Preliminary Ecological Appraisal

for

Land adjacent to Hedding Farm, and off The Lane, Wyboston

June 2019

Status: For planning

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Quality management		
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Approved by:	[redacted]	Name: [redacted] Title: Director
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Client Details	
Client:	[redacted]
Client Address:	Hedding Farm | 102 The Lane | Wyboston | Bedfordshire | MK44 3AS

Contact Details

The Landscape Partnership Ltd

Greenwood House | 15a St Cuthberts Street | Bedford | MK40 3JG — Tel: 01234 261315

East Building | Holland Court | Cathedral Close | Norwich | NR1 4DY — Tel: 01603 230777

The Granary | Sun Wharf | Deben Road | Woodbridge | IP12 1AZ — Tel: 01394 380509

Ensign House (E&F) | Tavern Quay | Sweden Gate | Surrey Quays | London | SE16 7TX — Tel: 020 3092 4141

The Landscape Partnership Ltd is a practice of Chartered Landscape Architects, Chartered Ecologists and Chartered Environmentalists, registered with the Landscape Institute and a member of the Institute of Environmental Management & Assessment & the Arboricultural Association.

Registered Office:
Greenwood House
15a St Cuthberts Street
Bedford
MK40 3JG

Registered in England No 2709001

Quality standards

This report is certified BS 42020 compliant and has been prepared in accordance with The Chartered Institute of Ecology and Environmental Management's (CIEEM) Technical Guidance Series '*Ecological Report Writing'* and Code of Professional Conduct.

Contents

Figures

Appendices

Non-technical summary

The Landscape Partnership was commissioned by [redacted] to undertake a Preliminary Ecological Appraisal comprising a desk study, Phase 1 Habitat Survey and an assessment of the potential of site features to support bats, together with an assessment of impacts at Land adjacent to Hedding Farm, and off The Lane, Wyboston.

The objectives of the appraisal were to identify the habitats and species present or potentially present and evaluate their importance, assess the impact of the development proposal and describe any measures necessary to avoid impacts, reduce impacts or compensate for impacts so that there is no net harm to ecological features.

The survey involved classifying and recording habitat types and features of ecological interest and identified the potential for protected species to be present by assessing habitat suitability for those species. The survey was undertaken by appropriately qualified and experienced personnel.

The site comprises a small field of improved grassland with hawthorn and bramble encroachment and is bounded by a defunct hedgerow, scrub and fencing. Collectively the habitats within the proposed development site are assessed as being of value at the **Site Only** level.

Based on the habitat types present, it is considered that the site has potential to support the following protected species or groups of species: breeding birds and bats.

The proposed development is for residential purposes with associated infrastructure. Four dwellings are proposed for the site, with associated garages and gardens.

In the absence of mitigation, the proposed development would give rise to the following impacts: potential destruction of a nesting bird and disturbance of roosting bats, which could give rise to a **Minor Adverse** impact upon birds and bats. Mitigation has been proposed, including removal of vegetation outside the nesting bird season or following a nesting bird check, and a fenced buffer between the existing buildings adjacent to the western boundary and the construction zone. This mitigation would reduce the impacts of the development proposals upon the habitats and species present, to give rise to an overall **Neutral** impact.

No further surveys are recommended at this stage. Further bat survey would be required if the design changes to extend gardens to the west into the land currently acting as a buffer to outbuildings with bat potential outside the site, or if a recommended 1.8m garden fences along the western boundary cannot be achieved. The further surveys for bats would be required to ascertain whether any bat roosts in the outbuildings would be disturbed by the proposed development.

A number of **ecological enhancements** have been proposed, which would improve the quality of the site for native flora and fauna, including habitat piles, hedgehog tunnels, bat boxes, bird boxes and native planting. Delivery of these enhancements would lead to an overall **Neutral** impact.

1 Introduction

1.1 Commission

1.1.1 The Landscape Partnership was commissioned by [redacted] to carry out a Preliminary Ecological Appraisal (PEA), comprising a desk study, Phase 1 Habitat Survey and an assessment of the potential of site features to support bats, together with an assessment of impacts.

1.2 Legislation and policy background

1.2.1 There is a range of protection given to sites and species. Sites may be designated for local, national, European or global importance for nature conservation. Species may be protected by European-scale legislation or varying levels of national regulation.

1.2.2 The Local Planning Authority has a policy to protect features of nature conservation value within its Local Plan. Other regulators have policies relating to the consents issued by them.

1.2.3 Further information is given in Appendix 1.

1.3 Reporting standards

1.3.1 This report was written in compliance with British Standard 42020:2013 'Biodiversity — Code of practice for planning and development' and the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct.

1.3.2 This report was prepared in accordance with the CIEEM 'Guidelines for Ecological Report Writing' as updated December 2017[1].

1.3.3 The report was prepared by [redacted]. The report was reviewed by [redacted] Director of The Landscape Partnership.

1.3.4 Assessment was undertaken against current legislation and planning policy, and in accordance with standard guidance. Further information is given in Section 2 and Appendix 2.

1.4 Site location and context

1.4.1 The site is located approximately 1.5km south west from the edge of the urban area of St Neots, within the parish of Wyboston, Chawston and Colesdon and within the village of Wyboston. Access is from The Lane to the south. The site is thought to have previously been used as pasture. The site currently comprises a small field of improved grassland with hawthorn and bramble encroachment, and is bounded by defunct hedgerow, scrub and fence.

1.4.2 The wider landscape consists of pasture and arable fields, with residential areas of Wyboston and surrounding villages. The River Great Ouse is located 950m southeast of the site boundary, which is located beyond the A1.

1.4.3 The Ordnance Survey Grid Reference for the approximate centre of the proposed development site is TL 1578 5688. The location of the site is shown in Figure 01. A plan showing the site is provided at Figure 02.

1.5 Acknowledgements

Permissions to gain access to land

1.5.1 Permission to gain access to the land for survey is gratefully acknowledged.

1 CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester

Surveyor Competencies

Survey(s) undertaken	Surveyor(s)	Experience (years)	Licences Held
Phase 1 habitat survey Preliminary bat roost inspection: Trees	[redacted]	5+	Great crested newt Class Licence CL08 (Level 1) Bat Survey Class Licence CL18 (Level 2)

Other contributors

1.5.2 We acknowledge the input of:

- Bedfordshire and Luton Biodiversity Recording and Monitoring Centre for provision of data.

1.6 Description of the project

1.6.1 The proposed development is for residential purposes with associated infrastructure. Four dwellings are proposed for the site, with associated garages and gardens. Access is proposed off The Lane through a new access into the site. Parts of the southern boundary hedgerow will need to be removed to facilitate this new access point.

1.6.2 The development proposals are shown in Appendix 3.

1.7 Objectives of this appraisal

1.7.1 The purpose of this appraisal is to inform a planning application for the proposed development, as described above. Detailed objectives are to:

- identify the habitats and species present or potentially present and evaluate their importance;
- identify any ecological constraints to development;
- assess the impact of the development proposal;
- identify any opportunities available for integrating ecological features within the development;
- describe any measures necessary to avoid impacts, reduce impacts or compensate for impacts so that there is no net harm to ecological features;
- propose ecological enhancements;
- identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA).

1.8 Previous ecological studies

1.8.1 There are no known previous ecological studies of the site; however, previous ecological studies have been carried out within the local area and include:

- The Landscape Partnership (2017) Chawston Lakes, Wyboston[2]. The site consisted of three large lakes, surrounded by dense scrub, woodland and mature willow trees. Poor quality semi-improved grassland, with tall ruderal vegetation, was located in the centre of the site that had regularly mown paths. A badger sett was recorded within the site boundary and a juvenile grass snake was recorded within the site.
- The Landscape Partnership (2017) The Lane, Wyboston[3]. The site comprised a section of a larger arable field and a small area of grassland, separated by a section of Begwary Brook. The site itself offered little ecological value with the except of Begwary Brook.

2 The Landscape Partnership (2017) Ecological Impact Assessment for Chawston Lakes, Wyboston.
3 The Landscape Partnership (2017) Preliminary Ecological Appraisal for 31 The Lane, Wyboston.

1.9 Duration of appraisal validity

1.9.1 The assessment, conclusions and recommendations in this appraisal are based on the studies undertaken, as set out in this report, and the stated limitations. This appraisal is based on the project as described and any changes to the project would need the appraisal to be reviewed. Unless otherwise stated, the assessment, conclusions and recommendations given assume that the site habitats will continue to be used for their current purpose without significant changes until development takes place. However, changes in use or management may occur between the time of the survey and proposals being implemented. Ecological features may change naturally at any time; for example, species may be lost from existing sites or colonise new areas. Our knowledge of the ecology of the site enables us to provide an estimate of the duration of the validity of the surveys carried out and hence the applicability of this appraisal, so that any future need for review and update of this appraisal, or the surveys described within it, and the date by which such updates would become necessary, can be identified.

1.9.2 The table below sets out a guide to duration of validity of each element of each information source. If the proposed development is delayed beyond the stated timescale, update surveys or further investigations may be required. Provided a planning application is made and validated prior to the end of the period stated below there would not normally be a requirement for further update survey except as indicated in Section 4.6.

Information source	Date undertaken	Guideline duration of validity from date undertaken	Notes
Desk study	23rd May 2019	1 – 2 years	Further data may become available.
Phase 1 habitat survey	3rd June 2019	2 years	The habitats on site may change especially if management changes.
Preliminary bat roost inspection: Trees	3rd June 2019	2 years	Storm damage, tree felling or other factors can change bat roost potential of trees.

2 Methodology

2.1 Desk study methodology

2.1.1 Bedfordshire and Luton Biodiversity Recording and Monitoring Centre was asked to provide records of protected, rare and/or priority species and details of statutory and non-statutory designated sites, within a 1km radius of a central grid reference point of TL 1578 5688. The data were received on 23rd May 2019.

2.1.2 The Magic website[4] was used to identify European sites within a 5km radius and national sites within a 1km radius. The Magic website was accessed on 22nd May 2019.

2.1.3 Aerial photographs and OS maps were used to gain initial information about the site and the surrounding area. This gives an indication of the types of habitat and species likely to be present and the setting of the site within the landscape.

2.1.4 Water bodies within 250m of the site were identified from the relevant 1:25,000 Ordnance Survey map sheet, to establish the need for protected species scoping surveys, such as great crested newt Habitat Suitability Index surveys. Consideration was also given to the green infrastructure of the local area.

2.1.5 The potential for protected, rare and/or priority species to be present on site has been considered in this assessment, taking into account the nature of the site and the habitat requirements of the species in question. Absence of records does not constitute absence of a species. Habitats on the site may be suitable for supporting other protected species that have not previously been recorded within the search area. Conversely, presence of a protected species in the search area does not imply its presence on-site. Records of alien species, non-localised records (e.g. tetrad records) and records dated before 1995 have not been described in detail but are taken into account when considering likely species presence or absence.

2.1.6 The data supplied by the Records Centre were considered in the assessment of potential impacts below.

Limitations to desk study methodology

2.1.7 In accordance with BS42020 and advice from most Local Biological Record Centres, species lists are not appended to this report but are available to the Local Planning Authority on request.

2.1.8 Availability of records will vary in different locations, as many depend on the presence of local experts and survey effort within the local area. An absence of a record does not necessarily indicate the absence of that species.

2.1.9 Records of bats and bat roosts in the area are held by the Bedfordshire Bat Group, from whom records were not obtained.

2.2 Phase 1 habitat survey methodology

2.2.1 The standard Phase 1 (baseline) habitat survey methodology[5] was followed. Phase 1 habitat survey is a standardised system for surveying, classifying and mapping wildlife habitats, including urban areas. All habitats present and areas or features of ecological interest within such habitats were recorded and mapped. The survey methodology facilitates a rapid assessment of habitats and it is not necessary to identify every plant species on site. Where given, scientific names of plant species follow Stace Ed. 3[6].

2.2.2 The survey visit was also used to identify potential for protected, rare and/or priority species, for example bats, mammals, amphibians and reptiles, to occur on, or in the vicinity of, the proposed development site. Although the survey methodology is not intended for species survey, any protected, rare and/or priority species which were seen during the survey were noted.

4 MAGIC: https://magic.defra.gov.uk/MagicMap.aspx.
5 JNCC (2010) *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit.* Reprinted by JNCC, Peterborough.
6 Stace, C 2010 *New Flora of the British Isles*. Cambridge University Press. 3rd Edition.

