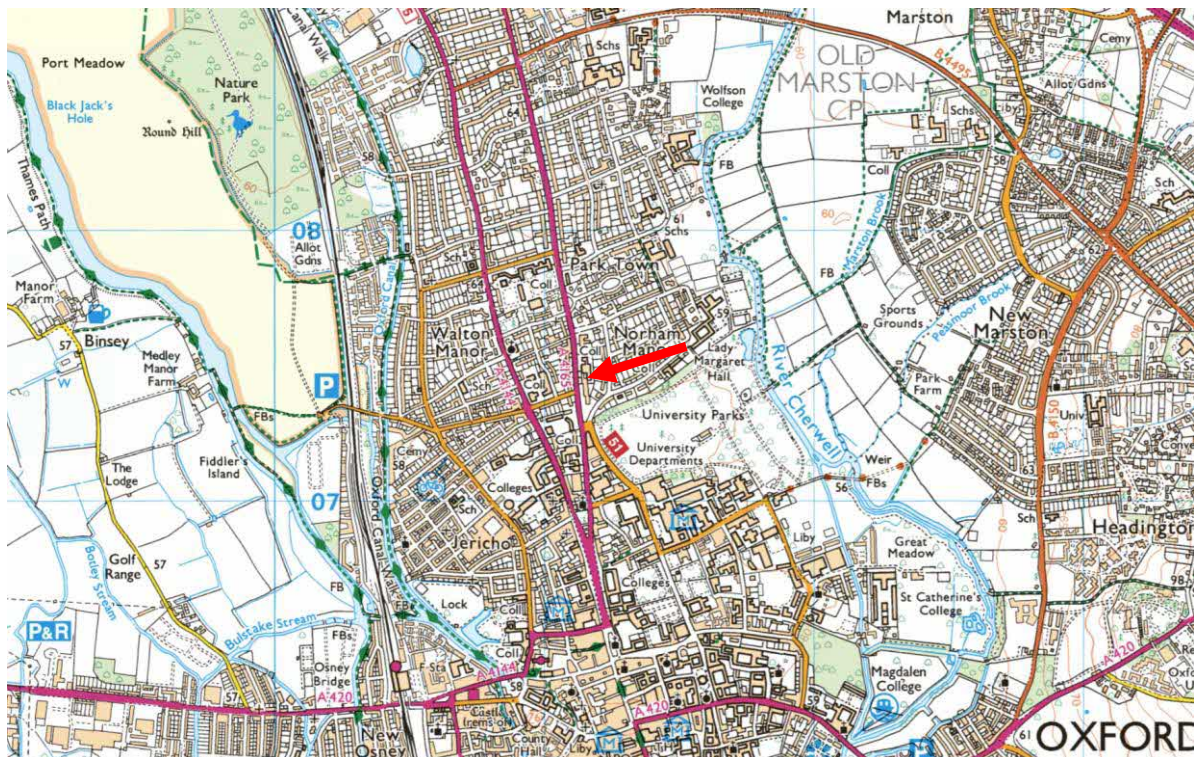


Photograph 5. The site, viewed from the south-east.