2.2.3 The survey was undertaken on 3rd June 2019 and the weather conditions were bright, dry and clear, with 10% cloud cover, a gentle breeze (Beaufort 3) and temperatures of 16°C.

Limitations to Phase 1 habitat survey

2.2.4 There were no significant limitations to the Phase 1 habitat survey.

2.3 Preliminary bat roost assessment methodology: Trees

Rationale

2.3.1 Bats are European Protected Species. Many roosts are within trees, and the protection given to roosts means that their presence or absence in trees on the proposed development site needs to be understood.

Methodology

2.3.2 The standard Preliminary Ground Level Roost Assessment (PRA) methodology for trees[7] was followed. This aims to determine the actual or potential presence of bats, by inspecting for potential roost features from the ground, and determines any need for further survey and/or mitigation.

2.3.3 Trees within the proposed development area were inspected for the presence of features which may be suitable for use by roosting bats, with particular attention given to older and mature trees. A thorough inspection was undertaken, looking for features and signs indicative of bat roosts:

- woodpecker holes;
- rot holes;
- hazard beams;
- other vertical or horizontal cracks and splits, such as frost cracks in stems or branches;
- partially detached bark plates;
- knot holes arising from naturally shed branches, or branches previously pruned back to the branch collar;
- artificial holes (such as 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 at the base of the tree;
- potential cavities in the fork between double trunks ("compression forks"), where the wood has grown around sections of bark ("included bark");
- gaps between overlapping stems or branches;
- partially detached ivy with stem diameters in excess of 50mm;
- bat, bird or dormouse boxes.

2.3.4 Signs of a bat roost, in addition to the visible presence of bats, include:

- bat droppings in or around a potential roost feature (PRF);
- odour coming from a PRF;
- audible bat squeaks at dusk or during the day in warm weather;
- staining below the PRF.

2.3.5 Some signs, such as staining, odour or squeaking, may originate from other species, and staining may arise from wet rot which would preclude bat use. Bats or bat droppings are the only conclusive evidence of bat use, but many bat roosts have no external signs.

2.3.6 The survey of trees included an assessment of their potential to support bat roosts using the following categories.

7 Collins, J. (ed.) (2016) *Bat surveys for professional ecologists: good practice guidelines*, Third Edition, Bat Conservation Trust.

Category	Description
Negligible	Trees with no potential to support bats
Low	A tree of sufficient size and age to contain potential roost features, but with none seen from the ground, or where the features seen have only very limited potential to support bats.
Moderate	A tree with one or more potential roost features, that could be used by bats due to their size, shelter, protection, condition and surrounding habitat, but are unlikely to support a roost of high conservation status.
High	A 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, condition and surrounding habitat.
Confirmed roost	Trees with evidence of bats present.
Unknown	Unable to survey fully, for example because part of the tree is inaccessible.

2.3.7 The assessment was undertaken on 3rd June 2019 and the weather conditions were bright, dry and clear, with 10% cloud cover, a gentle breeze (Beaufort 3) and temperatures of 16°C.

Limitations to preliminary bat roost assessment: trees

2.3.8 The dense canopy of Tree 5 prevented full inspection of the tree beyond 5m+ from ground level.

2.4 Assessment methodology

2.4.1 The assessment was undertaken in accordance with the Chartered Institute of Ecology and Environmental Management's Professional Guidance Series[8].

2.4.2 More details of the assessment methodology are provided in Appendix 2, but, in summary, the impact assessment process involves:

- identifying and characterising impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects; and
- identifying opportunities for ecological enhancement.

2.4.3 The hierarchical process of avoiding, mitigating and compensating for ecological impacts is explained further below.

2.4.4 In Ecological Impact Assessment (EcIA) it is only essential to assess and report significant *residual* effects (i.e. those that remain after mitigation measures have been taken into account). However, it is considered good practice for the EcIA to make clear both the potential significant effects without mitigation and the residual significant effects following mitigation, particularly where the mitigation proposed is experimental, unproven or controversial. Alternatively, it should demonstrate the importance of securing the measures proposed through planning conditions or obligations.

2.4.5 Assessment of the potential impacts of the proposed development takes into account both on-site impacts and those that may occur to adjacent and more distant ecological features. Impacts can be positive or negative. Negative impacts can include:

- direct loss of wildlife habitats;
- fragmentation and isolation of habitats through loss of connectivity;
- disturbance to species from noise, light or other visual stimuli;
- changes to key habitat features; and
- changes to the local hydrology, water quality, nutrient status and/or air quality.

8 CIEEM (2016) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal*, Second Edition. Chartered Institute of Ecology and Environmental Management, Winchester.

2.4.6 Negative and positive impacts on ecological features are characterised based on predicted changes as a result of the proposed activities. In order to characterise the impacts on each feature, the following parameters are considered:

- the magnitude of the impact;
- the spatial extent over which the impact would occur;
- the temporal duration of the impact and whether it relates to the construction or operational phase of the development;
- the timing and frequency of the impact; and
- whether the impact is reversible and over what time frame.

2.4.7 Both short-term (i.e. impacts occurring during the site clearance and construction phases) and long-term impacts are considered.

Conservation status

2.4.8 The extent to which the proposed development may have an effect upon ecological features should be determined in the light of its expected influence on the integrity of the site or ecosystem. The integrity of protected sites is considered specifically in the light of the site's conservation objectives. Beyond the boundaries of designated sites with specific nature conservation designations and clear conservation objectives, the concept of 'conservation status' is used. Conservation status should be evaluated for a study area at a defined level of ecological value. The extent of the area used in the assessment relates to the geographical level at which the feature is considered important.

2.4.9 For habitats, conservation status is determined by the sum of the influences acting on the habitats and their typical species that may affect their long-term distribution, structure and functions, as well as the long-term survival of its typical species within a given geographical area. For species, conservation status is determined by the sum of influences acting on the species concerned and inter-relationships that may affect the long-term distribution and abundance of its populations within a given geographical area.

Confidence in predictions

2.4.10 It is important to consider the likelihood that a change or activity will occur as predicted and also the degree of confidence in the assessment of the impact on ecological structure and function.

- **Certain** probability estimated at above 95%
- **Probable** probability estimated above 50% but below 95%
- **Possible** probability estimated above 5% but below 50%
- **Unlikely** probability estimated as less than 5%

Cumulative impacts

2.4.11 Consideration is also given to the potential for the development proposal to give rise to significant negative impact in combination with other proposed developments in the local area.

Overall assessment

2.4.12 An overall assessment of value and impact is provided. This is based upon the highest level or value of any of the features or species present, or likely to be present on the site. Similarly, the overall assessment of impact is the impact of greatest significance.

2.5 Mitigation hierarchy

2.5.1 The following principles underpin EcIA and have been followed, where applicable, in this assessment.

- **Avoidance** Seek options that avoid harm to ecological features (for example, by locating the proposed development on an alternative site or safeguarding on-site features within the site layout design).
- **Mitigation** Adverse effects should be avoided or minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

- **Compensation** Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.
- **Enhancement** Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

3 Results

3.1 Desk study results

Sites of International and European importance

3.1.1 There were no sites of International or European importance in the search area.

Sites of national importance

3.1.2 There were no sites of national importance in the search area.

Sites of local importance

3.1.3 The following sites of local importance (Local Wildlife Site, County Wildlife Site, Ancient Woodland, Local Nature Reserve) were identified within the search area and are detailed within the table below.

Site	Distance from development site (approx.)	Direction	Key habitat/features of interest
Wyboston Pits CWS	850m	E	This site is recognised for its waterbodies. Habitats include standing open water and canals, broadleaved, mixed and yew woodland, neutral grassland and marshy grassland.
Begwary Brook Pits CWS	900m	SE	This site is recognised for its mosaic of freshwater and wetland habitats. Habitats include fen, marsh and swamp, rivers and streams and standing open water and canals, with neutral grassland, wet woodland, scrub and ruderal vegetation.
River Great Ouse CWS	950m	SE	This site is recognised for the river. Habitats include wet woodland, floodplain grazing marsh, neutral grassland, scrub, mature trees and pollards, copses and plantations and ruderal vegetation.

3.1.4 Further information is provided in Appendix 4 and site locations relative to the proposed development site are shown in Appendix 4.

Protected, rare and/or priority species

3.1.5 A number of species records were returned for the search area. Records for protected, rare and/or priority species from within the search area are summarised below. In accordance with BS42020 and advice from most Local Biological Record Centres, species lists are not appended but are available to the Local Planning Authority on request.

Veteran trees

3.1.6 No veteran tree records were returned.

Plants

3.1.7 Records for a number of plant species, including greater dodder *Cuscuta europaea*, common cudweed *Filago vulgaris*, bee orchid *Ophrys apifera*, hoary plantain *Plantago media* and vervain *Verbena officinalis*, were returned within the data search.

3.1.8 Records of Canadian waterweed *Elodea canadensis* and Indian balsam *Impatiens glandulifera* and historical records of Japanese knotweed *Fallopia japonica* were returned within the local area. These plants are listed on the Wildlife and Countryside Act 1981, as amended, Schedule 9 list for invasive and non-native species.

Invertebrates

3.1.9 A number of invertebrate records were returned.

3.1.10 Butterfly and moth species recorded included small heath *Coenonympha pamphilus*, wall *Lasiommata megera*, cinnabar *Tyria jacobaeae* and blood-vein *Timandra comae*. Two records for scarce chaser dragonfly *Libellula fulva* were also returned.

3.1.11 Historical records of molluscs, dragonflies, hymenopteran and coleoptera were also returned.

3.1.12 Stag beetle is relatively uncommon in this part of the county[9], although no records for this species were returned.

Fish

3.1.13 European eel *Anguilla anguilla* and bullhead *Cottus gobio* fish records were returned from the River Great Ouse.

Amphibians including great crested newts

3.1.14 There were a couple of records of common toad *Bufo bufo* and smooth newt *Lissotriton vulgaris* in the search area. No records of great crested newt *Triturus cristatus* were returned.

Reptiles

3.1.15 Two grass snake *Natrix helvetica* records were returned. The closest record was 500m south west of the site.

Birds

3.1.16 There were many bird records for the area. The majority, including lesser redpoll *Acanthis cabaret*, skylark *Alauda arvensis*, kingfisher *Alcedo atthis*, swift *Apus apus*, cuckoo *Cuculus canorus*, corn bunting *Emberixa calandra*, yellowhammer *Emberiza citrinella*, linnet *Linaria cannabina*, nightingale *Luscinia megarhynchos*, yellow wagtail *Motacilla flava*, spotted flycatcher *Muscicapa striata*, house sparrow *Passer domesticus*, grey partridge *Perdix perdix*, dunnock *Prunella modularis*, turtle dove, *Streptopelia decaocto*, starling *Sturnus vulgaris*, song thrush *Turdus philomelos*, and barn owl *Tyto alba*, were recorded from the adjacent semi-natural habitats. There were no bird records for the site itself.

Dormouse

3.1.17 No dormouse *Muscardinus avellanarius* records were returned.

Terrestrial Mammals including badgers

3.1.18 Badger *Meles meles* has been recorded from the local area, as has hedgehog *Erinaceus europaeus*.

3.1.19 Records of American mink *Neovison vison* were also returned. This species is listed on the Wildlife and Countryside Act 1981, as amended, Schedule 9 list for invasive and non-native species.

3.1.20 Records of harvest mouse *Micromys minutus*, stoat *Mustela erminea*, polecat *Mustela putorius* and common shrew *Sorex araneus* were returned.

3.1.21 Muntjac *Muntiacus reevesi* and grey squirrel *Sciurus carolinensis* were also returned. These species are listed on the WCA 1981, as amended, Schedule 9 list for invasive and non-native species.

Aquatic Mammals including water voles and otters

3.1.22 Otter *Lutra lutra* have been recorded in the local area, predominantly from Begwary Brook NR & CWS and River Great Ouse CWS. No water vole records were received.

Bats

Records of bats were not obtained from Bedfordshire Bat Group.

9 https://ptes.org/wp-content/uploads/2018/06/SoBSB_2018.pdf

3.2 Phase 1 habitat survey results

3.2.1 Eleven Phase 1 habitat categories were identified during the Phase 1 habitat survey and are shown on Figure 02. Each habitat is described below.

Management, setting and green infrastructure

3.2.2 The habitat comprised a small field of improved grassland, likely to have been previously used as pasture. The southern boundary consisted of defunct hedgerow that had received some previous management but had not been maintained in the few years prior to the time of survey. Several hawthorn standards were present within the site, that may have self-seeded from the hedgerow. Tall ruderal vegetation and bramble and hawthorn scrub was encroaching into the field. An area of wooded habitat was present toward the east of the site that was dominated by immature and semi-mature sycamore and hawthorn. A 3m strip of land adjacent to the western boundary was considered to be ephemeral vegetation.

3.2.3 The wider landscape consisted of pasture, mainly horse grazed, and the residential areas of Wyboston and surrounding villages. The River Great Ouse is located 950m southeast of the site boundary, beyond the A1.

A1.1.1 Broadleaved semi-natural woodland

3.2.4 A small area of wooded habitat was located towards the eastern boundary. This woodland was dominated by sycamore *Acer pseudoplatanus*, with hawthorn *Crataegus monogyna* dominating the understory vegetation. The ground flora consisted of ivy *Hedera helix*, nettle *Urtica dioica*, garlic mustard *Alliaria petiolata*, cleavers *Galium aparine* and bramble *Rubus fruticosus* agg.

A2.1 Dense scrub

3.2.5 Two strips of vegetation along the northern boundary were dense scrub. The species included within this habitat were dominated by hawthorn and bramble and were likely to be remnants of an old hawthorn hedgerow.

A2.2 Scattered scrub

3.2.6 Two areas of scattered scrub were present within the site boundary. The first area towards the northern boundary consisted of low-laying bramble with cleavers, nettles and hawthorn saplings. The second area of scattered scrub was towards the wooded habitat and consisted of bramble, with ivy and ground ivy *Glechoma hederacea*.

A3.1 Scattered broadleaved trees

3.2.7 A number of scattered trees were present within the site, including hawthorn and an ash *Fraxinus excelsior*.

B4 Improved grassland

3.2.8 The majority of the site consisted of improved grassland. The sward height of the grassland was variable and had an average of approximately 30cm and there were frequent patches of bare-ground through the sward. The sward was dominated by false oat grass *Arrhenatherum elatius*, with soft brome *Bromus hordaecus*, meadow grass *Poa* sp. and cock's-foot *Dactylis glomerata*. Forb species constituted approximately 30% of the sward with large areas dominated by ribwort plantation *Plantago lanceolata*. Other forb species included cut-leaved crane's-bill *Geranium dissectum*, common field speedwell *Veronica persica*, common vetch *Vicia sativa* ssp. *nigra*, goat's-beard *Tragopogon pratensis* ssp. *minor*, field forget-me-not *Myosotis arvensis* and common poppy *Papaver rhoeas*. More ruderal forbs were present towards the hedgerow base and areas of scrub and included hogweed *Heracleum sphondylium*, nettle, cleavers, cow parsley *Anthriscus sylvestris* and prickly sow-thistle *Sonchus asper*.

3.2.9 A strip of grassland was present along the road edge between the southern boundary hedgerow and The Lane. This grassland had been recently mown but contained species similar to those found within the site. Additional species included common mallow *Malva sylvestris*, yarrow *Achillea millefolium*, sterile brome *Anisatha sterilis*, dandelion *Taraxacum officinale* agg. and creeping cinquefoil *Potentilla reptans*.

C3.1 Tall ruderal

3.2.10 A small area of tall ruderal vegetation was present towards the eastern site boundary. This vegetation was dominated by nettle, with cow parsley.

J1.3 Ephemeral/short perennial

3.2.11 A strip of ephemeral vegetation was present along the western site boundary and extended into the site approximately 3m from this boundary. This area appeared to be formerly bare ground and species had begun to re-establish. Species within this habitat included red dead-nettle *Lamium purpureum*, creeping thistle *Cirsium arvense*, smooth sow-thistle *Sonchus oleraceus*, ground-ivy, and willowherb *Epilobium* sp.

J2.2.2 Species-poor defunct hedge

3.2.12 A defunct hedgerow was present along the southern site boundary and was approximately 2.5m in height and 1m in width. The hedgerow was dominated by hawthorn, with ivy. Towards the eastern end of the hedgerow, the hedgerow was more species rich and included species such as elder *Sambucus nigra*, ash and white bryony *Bryonia dioica*. This hedgerow had afforded some management in the past but had not recently been managed, the hedgerow towards the east was less managed and trees were being to grow to new heights.

J2.4 Fence

3.2.13 Timber post, with barbed wire and electric fencing demarcated the northern site boundary. The eastern site boundary was defined by metal fencing and close-board fencing.

J3.6 Buildings

3.2.14 There were two buildings adjacent to the western site boundary. These buildings were only inspected externally and only along their eastern elevations that were adjacent to the site.

3.2.15 The first building was a single storey barn constructed from wooden cladding on a brick plinth, with a pitched roof covered with corrugated sheeting. There were numerous gaps providing access points into the building including broken areas of roof cladding and wooden cladding. The windows comprised wooden frames that had gaps. This building was considered to provide moderate bat roost potential.

3.2.16 The second building was attached to the first and it is unknown whether they are internally connected. This was a single storey barn constructed from brick, with a pitched roof covered with clay pantiles. These pantiles, as well as the ridge tiles were well-sealed. Lead-flashing was present where the roofs of different parts of the building met and were not of the same height. This lead-flashing did not appear to be lifted. There was access into the building at one of the gable ends. This building was considered to provide low bat roost potential.

3.2.17 The locations of these buildings are shown in Figure 03.

J4 Hardstanding

3.2.18 The road adjacent to the southern boundary consisted of asphalt.

3.3 Preliminary bat roost assessment results: Trees

3.3.1 Seven trees and one group of trees were assessed.

3.3.2 The results of the survey are shown in the table below and the location of the trees is shown in Figure 03.

Tree		Potential Roost Feature (PRF)			Bat Roost Potential	Comments
No.	**Species**	**Type**	**Height above ground**	**Facing direction**		
T1	Hawthorn	No roosting features were present			Negligible	Multi-stemmed hawthorn that was 3-3.5m in height
T2	Hawthorn	No roosting features were present			Negligible	Multi-stemmed hawthorn that was 3-3.5m in height

Tree		Potential Roost Feature (PRF)			Bat Roost Potential	Comments
No.	**Species**	**Type**	**Height above ground**	**Facing direction**		
T3	Hawthorn	No roosting features were present			Negligible	Multi-stemmed hawthorn that was 3-3.5m in height
T4	Ash	No roosting features were present			Negligible	Previously managed as part of the hedgerow but this management ceased, and the tree was allowed to grow
T5	Sycamore	Ivy	0m	ALL	Low	Unable to fully inspect due to dense canopy
		Knot hole – does not lead to a cavity	2m	W		
		2x aerial deadwood branches	2m + 2.5m	W		
T6	Sycamore	-			Unknown	These trees have been historically pollarded. It is unclear whether this leads to a cavity
T7	Hawthorn	No roosting features were present			Negligible	Multi-stemmed hawthorn that was 3-3.5m in height
G8	Mixed	Ivy	0m	ALL	Negligible to Low	Trees within the woodland

4 Evaluation of conservation status and impact assessment

4.1 Assessment rationale

4.1.1 The assessment is based on the ecological data presented within this report. Future changes in the wildlife present on site are beyond the scope of this report, unless specifically stated.

4.2 Evaluation of conservation status and assessment of designated sites

4.2.1 The ecological value of the site is considered below and evaluated using the methodology set out in Appendix 2 and in accordance with species legislation and planning policy, as outlined in Appendix 1.

Sites of International and European importance

4.2.2 There are no sites of International or European importance within the search area. The impact of the proposed development upon International and European designated sites is therefore assessed as **Neutral**.

Sites of national importance

4.2.3 There are no sites of national importance in the search area. The impact of the proposed development upon nationally designated sites is therefore assessed as **Neutral**.

4.2.4 Sites of Special Scientific Interest (SSSI) Impact Risk Zones are used to assess the necessity to consult Natural England on planning applications at varying distances from SSSIs. In accordance with the SSSI Impact Risk Zones User Guidance[10] consultation with Natural England would be required for the proposed development site for:

- **Infrastructure:** Airports, helipads and other aviation proposals.
- **Air pollution:** Livestock & poultry units with floorspace >500m^2, slurry lagoons >750m^2 & manure stores >3500t.
- **Discharges:** Any discharge of water or liquid waste of more than 20m3/day to ground (i.e. to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).

4.2.5 The proposed development does not fall within these categories and therefore does not require consultation with Natural England.

4.2.6 The impact of the proposed development upon sites of national importance is considered to be **Neutral**, due to the distance of the proposed development from the designated sites, the reasons for the sites' designation and the character of the development within its local context.

Sites of local importance

4.2.7 Three County Wildlife Sites (CWS) were present within the local area. These sites are assessed as being of **Medium** importance for wildlife at the **County** scale.

4.2.8 The three CWS were situated to the east of the A1 and are not connected to the development site by public footpaths. It is considered that the impact of the proposed development will be **Neutral**, because of the low number of dwellings proposed and the barrier created by the A1.

4.3 Evaluation of conservation status and assessment of habitats and green infrastructure

Habitats

4.3.1 Habitats of higher ecological value include the wooded habitats and hedgerows. Habitats, such as the scrub and grassland offer low to moderate ecological value due to their limited extent and poor quality, respectively. These habitats are considered to be **Lower** value at the **Parish** scale.

4.3.2 The southern boundary hedgerow is due for retention with a small gap proposed for a new access road and an open zone of 3m between the existing buildings adjacent to the western boundary are proposed within the current site plan. Furthermore, additional tree planting is proposed within

10 Magic Maps www.magic.defra.gov.uk/MagicMap.aspx

the development. These measures should reduce the impact of the proposed development upon habitats to **Neutral**.

Green infrastructure

4.3.3 The hedgerow along the southern boundary offers some value for habitat linkage within the local area; however, it is not well connected to other green infrastructure within the local area.

4.4 Evaluation of conservation status and assessment of species

Veteran trees

4.4.1 There are no veteran trees present on the site and the value of the proposed development site for these is therefore **Negligible**. The impact of the proposed development upon veteran trees is **Neutral.**

Plants

4.4.2 The character of the habitats recorded at the site and the plant records returned for the local area, suggests that the site has no potential to support protected, rare and/or priority plants. The value of the proposed development site for this group is **Negligible** and the impact of the proposed development is **Neutral.**

Invertebrates

4.4.3 The character of the habitats recorded at the site and the invertebrate records returned for the local area, suggests that the site has no potential to support protected, rare and/or priority invertebrates. The value of the proposed development site for this group is **Negligible** and the impact of the proposed development is **Neutral.**

Amphibians including great crested newts

4.4.4 There are no ponds within the site boundary or within a 250m radius from the site boundary. The terrestrial habitat within the site offers some level of value for great crested newts, with the scrub, hedgerow and wooded habitat offering sheltering opportunities and the grassland providing foraging opportunities.

4.4.5 Although there is some valuable terrestrial habitat within the site boundary for this group, there is no suitable breeding opportunities within the local area, the site is not well connected to other suitable areas in the wider landscape and no record for this species was returned with the data search. It is for these reasons that the site is considered to provide **Negligible** opportunity for great crested newts and the impact of the development is considered to be **Neutral**.

Reptiles

4.4.6 The site offers some valuable habitat for this group, with the hedgerow and wooded habitat offering sheltering opportunities and the grassland providing some foraging opportunities. The habitats within the site are not in the best condition to support reptiles given the structure of the grassland. The site is not well-connected to more suitable area of reptile habitat within the wider landscape.

4.4.7 The site is considered to provide **Negligible** value to reptile species, due to the small size of the site itself, lack of connectivity to the local area and sub-optimal habitats within the site. The impact of the development is therefore considered to be **Neutral**.

Birds

Breeding birds

4.4.8 The site is likely to be used by common breeding bird species, both for nesting and foraging, with the wooded habitat, scrub and hedgerow being of greatest value in this respect. It is considered that the value of the site to breeding birds is **Lower** at the **Parish** scale. The scheme is likely to see the removal of the wooded habitat and scrub causing a loss of nesting habitat. The unmitigated impact is considered to be **Minor Adverse**. Mitigation has been proposed to reduce impacts to **Neutral.**

Wintering birds

4.4.9 There are no habitats present on site which might support significant populations of wintering birds, although the site does offer some limited foraging potential for small numbers of common species. The site is considered to be of **Negligible** value for this group.