9 Appendix 2. Site Location Plans

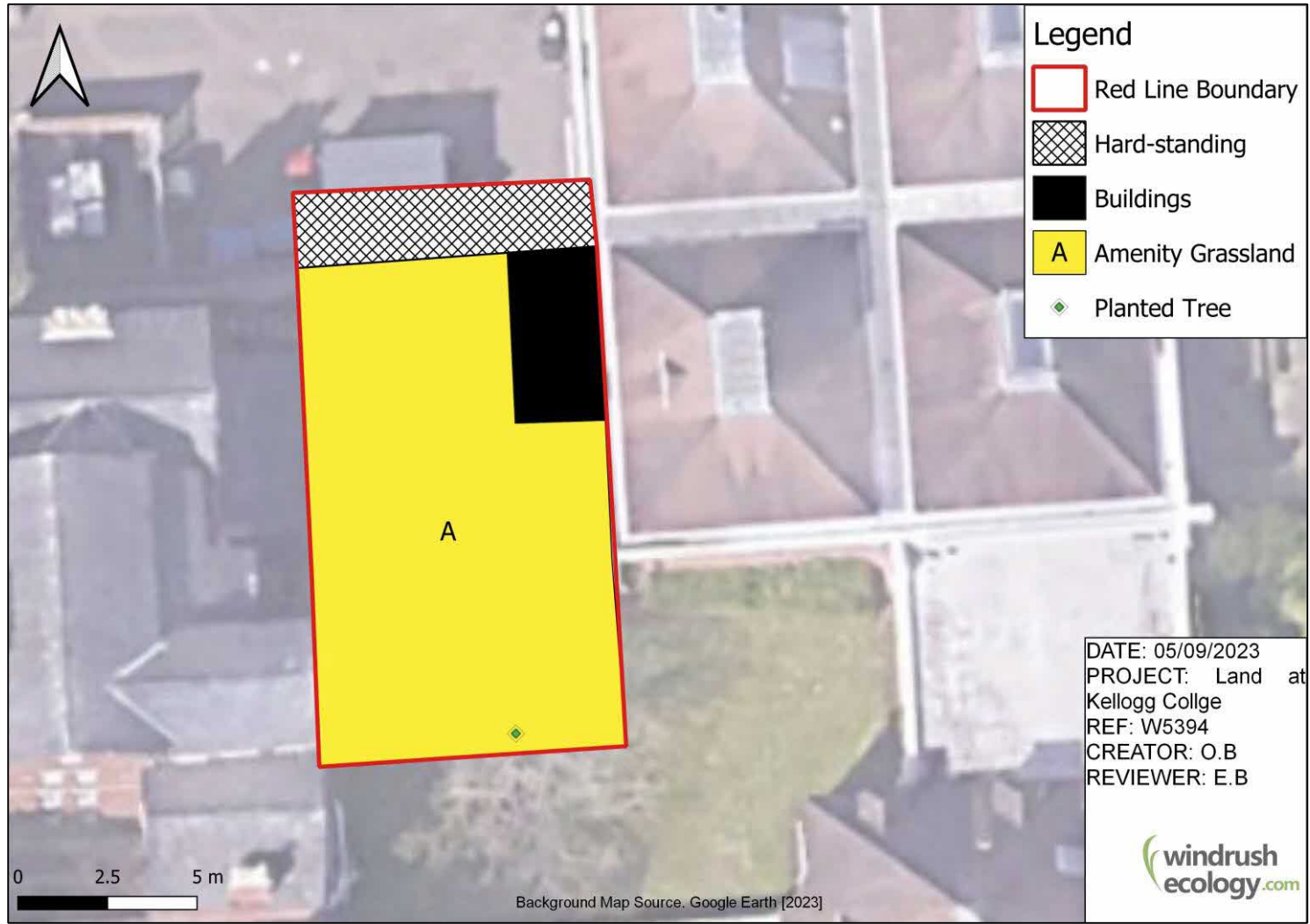


Site plan showing the approximate location of the land at Kellogg College, outlined in red.



Ordnance Survey map showing the approximate location of the site (indicated by the red arrow) within the local area.