Dormice

4.4.10 There were no dormouse records returned for the site, and the habitats present offer an inadequate resource for this species.

4.4.11 The site is therefore considered to be of **Negligible** value for this species and the impact of the proposed development is **Neutral**.

Aquatic mammals including water voles and otters

4.4.12 There are no watercourse or waterbodies within the site and within the immediate area surrounding the site that are considered suitable for otters and water voles. Begwary Brook is located 80m south of the site and Chawston Lake is located 450m south west of the site. Whilst the site offers some valuable terrestrial habitat for this group it is considered unlikely that these aquatic mammals would be present within the site.

4.4.13 The site is considered to be of **Negligible** value for water voles and otters, given the distance from the site to the watercourses/bodies, the small size of the site and more suitable terrestrial habitat within the wider area. The impact of the development upon otters and water voles is considered to be **Neutral**.

Terrestrial mammals including badgers

4.4.14 The site provided limited opportunities for badgers, hedgehogs and brown hare, given the small area of the site and lack of connectivity to other suitable resting or foraging areas in the local area. The hedgerow and wooded habitat offer some cover for sett creation; however, no evidence of this was recorded during the site visit.

4.4.15 The site is considered to be of **Negligible** value for this group and the impact of the development is considered to be **Neutral**.

Bats

Roosting potential

4.4.16 Of the trees and group of trees that were assessed for bat roost potential, they were assessed as providing negligible to low bat roost potential. These are considered to be of **Lower** importance for roosting bats at the **Parish** level. If these trees do require removal then they do not require further survey but mitigation, such as felling using soft felling techniques, should be adhered to, to ensure the impact of the development on these trees remains **Neutral**.

4.4.17 The buildings adjacent to the western site boundary are considered to provide low to moderate bat roost potential. The value of these buildings upon bats is **Unknown**. Under current design plans there is a 3m grassland buffer proposed from the buildings to the construction zone. Further mitigation, with regards to lighting, have also been suggested within Section 5 to ensure that bats are not disturbed by development works. If mitigation suggested can be adhered to then the impact of the proposed development upon roosting bats should be **Neutral**.

Foraging/commuting potential

4.4.18 Based on the evidence gained during the Phase 1 survey, the site is likely to be predominantly used for foraging purposes by relatively common and widespread bat species. Considering that this grassland field is not well connected to more suitable foraging habitat within the local area, the site is thought to be of **Negligible** value for this group. The impact of the proposed development for foraging and commuting bats is considered to be **Neutral**.

4.5 Cumulative impacts

4.5.1 There are no known cumulative impacts.

5 Mitigation and avoidance measures

5.1 Avoidance measures

5.1.1 The following impact avoidance measures have been identified and will be delivered.

- All site boundary features, including hedgerow at the periphery of the site, are to be protected in the built scheme.

5.2 Proposed mitigation for known impacts

5.2.1 The following mitigation is required to reduce the impacts of the scheme to within acceptable limits.

Habitats

- Ensure that no works come closer than Root Protection Zones of trees and shrubs (as a minimum) from retained habitats.
- To mitigate for loss of vegetation, semi-natural planting should include berry-bearing native trees and shrubs to enhance food availability for wildlife. The proposed planting should be structurally diverse, with tree, shrub and ground layers, and areas of dense scrub as well as more open areas.
- Ornamental planting should constitute at least 50% by area of species of known value to wildlife (which might include native species), such as fruiting species and species known to provide a good nectar source. All ornamental planting should be structurally diverse, with tree, shrub and ground layers, and areas of dense planting as well as more open areas.

Rare plants

- No mitigation required.

Stag beetle

- No mitigation required.

Great Crested Newt

- No mitigation required.

Reptiles

- No mitigation required.

Breeding birds

- Vegetation removal required for the construction phase should take place outside the bird breeding season of March to August inclusive, to prevent disturbance to birds, or if removed in that period, only after a survey has shown that no active nests are present.

Dormouse

- No mitigation required.

Water Vole & Otter

- No mitigation required.

Badger

- Trenches should be filled in prior to the end of the working day, or a plank left leaning up from the base of the trench to the surface, so that animals falling in can get out of the excavation.
- Pipework should be closed off at the end of each working day to avoid badgers and other animals becoming trapped.

Bats

- A buffer of approximately 3m should be maintained between the construction zone during construction and the existing buildings adjacent to the western site boundary. This is to ensure that bats are not disturbed as a result of the development. The

construction zone should be confined with temporary fencing e.g. Heras at this point to prevent its accidental encroachment closer to the outbuildings

- Any trees due for removal that have low bat roost potential should be felled using soft felling techniques.
- Boundary habitats, in particular the existing buildings adjacent to the western boundary, should not be illuminated, either directly or via light spill from adjacent buildings. The outbuildings to the west outside the site have not been surveyed fully but have some potential for bat roosting. Although no external lighting is shown on the plans, it is possible that householders may wish to have garden lighting e.g. a light above the back doors. To prevent light spill on the outbuildings, it is recommended that the post and rail fence on the western boundary of plots 3 and 4 (Appendix 3) is replaced with a 1.8m high close-boarded fence for screening of light.

5.3 Compensation for ecological impacts

5.3.1 No compensatory habitat creation or management is proposed.

5.4 Species licensing

5.4.1 A European Protected Species licence would be needed to implement any impacts upon bats such as damaging a place used for shelter or disturbing the species in its place of shelter. This licence would only be required if mitigation, detailed above for bats, cannot be adhered to.

6 Enhancement measures

6.1 Ecological enhancement

6.1.1 Ecological enhancement aims to improve the quality of the site and the immediate vicinity for native flora and fauna. Such enhancements can also provide aesthetic appeal and can add value to the proposed development.

6.1.2 Enhancement opportunities specific to the development proposals for this site are provided below. It is not anticipated that all of these options would be utilised. The options are listed in order of priority, with habitat enhancements having most benefit to wildlife. Small-scale enhancements targeted at individual species, whilst valuable, are generally of less overall benefit than habitat enhancement measures.

6.2 Habitat enhancement

6.2.1 Wherever possible, planting would use native species, which support biodiversity significantly better than non-native plants. This is due to the numbers of flowers, fruits, seeds and berries that are produced by our native species and their different flowering and fruiting times throughout the year.

6.2.2 Habitat enhancements include the following.

- A contribution to the 'B-Lines' project[11] should be made by seeding with a native wildflower seed mix and use of native flowering trees and shrubs in planting scheme.
- The boundary vegetation, particularly along the northern boundary, should be strengthened by further planting, including berry-bearing species to provide for bird foraging, and native species to attract insects. A structurally diverse range of plants should be used, including shrubs large enough to support nesting birds. Species could include hawthorn *Crataegus monogyna*, field maple *Acer campestre,* wild service tree *Sorbus torminalis*, wayfaring tree *Viburnum lantana*, guelder rose *Viburnum opulus*, dogwood *Cornus sanguinea*, hazel *Corylus avellana*, holly *Ilex aquifolium*, oak *Quercus robur,* spindle *Euonymus europaeus,* yew *Taxus baccata,* and hornbeam *Carpinus betulus*.
- Permanent wildflower grassland habitat should be created along the western site boundary.
- Good practice in hedgerow maintenance should be employed, including cutting alternate sides of hedges on alternate years, which will benefit hedgerow species such as breeding birds, small mammals and bats.

6.2.3 These enhancements would benefit common invertebrates, breeding birds, badger foraging, and bat foraging.

6.3 Small-scale species enhancement measures

6.3.1 Small-scale enhancements to benefit individual species/species groups would include the following.

- Two bat boxes (e.g. Schwegler or similar), suitable for a range of bat species, should be erected on retained standard trees or buildings in unlit parts of the site.
- Two bird boxes (e.g. Schwegler or similar), suitable for a range of bird species, should be erected on retained standard trees or buildings in undisturbed parts of the site.
- A single habitat pile should be created, using woody cut material (brash) from vegetation clearance. These should be stacked in a quiet, sheltered corner of the site within the buffer area, to form piles measuring approximately 2m x 1m x 1m.
- Creation of hedgehog tunnels; a gap of 13cm x 13cm should be cut out of the base of garden fences to allow hedgehogs to move through the site after construction is complete.

11 https://www.buglife.org.uk/b-lines-hub

7 Recommendations

7.1 Recommended conditions

7.1.1 It is recommended that the following conditions, based on model conditions in Appendix D of BS42020:2013, are applied to the planning permission.

7.1.2 No removal of hedgerows, trees, scrub or bramble shall take place between 1st March and 31st August inclusive, unless a competent ecologist has undertaken a careful, detailed check of vegetation for active birds' nests immediately before the vegetation is cleared and provided written confirmation that no birds will be harmed and/or that there are appropriate measures in place to protect nesting bird interest on site. Any such written confirmation should be submitted to the local planning authority.

7.1.3 Prior to occupation, a "lighting design strategy for biodiversity" shall be submitted to and approved in writing by the local planning authority. The strategy shall a) identify those areas/features on site to which bats are particularly sensitive and that are likely to cause disturbance in or around their breeding sites and resting places, or along important routes used to reach key areas of their territory, for example, for foraging, and b) show how and where external lighting will be installed (through the provision of appropriate lighting contour plans and technical specifications) so that it can be clearly demonstrated that areas to be lit will not disturb or prevent the above species using their territory or having access to their breeding sites and resting places. All external lighting shall be installed in accordance with the specifications and locations set out in the strategy, and these shall be maintained thereafter in accordance with the strategy. Under no circumstances should any other external lighting be installed without prior consent from the local planning authority.

8 Conclusions

8.1.1 The purpose of this report was to inform a planning application for the proposed development.

8.1.2 The overall value of the site to wildlife is considered to be **Lower** at the **Site Only** scale.

8.1.3 A summary of assessments of value and the impact of the proposed development without mitigation, and the residual significant effects following mitigation, is provided in the table below.

Feature	Level of value	Scale	Unmitigated impact	Confidence level	Mitigated impact
Sites of European importance	Very High	European	Neutral	Certain	-
Sites of national importance	High	National	Neutral	Certain	-
Sites of local importance	Medium	County	Neutral	Probable	-
Habitats	Negligible	Site	Neutral	Probable	Neutral
Veteran trees	Negligible	-	-	-	-
Plants	Negligible	-	-	-	-
Invertebrates	Negligible	-	-	-	-
Amphibians including great crested newts	Negligible	-	-	-	-
Reptiles	Negligible	-	-	-	-
Breeding birds	Lower	Parish	Minor Adverse	Probable	Neutral
Wintering birds	Negligible	-	-	-	-
Dormice	Negligible	-	-	-	-
Aquatic mammals including water voles and otters	Negligible	-	-	-	-
Terrestrial mammals including badgers	Negligible	-	-	-	-
Bats: roosting in trees	Lower	Parish	Minor Adverse	Probable	Neutral
Bats: roosting in adjacent buildings	Unknown	Unknown	Unknown	Probable	Neutral
Bats: foraging/commuting	Negligible	-	-	-	-

8.1.4 No further surveys are recommended at this stage. Further bat survey would be required if the design changes to extend gardens to the west into the land currently acting as a buffer to outbuildings with bat potential outside the site , or if the recommended 1.8m garden fences along the western boundary cannot be achieved. The further surveys for bats would be required to ascertain whether any bat roosts in the outbuildings would be disturbed by the proposed development.

8.1.5 The overall impact of the proposals is considered to be **Minor Adverse** in the absence of mitigation. The mitigated impact is considered to be **Neutral**.

8.1.6 The adoption of all or most of the enhancement measures detailed in Section 6 above would give rise to a **Neutral** impact.

Figures

Key

Site Boundary

B19041 - Land adjacent to Hedding Farm, The Lane, Wyboston

Location Plan

Figure 01

Scale: NTS

May 2019

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Key

- Site Boundary
- A1.1.1 Broad-leaved semi-natural woodland
- A2.1 Dense scrub
- A2.2 Scattered scrub
- A3.1 Scattered broadleaved trees
- I B4 Improved grassland
- C3.1 Tall ruderal
- J1.3 Ephemeral / short perennial
- J2.2.2 Species-poor defunct hedge
- J2.4 Fence
- J3.6 Buildings
- J4 Hardstanding

B19041 - Land adjacent to Hedding Farm, The Lane, Wyboston

Phase 1 Habitat Survey

Figure 02

Scale: NTS

June 2019

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Building 2

Building 1

I

T1

T2

T3

T6

T6

G8

T7

T4

T5

Key

Site Boundary

Level of bat roost potential for buildings/trees

Negligible

Negligible to low

Low

Moderate

Unknown

Phase 1 Key

XXX	A2.1	Dense scrub
× × ×	A2.2	Scattered scrub
I	B4	Improved grassland
	C3.1	Tall ruderal
×	J1.3	Ephemeral / short perennial
	J2.2.2	Species-poor defunct hedge
	J2.4	Fence
	J4	Hardstanding

B19041 - Land adjacent to Hedding Farm, The Lane, Wyboston

Preliminary Roost Assessment for Bats

Figure 03

Scale: NTS

June 2019

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Appendix 1

Legislative and policy context

There is a number of pieces of legislation, regulations and policies specific to ecology which underpin this assessment. These may be applicable at a European, National or Local level. References to legislation are given as a summary for information and should not be construed as legal advice.

Birds Directive

The European Community Council Directive on the Conservation of Wild Birds (79/409/EEC), normally known as the Birds Directive, sets out general rules for the conservation of all naturally occurring wild birds, their nests, eggs and habitats. It was superseded by the 'new' Birds Directive (2009/147/EC) which generally updated the previous directive.

These requirements are interpreted into English law by the Wildlife and Countryside Act 1981 (as amended) with regard to protection of birds, and the Conservation of Habitats and Species Regulations 2017 with regard to the registration and regulation of Special Protection Areas.

Habitats Directive

The European Community Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC), normally known as the Habitats Directive, aims to protect the European Union's biodiversity. It requires member states to provide strict protection for specified flora and fauna (i.e. European Protected Species) and the registration and regulation of Special Areas of Conservation.

These requirements are interpreted into English law by the Conservation of Habitats and Species Regulations 2017 with regard to European Protected Species and the registration and regulation of Special Areas of Conservation.

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 interpret the Birds Directive and Habitats Directive into English and Welsh law. For clarity, the following paragraphs consider the case in England only, with Natural England given as the appropriate nature conservation body. In Wales, the Countryside Council for Wales is the appropriate nature conservation body.

Special Protection Areas and Special Areas of Conservation are defined in the regulations as 'European sites'. The Regulations regulate the management of land within European sites, requiring land managers to have the consent of Natural England before carrying out management. Byelaws may also be made to prevent damaging activities and if necessary, land can be compulsorily purchased to achieve satisfactory management.

The Regulations define competent authorities as public bodies or statutory undertakers. Competent authorities are required to make an appropriate assessment of any plan or project they intend to permit or carry out, if the plan or project is likely to have a significant effect upon a European site. The permission may only be given if the plan or project is ascertained to have no adverse effect upon the integrity of the European site. If the competent authority wishes to permit a plan or project despite a negative assessment, imperative reasons of over-riding public interest must be demonstrated, and there should be no alternative to the scheme. The permissions process would involve the Secretary of State and the option of consulting the European Commission. In practice, there will be very few cases where a plan or project is permitted despite a negative assessment. This means that a planning application has to be assessed by the Local Planning Authority, based on information provided by the applicant, and the assessment must either decide that it is likely to have no significant effect on a European site or ascertain that there is no adverse effect upon the integrity of the European site.

Government policy is for Ramsar sites (wetlands of global importance) to be treated as if they were European sites within the planning process.

Appropriate Assessment

Appropriate Assessment is required in certain instances under the Conservation of Habitats and Species Regulations 2017. Regulation 63 says that:

> *63.— (1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which-*
>
> *(a) is likely to have a significant effect on a European site or a European offshore marine site*

(either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of the site,

must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.

(2) A person applying for any such consent, permission or other authorisation shall provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable them to determine whether an appropriate assessment is required.

(3) The competent authority shall for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority may specify.

(4) They must also, if they consider it appropriate, take the opinion of the general public, and if they do so, they must take such steps for that purpose as they consider appropriate.

(5) In the light of the conclusions of the assessment, and subject to regulation 64 (considerations of overriding public interest), the competent authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).

(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which they propose that the consent, permission or other authorisation should be given.

The competent authority is typically the local planning authority. The appropriate assessment contains the information the council requires for the purposes of its assessment under the Habitat Regulations.

The Habitat Regulations also are applicable to local authority land use plans and policies. If a policy or plan is likely to have a significant effect upon a European site, the permission may only be given if the policy or plan is ascertained to have no adverse effect upon the integrity of the European site. This approach gives rise to a hierarchy of plans each with related appropriate assessments. For example, the appropriate assessment of a Regional Spatial Strategy will affect policies within a Core Strategy, which will then need its own appropriate assessment, and so on.

European Protected Species

European Protected Species of animals are given protection from deliberate capture, injury, killing, disturbance or egg taking/capture. Their breeding sites or resting places are also protected from damage or destruction, which does not have to be deliberate. A number of species are listed as European Protected Species, with those most likely to be considered in planning applications being bats, dormouse, great crested newt and otter. Natural England may give a licence for actions that are otherwise illegal, subject to them being satisfied on the three tests of no alternative, over-riding public interest, and maintenance of the species in favourable condition.

European Protected Species of plant are also listed and given protection. These species are generally very rare and unlikely to be present in proposed development sites.

Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981 has been amended many times, including by the Countryside and Rights of Way Act 2000. It contains provisions for the notification and regulation of Sites of Special Scientific Interest, and for protected species.

The Regulations regulate the management of land within Sites of Special Scientific Interest, requiring land managers to have the consent of Natural England before carrying out management.

All public bodies are defined as 'S28G' bodies, which have a duty to further the nature conservation of Sites of Special Scientific Interest in the undertaking of their functions. In practice, this prevents planning applications being permitted if they would harm Sites of Special Scientific Interest, as it would be a breach of that duty.

The Act makes it an offence intentionally to kill, injure, or take any wild bird, take, damage or destroy the nest of any wild bird, while that nest is in use or being built, or take or destroy an egg of any wild bird. Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young.

The Act makes it an offence intentionally to kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. Some species have lesser protection under this Act, for example white-clawed crayfish, common frog and toads are only protected from sale, and reptile species, other than smooth snake and sand lizard, are protected from intentional killing or injury, but they are not protected from disturbance and their habitat is not protected. It is also an offence intentionally to pick, uproot or destroy any wild plant listed in Schedule 8.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) dated February 2019 replaces previous Government Policy in relation to nature conservation and planning expressed in the NPPF dated March 2012.

Chapter 15 paragraph 170(d) of the NPPF 2018 says that the planning system should contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity.

Paragraphs 171 and 172 relate to policy for designated sites of biodiversity or landscape importance. Proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged against Local Plans policies which will distinguish between the hierarchy of international, national and locally designated sites and allocate land with the least environmental or amenity value and maintain and enhance networks of habitats and green infrastructure. Further policy is within paragraph 174, where Local Planning Authorities should within their Local Plans aim to protect and enhance biodiversity by:

- Identifying, mapping and safeguarding components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- Promoting the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications Local Planning Authorities should apply the following principles:

- If significant harm resulting from a development cannot be avoided (through locating it 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 encouraged, especially where this can secure measurable net gains for biodiversity.

Paragraph 176 adds protection to candidate sites of European or International importance (Special Protection Areas, Special Areas of Conservation and Ramsar sites) and also to those sites identified or required as compensatory measures for adverse effects on habitats sites, potential SPA, possible SAC listed or proposed Ramsar sites.

Paragraph 177 clarifies that the presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site (i.e. a SAC, SPA, Ramsar or candidate sites) is being planned or determined.

Government circular 'Biodiversity and Geological Conservation – Statutory Obligations and their Impact Within the Planning System' referenced ODPM 06/2005 has not been replaced and remains valid. It sets out the legislation regarding designated and undesignated sites and protected species and describes how the planning system should take account of that legislation. It does however pre-date the NERC Act 2006 (see below), which includes a level of protection for a further list of habitats and species regardless of whether they are on designated sites or elsewhere.

Natural Environment and Rural Communities (NERC) Act 2006

This Act includes a list of habitats and species of principal importance in England. Local Authorities are required to consider the needs of these habitats and species when making decisions, such as on planning application.

Local Planning Authority's planning policy

The Local Planning Authority will have policies relating to biodiversity conservation.

Species Legislation

The following table provides an overview of legislation with regard to species.

Protected Species	Legislation			
	Wildlife & Countryside Act, 1981	**The Conservation of Habitats and Species Regulations, 2017**	**Natural Environment & Rural Communities (NERC) Act, 2006**	**Protection of Badgers Act, 1992**
Plants (certain 'rare' species)	✓	✓[12]	✓	
Invertebrates (certain 'rare' species)	✓	✓[13]	✓	
White-clawed crayfish	✓		✓	
Great crested newt, Natterjack toad, pool frog	✓	✓	✓	
Other amphibians	✓[14]		✓	
Sand lizard, smooth snake	✓	✓[15]	✓	
Other reptiles	✓[16]		✓	
Breeding birds	✓	✓	✓	
Wintering birds (certain 'rare' species)	✓	✓	✓	
Bats	✓	✓	✓	
Dormouse	✓	✓	✓	
Water vole	✓		✓	
Otter	✓	✓	✓	
Badger				✓

12 Nine species present in the UK, with very specialised habitat requirements, are European Protected Species.
13 Fisher's estuarine moth, large blue butterfly and lesser whirlpool ram's-horn snail are European Protected Species.
14 The four other native amphibian species (smooth and palmate newts, common frog and common toad) are only protected against trade under this act.
15 Smooth snake and sand lizard are European Protected Species.
16 The four other native reptile species (common lizard, slow worm, grass snake and adder) are protected against intentional killing, injury and trade under this act.

Appendix 2

Assessment Methodology: Valuing Ecological Features and Impact Assessment

The three-stage assessment method for determining ecological value is based upon assessment matrices published in the Handbook of Biodiversity Methods[17]. It has been updated to comply with recent changes to planning policy and legislation. The three-stage process allows the value of ecological sites, habitats and populations, and the magnitude of the impact, to be cross-tabulated to identify impact significance.

Valuing ecological sites, habitats and populations: scale and level of value

Scale	Level of value	Sites, habitats and populations
European	**Very High**	Statutory sites designated under international conventions or related national legislation, for example: • Wetlands of International Importance (Ramsar sites), • Special Areas of Conservation, • Special Protection Areas.
National	**High**	Statutory sites designated under national legislation, for example: • Sites of Special Scientific Interest (England, Wales, Scotland), • National Nature Reserves (UK). Significant viable areas of habitats, or populations or assemblages of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)[18] of such size and quality as might qualify for SSSI designation. Populations or assemblages of red-listed, rare or legally protected species, as might qualify for SSSI designation, for example: • species of conservation concern, • Red Data Book (RDB) species, • birds of conservation concern (Red List species), • nationally rare and nationally scarce species, • legally protected species.
County	**Medium**	Statutory sites of lower conservation value designated under national legislation, for example Local Nature Reserves (UK). Non-statutory sites designated under local legislation, for example: • County Wildlife Sites, • Local Wildlife Sites, • Roadside Nature Reserves (protected road verges). Viable areas of habitat or populations of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)[19] of such size and quality as might qualify for designation at the county level. Other non-designated sites which meet the criteria for designation at this level.

17 Hill, D., Fasham, M., Tucker, G., Shewry, M., Shaw, P. (eds.) (2005) *Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring*, Cambridge University Press.

18 Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.

19 Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.

District/ Borough[20]	**Lower**	Sites meeting criteria for metropolitan designations. Undesignated sites or features not meeting criteria for county designation, but that are considered to enrich appreciably the habitat resource within the local district or borough, for example: • ancient woodland, • diverse, ecological valuable and cohesive hedgerow networks, • significant clusters or groups of ponds, • veteran or ancient trees. Viable areas of habitat or populations of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)21 not qualifying for designation at the county level.
Parish	**Lower**	Areas of habitat considered to enrich appreciably the ecological resource within the context of the local parish. Small areas of habitat or populations of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)22.
Site only	**Negligible**	Ecological feature or resource not meeting any of the above criteria.

Note: there is much overlap in designations and lists of important species, and many sites, habitats and species appear on several. Where a site, habitat or species has multiple designations or levels of protection, normally the highest level would be the level at which impacts are assessed.

20 Including metropolitan boroughs.
21 Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.
22 Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx. Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.