10 Appendix 3. Phase 1 Habitat Plan



11 Appendix 4. Species for Landscape and Ornamental Planting

Common Name	Botanical Name
Trees	
Field maple*	<i>Acer campestre</i>
Beech*	<i>Fagus sylvatica</i>
Hornbeam*	<i>Carpinus betulus</i>
Willow*	<i>Salix sp.</i>
Silver birch*	<i>Betula pendula</i>
Rowan*	<i>Sorbus aucuparia</i>
Whitebeam*	<i>Sorbus aria</i>
Alder*	<i>Alnus glutinosa</i>
Wild cherry*	<i>Prunus avium</i>
Flowering cherry	<i>Prunus sp.</i>
Flowering pear	<i>Pyrus calleryana</i>
Crab apple*	<i>Malus sylvestris</i>
Fruiting apple	<i>Malus sp.</i>
English oak*	<i>Quercus robur</i>
Elm*	<i>Ulmus sp.</i>
Small-leaved lime*	<i>Tilia cordata</i>
Shrubs	
Holly*	<i>Ilex aquifolium</i>
Hazel*	<i>Corylus avellana</i>
Wayfaring tree*	<i>Viburnum lantana</i>
Wild service tree*	<i>Sorbus torminalis</i>
Buckthorn*	<i>Rhamnus cathartica</i>
Guelder rose*	<i>Viburnum opulus</i>
Hawthorn*	<i>Crataegus monogyna</i>
Hebe	<i>Hebe sp.</i>
Rosemary	<i>Rosmarinus</i>
Ceanothus	<i>Ceanothus sp.</i>
Weigela	<i>Weigela sp.</i>
Dog rose	<i>Rosa canina</i>
Dogwood*	<i>Cornus sanguinea/alba</i>
Rose (single flowered varieties)	<i>Rosa sp.</i>
Wild privet*	<i>Ligustrum vulgare</i>
Garden privet	<i>Ligustrum ovalifolium</i>
Lilac	<i>Syringa vulgaris</i>
Escallonia	<i>Escallonia sp.</i>
Lavender	<i>Lavandula sp.</i>
Flowering currant	<i>Ribes sp.</i>
Honeysuckle*	<i>Lonicera periclymenum</i>
Mexican orange blossom	<i>Choisya sp.</i>
Spiraea	<i>Spiraea sp.</i>
Amelanchier	<i>Amelanchier lamarckii/canadensis</i>
Cotoneaster	<i>Cotoneaster sp.</i>
Yew*	<i>Taxus baccata</i>

Common Name	Botanical Name
Broom	<i>Cytisus sp.</i>
Rose of Sharon	<i>Hypericum calycinum</i>
Firethorn	<i>Pyracantha sp.</i>
Butterfly bush	<i>Buddleia davidii</i>
Clematis	<i>Clematis sp.</i>
Perennials	
Elephant's ears	<i>Bergenia cordifolia</i>
Sage	<i>Salvia sp.</i>
Lamb's ears	<i>Stachys byzantia</i>
Periwinkle*	<i>Vinca major & Vinca minor</i>
Ivy*	<i>Hedera helix</i>
Bugle*	<i>Ajuga reptans</i>
Lady's mantle	<i>Alchemilla mollis</i>
Geraniums	<i>Geranium sp.</i>
Globe thistle	<i>Echinops ritro</i>
Monk's hood	<i>Aconitum sp.</i>
Yarrow*	<i>Achillea millefolium</i>
Teasel*	<i>Dipsacus fullonum</i>
Oriental poppy	<i>Papaver orientalis</i>
Michaelmas daisy	<i>Aster sp.</i>
Bear's breeches	<i>Acanthus spinosus</i>
Montbretia	<i>Crocsmia sp.</i>
Purple coneflower	<i>Echinacea purpurea</i>
Ornamental onion	<i>Allium sp.</i>
Catmint	<i>Nepeta sp.</i>
Verbena	<i>Verbena sp., Verbena bonariensis</i>
Marjoram	<i>Origanum majorana</i>
Thyme	<i>Thymus sp.</i>
Crocus	<i>Crocus sp.</i>
Daffodil	<i>Narcissus sp.</i>
Snowdrop	<i>Galanthus nivalis</i>
Winter aconite	<i>Eranthis sp.</i>
Bluebell*	<i>Hyacinthoides non-scripta</i>
Primrose*	<i>Primula veris</i>
Forget-me-not*	<i>Myosotis sp.</i>
Grape hyacinth	<i>Muscari botryoides</i>
Hollyhock	<i>Althaea rosea</i>
Lenten rose	<i>Helleborus orientalis</i>
Foxglove*	<i>Digitalis purpurea</i>
Greater knapweed*	<i>Centaurea scabiosa</i>
Great mullein*	<i>Verbascum thapsus</i>
Toadflax*	<i>Linaria vulgaris</i>
Meadow crane's-bill*	<i>Geranium pratense</i>
*indicates native species	

12 Appendix 5. Data Search Results

Please refer to separate biodiversity report prepared by the Thames Valley Environmental Records Centre.