Definitions of impact magnitude

Magnitude (negative or positive)	Definition/trigger
Severe	Loss or severe degradation affecting over 75% of a site feature, habitat or population. Adverse change to, or reduced condition of, over 90% of a site feature, habitat or population, for example through disturbance or trampling.
Major	Loss or severe degradation affecting over 25% of a site feature, habitat or population. Adverse change to, or reduced condition of, over 50% of a site feature, habitat or population, for example through disturbance or trampling. For benefits, an impact equivalent in nature conservation terms to a gain of over 50% in a site feature, habitat or population.
Moderate	Loss or severe degradation affecting over 5% of a site feature, habitat or population. Adverse change to, or reduced condition of, over 10% of a site feature, habitat or population, for example through disturbance or trampling. For benefits, an impact equivalent in nature conservation terms to a gain of 10-50% in a site feature, habitat or population
Minor	Loss or severe degradation affecting up to 5% of a site feature, habitat or population. Adverse change to, or reduced condition of, 1-10% of a site feature, habitat or population, for example through disturbance or trampling. For benefits, an impact equivalent in nature conservation terms to a gain of up to 10% in a site feature, habitat or population.
Insignificant	No loss of or severe degradation to a site feature, habitat or population. Adverse change to, or reduced condition of, less than 1% of a site feature, habitat or population. No benefit to a site feature, habitat or population.

Impact significance

	Magnitude of impact							
Value of site, habitat or population	*Severe Negative*	*Major Negative*	*Moderate Negative*	*Minor Negative*	*Insignificant*	*Minor Positive*	*Medium Positive*	*Major Positive*
European (Very High)	Severe Adverse	Severe Adverse	Major Adverse	Major Adverse	Neutral*	Major Beneficial	Major Beneficial	Major Beneficial
National (High)	Severe Adverse	Major Adverse	Major Adverse	Moderate Adverse	Neutral*	Moderate Beneficial	Major Beneficial	Major Beneficial
County/Metropolitan (Medium)	Major Adverse	Major Adverse	Moderate Adverse	Moderate Adverse	Neutral	Minor Beneficial	Moderate Beneficial	Major Beneficial
District/Borough (Lower)	Major Adverse	Moderate Adverse	Moderate Adverse	Minor Adverse	Neutral	Minor Beneficial	Moderate Beneficial	Moderate Beneficial
Parish (Lower)	Moderate Adverse	Moderate Adverse	Minor Adverse	Minor Adverse	Neutral	Minor Beneficial	Minor Beneficial	Moderate Beneficial
Minimal/negligible	Neutral	Neutral	Neutral	Neutral	Neutral	Minor Beneficial	Minor Beneficial	Moderate Beneficial

Where the impact significance falls below Minor Adverse, the term 'Neutral' is used.

*In some circumstances, some 'insignificant' impacts might fail legislative or policy tests and the impact would be greater than Neutral.

Appendix 3

0 2 4 6 8 10 20 M

SCALE 1 / 200

Access Road to provide access and turning for Fire Fighting Appliance and Refuse Collection Vehicles.

PROPOSED SITE PLAN

GENERAL NOTES.

1.New access crossover, internal access road, public footpath extension, visibility splays, sight lines etc. to be constructed to the Local Highways Authority approval.
2.Min 2.4M x 43M visibility splays to be provided.
3.Min 2M wide Public Footpath to be provided to link with existing to East of site entrance.
4.Min 4.2M wide x 34M long internal access road / turning area to be constructed to the Local Highways Authority approval. (Min requirement to Approved Document Part B1 of the current Building Regulations for Fire Appliance access and turning 3.7M x 16.8M).
5.Internal access road to properties Plots, 2, 3 and 4 and Drives/ Parking Areas constructed with permeable paved finish.
6.Existing Hedgerow to front of property to be cut back as required to obtain the required visibility splays.
7.Refuse bin collection point to properties as shown. See plan.
8.Bin areas to properties shown
9.New tree planting shown.
10.New low ground cover/ shrub planting shown
11.Fences between properties to be 1.8M high close boarded.

DESIGN / EXTERNAL MATERIALS TO DWELLING AND GARAGES.
To be discussed with the Local Authority Planning Dept.

PROJECT
PROPOSED DEVELOPMENT TO PROVIDE 4 NO DWELLINGS WITH DOUBLE GARAGES AND INCLUDING SITE ACCESS TO LAND ADJACENT 'HEDDING FARM' AND OFF THE LANE, WYBOSTON, BEDFORD, BEDFORDSHIRE. MK44 3AS.

DRWG TITLE. PROPOSED SITE PLAN.
DRWG NO. 2017/19/01.
DATE. OCTOBER 2017.
SCALE 1/200 @ A2.

BUILDING DESIGN CONSULTANCY
Jack E Tyler, Telephone: 07968115261

Appendix 4

Search Area

Eaton Socon

Cemy

Weir

Ouse Valley Way

Castle

B1428

A428

Little End

Coll

PH

CH

Wyboston Leisure Par

Wyboston Pits CWS

Little Barford CW

Begwary Brook Pits CWS

River Great Ouse CWS

Tithe Fm

Resr

Top Fm

Moat

Wyboston

Chawston

Colesden Lodge Fm

Motel

Rectory

Tempsford Bridge

Roxton

27

34

30

25

31

28

24

26

21

18

12

Standard Key (All may not appear on this map)

- Bedfordshire boundary
- Greensand Ridge NIA
- County Wildlife Site
- District Wildlife Site
- Local Geological Site
- Local Nature Reserve
- Roadside Nature Reserve
- Site of Special Scientific Interest

Bedfordshire & Luton Biodiversity Recording & Monitoring Centre

Biodiversity Opportunity Network 2008

Authors: Bedfordshire & Luton Biodiversity Partnership

Biodiversity Network

Habitats

- Wetlands and Waterways
- Fen, Marsh & Swamp
- Acid Grassland
- Heathland
- Calcareous Grassland
- Improved Grassland
- Neutral Grassland
- Inland Rock Exposures & Quarries
- Scattered Trees
- Woodland
- Wet Woodland
- Wet Woodland (opportunities)
- Calcareous grassland (opportunities)
- Heathland / Acid Grassland (opportunities)

N

0 1 kilometres

Bedfordshire & Luton
Biodiversity Recording & Monitoring Centre

Search Area

Cobholden Farm

Honeydon Brook

Lower Honeydon Farm

A1

B1428

Eaton Socon

Nelson Road

Great North Road

Tythe Farm

Staploe Road

Farm

The Bungalow
Wyboston
Lakes

The Oakley Suite

The Lane

Begwary Brook

Wyboston

Chawston

Glebe

Aubretia Cottage

Chawston Lane

Colesden Road

South Brook

Badgers Set

Roxton Road

The Barns

Colesden Lodge Farm

Bedford Road

The Bungalow

Green Acres

Rectory Farm

Park Road

Roxton

0

2

kilometres

Wood Pasture and Parkland
Ancient Woodland
Woodland
Beech and Yew Woodland
Wet Woodland
Water
Reedbed
Fen
Floodplain Grazing Marsh
Wet Meadow
Traditional Orchards
Heathland
Acid Grassland
Chalk Grassland
Meadow
Long-term Neutral Grassland (Beds Borough)
Grassland on Aerial photos (Central Beds)

Habitats

Indicative only

N

Bedfordshire & Luton
Biodiversity
Recording &
Monitoring
Centre

Site name: **Begwary Brook Pits CWS**

Status(es): County Wildlife Site
Wildlife Trust Nature Reserve (subsite of the CWS)

Gridref: TL168563

Area: 15.80 hectares

Council(s): Bedford Borough
Central Bedfordshire

History:
1990 CWS recognized

CWS recognized for: Mosaic of freshwater and wetland habitats

Main habitats present:
UK BAP Priority: Fen, Marsh and Swamp (Broad habitat)
Rivers & Streams (Broad Habitat)
Standing Open Water and Canals (Broad habitat)

Other habitat(s): Neutral grassland
Wet woodland
Scrub
Ruderal vegetation

Site Description:

Phase 1 Survey 1990
A County Wildlife Site containing a diversity of habitats including swamp, marsh and water bodies. The site comprises a small area of swamp vegetation at TL166563; a flooded pit at TL167563 and a small block of broadleaved plantation adjacent to the west; a flooded pit at TL168561 and neutral grassland adjacent to the east; an area of swamp vegetation at TL169563 and surrounding ruderal vegetation; a riverside belt of dense scrub extending from TL168564 northwest to TL167565 and a very small area of neutral grassland adjacent to the southwest; the River Great Ouse forms the eastern and northern boundaries of the County Wildlife Site. Part of the CWS is a Wildlife Trust nature reserve.

The pits were created in the 1960s following gravel extraction.

CWS Survey 1997
In January 1997 the northern lake, at TL167563 within the Wildlife Trust nature reserve, covers approximately 1.4ha and contains long ridges of spoil, now covered in willows and scrub. Willows and scrub (mainly hawthorn) surround the lake with patches of swamp vegetation in some of the margins, dominated by reedmace but with such species as great willowherb and purple loosestrife also present. A small broadleaved plantation of birch, oak and alder is present next to the carpark in the northwest of the site, with a dense belt of mature willows and scrub along the River Great Ouse in the north. To the east of the northern lake is an area of marsh and ruderal vegetation crossed by a wet ditch lined with willows and scattered scrub. The marsh vegetation is dominated by pond-sedge sp., with other areas dominated by great willowherb. A number of small ponds which are being invaded by reedmace and other wetland vegetation are present in this area. At TL166563 on the western edge of the site is another small area of swamp vegetation with a few old pollard willows growing on the boundary. The marshland within the nature reserve covers approximately 2ha. The large, private pit to the south, at TL168561, covers approximately 3.6ha, contains some islands and is more open with only scattered willows. A large area of MG1 Arrhenatherum grassland and ruderal vegetation, with small, scattered scrub, is present to the east. The pits are in a floodplain and fed by the water table. The River Great Ouse, which frequently floods in winter, forms the northern and eastern boundaries of the site. The river is unshaded along most of its length. The southern pit of the Wyboston Lakes CWS is about 200m to the north, with other larger pits further north. There is cattle-grazed pasture on the east side of the river.

In February 1997 the northern half of the site is leased to the county Wildlife Trust as a nature reserve. The southern pit is used by an angling club. Willows have been cleared from the northern pit to reduce shading and parts of the marsh have been cut, with the cut material raked into heaps. There is no

obvious pollution or eutrophication of either pit. The pits were ice-covered and not surveyed for aquatic species, but the wet ditch contains water starwort and duckweed. No nationally or locally rare or scarce species were recorded. A range of aquatic birds have been recorded in the past including kingfisher, great crested grebe, mallard, heron, tufted duck, mute swan and moorhen. Summer migrants recorded include reed, sedge and willow warblers, and common tern. Winter visitors include redwing, fieldfare, water rail and snipe.

CWS Monitoring July-Aug 2006 - Marsh

The marsh is sandwiched between the pits to the west and the River Great Ouse to the east. It is surrounded by a raised bank on the north and east. The dominant vegetation on the bank is Nettle (*Urtica dioica)* with Hedge bindweed (*Calstegia sepium)*. Hemlock (*Conium maculatum)* is locally frequent.

The vegetation most closely resembles an S25 *Phragmites australis-Eupatorium cannabinum* tall herb fen community.

There are occasional patches of White willow (*Salix alba)* that have been coppiced in the past. The dominant vegetation under the willows is Nettle.

Much of the northern section of the meadow is dominated by Hemp agrimony (*Eupatorium cannabinum)*. The following species are all classified as occasional: Comfrey (*Symphytum x uplandicum),* Angelica (*Angelica sylvestris)*, Great willow herb, Reed sweet grass (*Glyceria maxima),* Goosegrass (*Galium aparine)*, Burdock (*Arctium* sp.). Pond sedge (*Care*x sp) was frequent and Himalayan Balsam (*Impatiens glandulifera*) is locally frequent.

The pond at TL169564 is fringed by Lesser pond sedge and Purple loosestrife, Himalayan balsam and Bramble which is abundant. Bittersweet (*Solanum dulcamara*) is frequent. The following species were occasional: *Typha latifolia*, Hemp agrimony, Marsh woundwort *(Stachys palustris*) and Amphibious water bistort (*Persicaria amphibia).* The pond surface is covered with duck weed (*Lemna minor*) and no submerged vegetation was found.

The second pond is fringed with Reed sweet grass and Hemp agrimony which are abundant. Purple loosestrife is occasional.

The southern section of the Wildlife's Trust Nature Reserve is distinctly drier with areas of grassland with cocksfoot (*Dactylis glomerata)*, Couch grass (*Elytrigia repens),* False oat grass (*Arrhenatherum elatius),*Red fescue *(Fetuca rubra*), Rye grass (*Lolium perenne*) and Creeping Bent (*Agrostis stolonifera*). Herb Robert (*Geranium robertianum*), Ground ivy (*Glechoma hederacea)*, Creeping cinquefoil (*Potentilla reptans*), Hedge parsely (*Torilis japonica*) and Self heal (*Prunella vulgaris)* are all present.

Common fleabane (*Pulicaria dysenterica*), Water mint (*Mentha aquatica*)and Lesser pond sedge were locally frequent and there were several plants of Rosa sp and Hawthorn. Hemp agrimony continues to be abundant and in areas Fleabane and Black knapweed are dominant. Tufted hair grass (*Deschampsia cespitosa*), Hard rush (*Juncus inflexus*), Wood small reed (*Calamagrostis epigejos*), Silverweed (*Potentilla anserina*), Ragwort (*Sencio jacobaea),*, Meadow sweet, Black medick (*Medicago lupulina*) and Ground elder (*Aegopodium podagraria)* were all occasional.

The ditch in the meadow was dry and dominated by Reed sweet grass and Lesser pond sedge.

CWS Monitoring July-Aug 2006 – Northern Woodland

The woodland to the north of the site is composed almost entirely of White willow (*Salix alba*) with the occasional tall Hawthorn (*Cretaegus monogyna*) and Ash (*Fraxinus excelsior*). The occasional Grey willow (*Salix cinerea*) and Rose (*Rosa* sp.) are present in the understory. The ground flora is dominated by Bramble (*Rubus fruticosus)*, Creeping thistle (*Cirsium vulgare*) and Nettle (*Urtica dioica*) with patches of Lesser pond sedge (*Carex acutiformis*) and Hogweed (*Heracleum sphondylium)*. There are occasional patches of Common reed (*Phragmites australis)*. Purple loostrife (*Lythrum salicaria)* and Great willow herb (*Epilobium hirsutum)* were also recorded. The water body in the wood was dry and dominated by Lesser pond sedge with the occasional Yellow iris (*Iris pseudacorus)*.

CWS Survey July 2012

A County Wildlife Site (CWS) containing a diversity of habitats including marsh, neutral grassland, ponds, lakes, ditches and woodland. The River Great Ouse forms the eastern and northern boundaries of the County Wildlife Site. Part of the CWS is a Wildlife Trust Nature Reserve and the other part is privately managed and leased to an angling club.

CWS inside Wildlife Trust Nature Reserve:

Marsh
The marsh is sandwiched between the lake to the west and the River Great Ouse to the east at the northern end of the Wildlife Trust Nature Reserve. It is surrounded by a raised bank on the north and east side. The dominant vegetation on the bank is common nettle (*Urtica dioica*) and hedge bindweed (*Calystegia sepium*) with locally frequent hemlock (*Conium maculatum*).

The vegetation in this area most closely resembles S25 common reed-hemp agrimony (Phragmites australis-Eupatorium cannabinum) tall herb fen with locally abundant patches of hemp agrimony and common comfrey (*Symphytum officinale*) with locally occasional patches of amphibious water bistort (*Persicaria amphibia*), marsh woundwort (*Stachys palustris*) and dewberry (*Rubus caesius*). Great pond sedge (*Carex riparia*) is abundant with common nettle, bittersweet (*Solanum dulcamara*), creeping thistle (*Cirsium vulgare*) and meadowsweet (*Filipendula ulmaria*) occasional and rare occurrences of purple loosestrife (*Lythrum salicaria*), great willowherb (*Epilobium hirsutum*), burdock (*Arctium sp*.), cleavers (*Galium aparine*) and wild angelica (*Angelica sylvestris*). There are locally occasional patches of Himalayan balsam (*Impatiens glandulifera*), which is as invasive species. This species will spread to dominate this area, if left unmanaged.

There are occasional patches of white willow (Salix alba) in this area that have been coppiced in the past. The dominant vegetation under the willows is common nettle.

Neutral grassland
The southern section of the Wildlife's Trust Nature Reserve is distinctly drier than the marshy area to the north. This grassland contains false oat grass (*Arrhenatherum elatius*), red fescue (*Festuca rubra*), cock's foot (*Dactylis glomerata*), perennial rye grass (*Lolium perenne*), couch grass (*Elytrigia repens*) and creeping bent (*Agrostis stolonifera*). Hedge parsley (*Torilis japonica*), herb robert (*Geranium robertianum*), ground ivy (*Glechoma hederacea*), common comfrey, creeping cinquefoil (*Potentilla reptans*), common nettle and self-heal (*Prunella vulgaris*) are all present with locally frequent populations of meadow vetchling (*Lathyrus pratensis*) and common knapweed (*Centaurea nigra*). Of interest, was a small population of great burnet (*Sanguisorba officinalis*). This habitat grades towards MG1 false oat grass (*Arrhenatherum elatius*) community.

Some areas within the neutral grassland have closer affinities with a marsh community with species characteristic of wetter soils, such as common fleabane (*Pulicaria dysenterica*), hemp agrimony, water mint (*Mentha aquatica*), reed sweet grass (*Glyceria maxima*), common comfrey, yellow flag iris (*Iris pseudacorus*), wild angelica, meadowsweet and pond sedge. These areas grade towards S25 common reed-hemp agrimony (Phragmites australis-Eupatorium cannabinum) tall herb fen. A small population of dodder (*Cuscuta epithymum*) was found during the 2006 survey but not during this survey.

The grassland in the south-east corner of the Wildlife Trust Nature Reserve, just south of the circular footpath, is dominated by tufted hair grass with occasional hedge bindweed, common comfrey, creeping thistle, meadowsweet, common nettle, hemlock, marsh woundwort, wild angelica, water mint, silverweed (*Potentilla anserina*), wood small reed (*Calamagrostis epigejos*) and meadow foxtail (*Alopecurus pratensis*). This community grades to a MG9 yorkshire fog-tufted hair grass (Holcus lanatus-Deschampsia cespitosa).

Lake
The north-western lake, which contains numerous rectangular islands between the water are covered in willow and scrub. The lake is also surrounded by the same species. The lake surface is covered in duckweed (*Lemna minor*) and no submerged vegetation was noted. Patches of swamp vegetation were seen around the lake margin and around the edges of the islands within the lake. Species present include water figwort (*Scrophularia auriculata*), common reed, yellow flag iris, wild angelica, hemp agrimony and meadowsweet.

Ponds
The ponds around TL169564 are fringed by bittersweet, common comfrey, great willowherb, pond sedge, purple loosestrife, Himalayan balsam and bramble, which are abundant. Common comfrey and

great willowherb appear to have increased in extent since the last survey in 2006. The following species were occasional: bullrush (*Typha latifolia*), common reed (*Phragmites australis*), hemp agrimony, marsh woundwort and amphibious water bistort. Young willow saplings are developing around the edge of the pond. The pond surface is covered with duckweed and no submerged vegetation was found.

Ditch
The ditch in the meadow contained standing water and the surface was dominated by fat duckweed (*Lemna gibba*).

Woodland
There is a small broadleaved woodland area to the east of the car park (see map). This is composed primarily of pendunculate oak (*Quercus robur*), silver birch (*Betula pendula*), sycamore (*Acer pseudoplatanus*), field maple (*Acer campestre*), alder (*Alnus glutinosa*) and hawthorn (*Cretaegus monogyna*).

CWS outside Wildlife Trust Nature Reserve:

Most of the CWS outside the Wildlife Trust Nature Reserve is privately managed and leased to an angling club. This is composed of a lake (ex-gravel pit) with a marsh to the east, which lies west of the River Great Ouse.

Lake
The privately managed lake is larger and more open than the smaller lake in the Nature Reserve. This lake contains a few islands covered in willow but not the numerous rectangular islands observed in the northern lake. Like the northern lake, this lake is surrounded by willows. Under the willows around the edge of the lake, the vegetation is composed of hemp agrimony, meadowsweet, common figwort (*Scrophularia nodos*), gypsywort, water mint, hard rush (*Juncus inflexus*), wild angelica, bulrush, yellow flag iris, pond sedge and bramble (*Rubus fruticosus*). Small amount of alder and hawthorn are present in the under-storey. The lake is largely open with only small amounts of floating plants, mainly white and yellow water-lily (*Nymphaea alba* and *Nuphar lutea*).

Marsh
The marsh to the east of the lake is composed of abundant pond sedge with occasional tufted hair grass, reed sweet grass and creeping thistle with rare occurrences of ground ivy, hemlock, amphibious water bistort, water mint, purple loosestrife, great willowherb, meadow vetchling and hedge bindweed. A number of ruderal species are present in the swards including occasional Russian comfrey (*Symphytum officinale x asperum = S. x uplandicum*) and teasel (*Dipsacus fullonum*). Small and scattered patches of scrub are present, mainly composed of hawthorn with some willow.

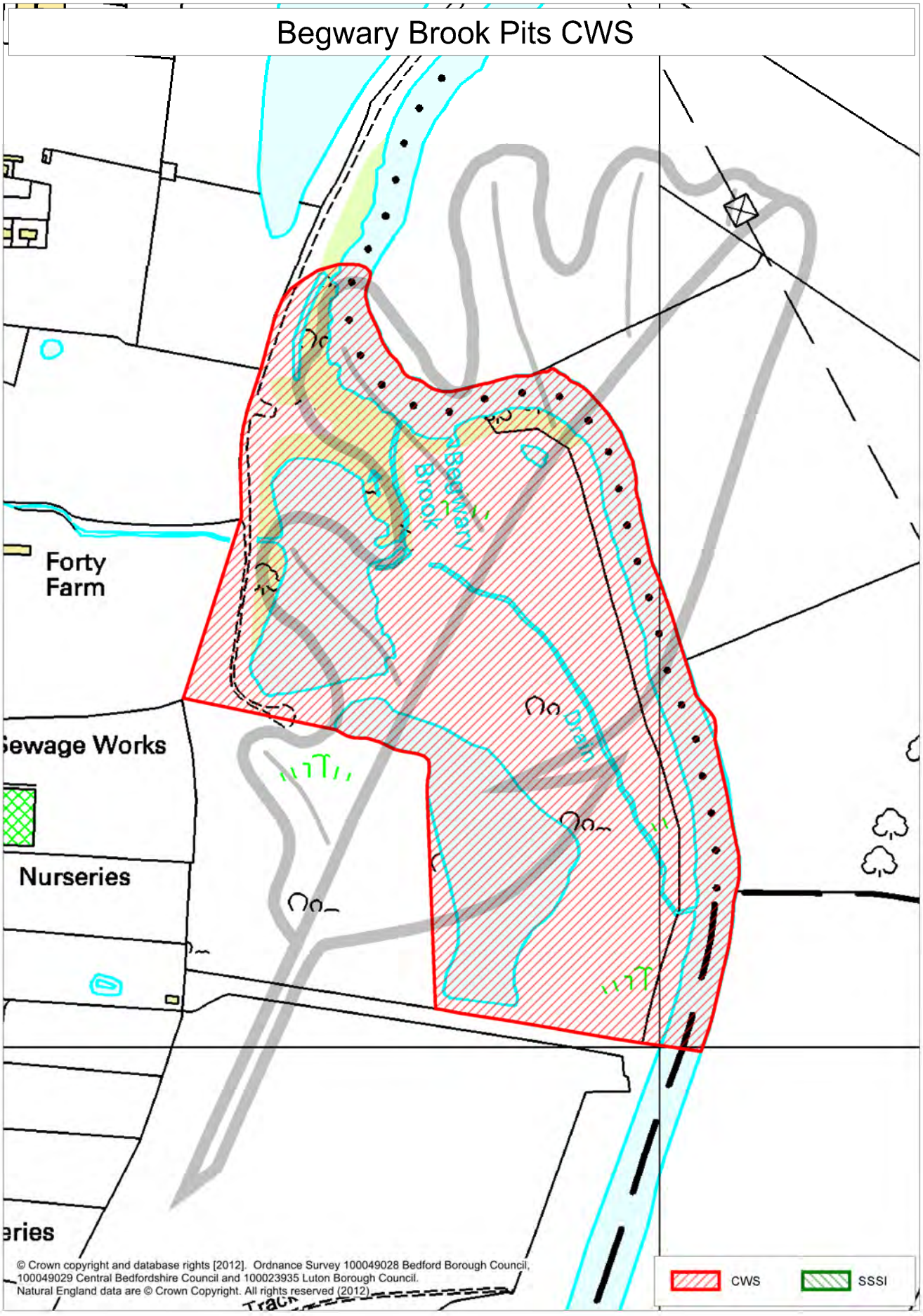
Woodland
The narrow belt of woodland to the far north of the site, which is just outside the Wildlife Trust's Nature Reserve boundary, is composed almost entirely of white willow with the occasional ash (*Fraxinus excelsior*) and tall hawthorn. Elder (*Sambucus nigra*), grey willow (*Salix cinerea*) and rose (*Rosa sp.)* are occasional in the understory. The ground flora is dominated by bramble, garlic mustard (*Alliaria petiolata*) ground ivy, creeping thistle, common nettle and hogweed (*Heracleum sphondylium*). There are occasional patches of common reed, purple loosestrife and great willowherb in the ground layer and dense stands of pond sedge by the river.

Fauna
Numerous damselflies and dragonflies were seen during this survey. Of those seen, these included numerous male and female banded demoiselle (*Calopteryx splendens*) and common blue (*Enallagma cyathigerum*) damselflies.

Butterflies seen were ringlet (*Aphantopus hyperantus*), red admiral (*Vanessa atalanta*) and comma (*Polygonia c-album*).

Of the birds heard and/or seen during this survey, these included garden warbler (*Sylvia borin*), chiff chaff (*Phylloscopus collybita*), wood pigeon (*Columba palumbus*), numerous mallards (*Anas platyrhynchos*) and coots (*Fulica atra*). A mute swan was seen nesting on site on one of the lake islands in the Nature Reserve.

A muntjac deer (*Muntiacus reevesi*) was briefly seen during the survey.


Begwary Brook Pits CWS
Forty Farm
Begwary Brook
Drain
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CWS
SSSI

Site name: **River Great Ouse CWS**

Status(es): County Wildlife Site
Site of Special Scientific Interest (section at Stevington)

Gridref: SP95

Area: 208.99 hectares

Council(s): Bedford Borough
Central Bedfordshire

History:
1990 CWS recognized

CWS recognized for: River
Adjacent habitats and features which are considered part of the river system

Main habitats present:
UK BAP Priority River
(Potentially: fen, marsh and swamp (Broad habitat); flooplain grazing marsh; wet woodland)

Other habitat(s) Potentially neutral grassland, scrub, mature trees and pollards, copses and plantations and ruderal vegetation

Site Description:

Phase 1 Survey 1990
A County Wildlife Site comprising: the River Great Ouse within Bedfordshire. Part of the river lies within Stevington Marsh SSSI.

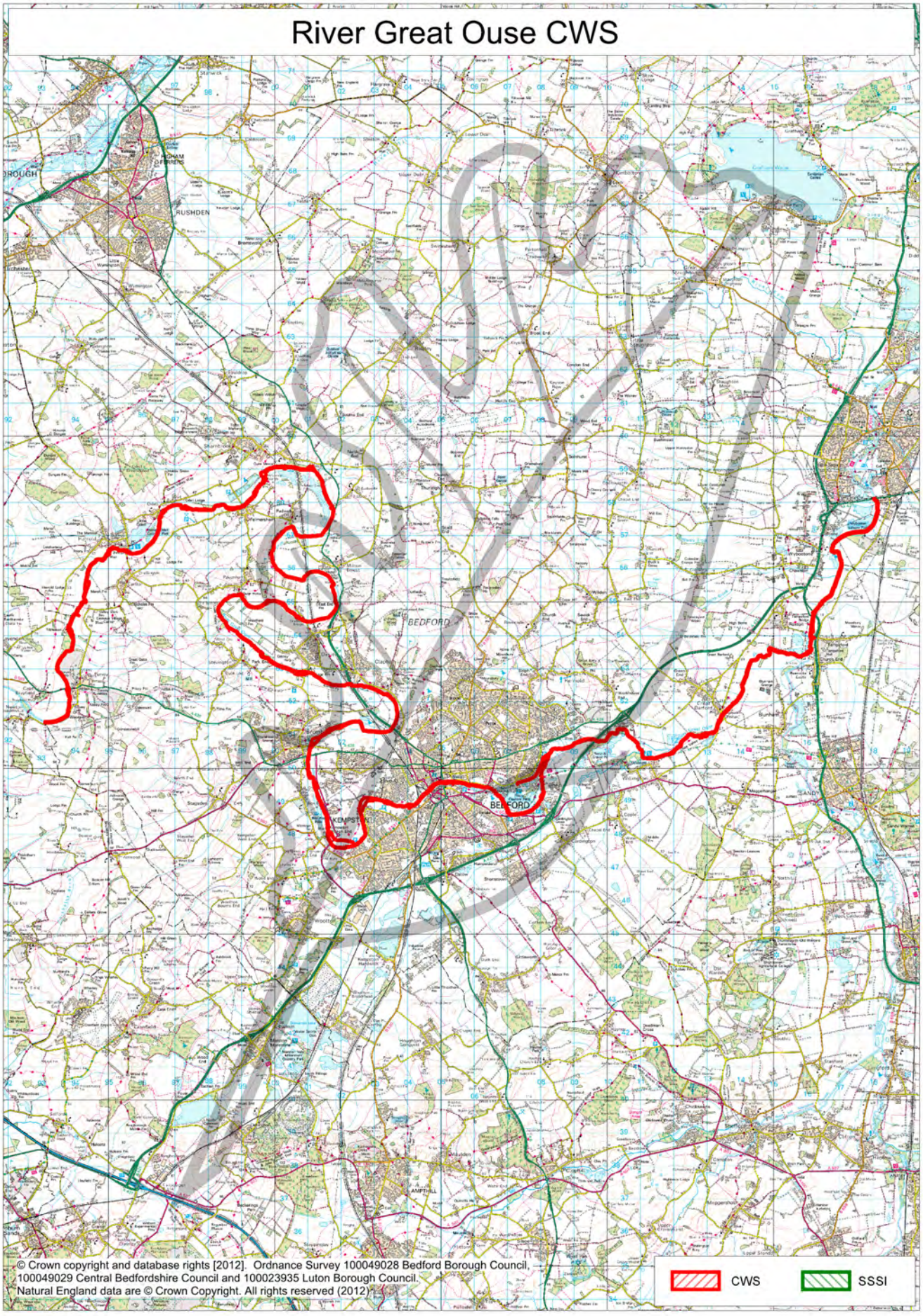
For details of the SSSI contact Natural England.

Boundary clarifications 2006/2007
Following a survey of specific features along the river west of Bedford, the following were confirmed to be within the County Wildlife Site:

- At SP937523 the island and river channels to either side. The mill leat is not included.
- At SP943555 Millholme island and the river channels to either side.
- At SP973578 the inlet to the north of the main channel and the side channel to the south.
- At SP997550 Dick's island and the river channels to either side.
- The channel through TL02004783 and the one through TL02004760, but the large intervening island was not included in the CWS.
- The back-channel and surrounding grasslands from TL02574868 to TL02984907.
- At TL033489 the islands and surrounding channels.

(The island and its western channel at SP937519 were already included within Mill Rise, Turvey CWS).

Note: Not all of the individual features along the course of the river, such as islands, inlets and back-channels have been reviewed for inclusion within the County Wildlife Site. The precise boundary of the CWS is therefore not fully determined and advice should be sought when necessary


River Great Ouse CWS
RUSHDEN
BEDFORD
BEDFORD
KEMPSTON
AMPTHILL
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CWS
SSSI

Site name: **Wyboston Pits CWS**

Status(es): County Wildlife Site

Gridref: TL178575

Area: 104.18 hectares

Council(s): Bedford Borough

History:
1990 CWS recognized

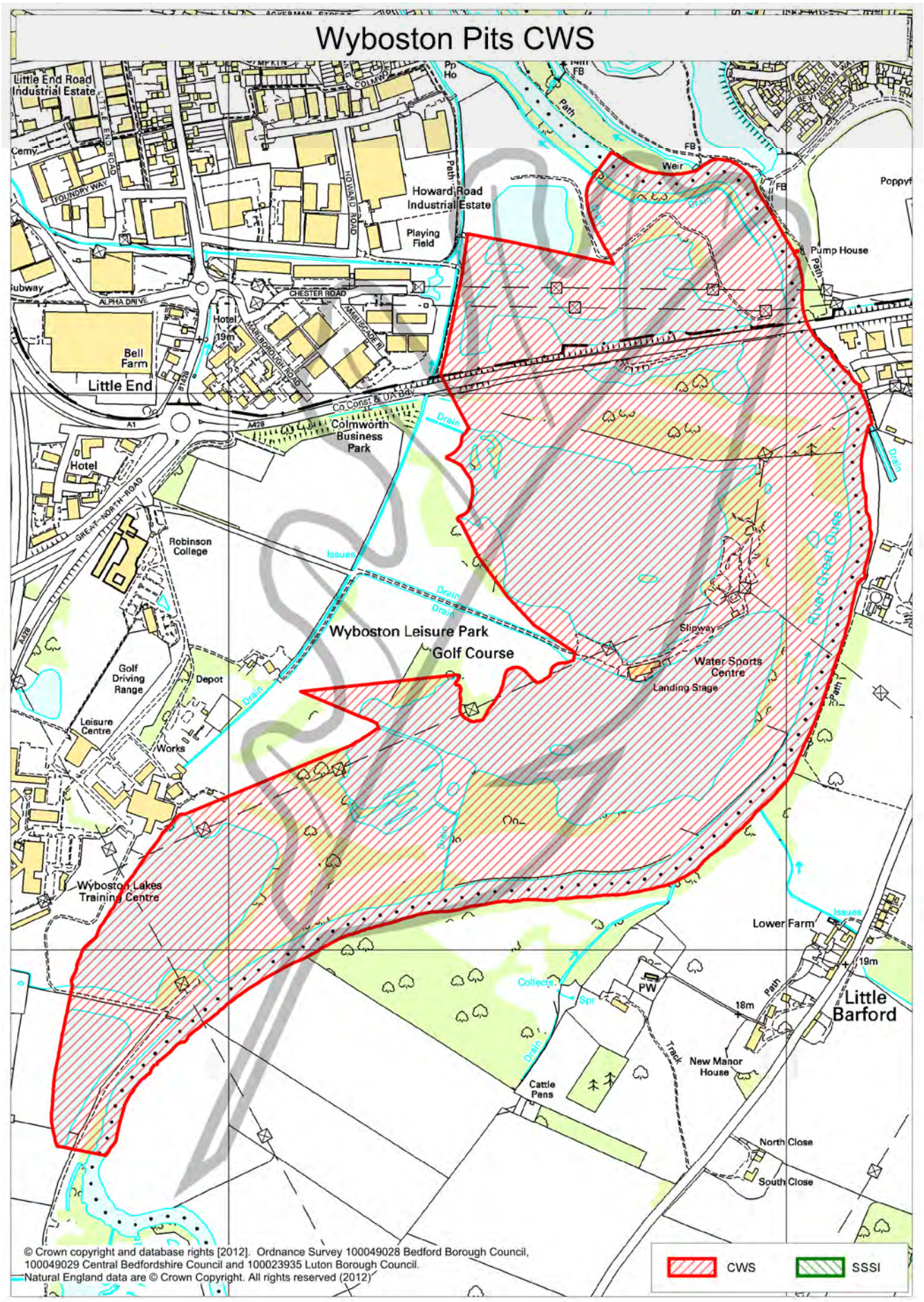
CWS recognized for: Water bodies

Main habitats present:
UK BAP Priority: Standing Open Water and Canals (Broad Habitat)
Broadleaved, Mixed and Yew Woodland (Broad Habitat)
Neutral Grassland (Broad Habitat)

Other habitat(s): Marshy grassland

Site Description:

Phase 1 Survey 1990
A CWS containing a number of water bodies. The CWS comprises a series of flooded disused gravel pits surrounded largely by amenity grassland with scattered trees and shrubs but with smaller areas of neutral and marshy grasslands and broadleaved plantation. The northernmost pits are surrounded mainly by neutral grassland and ruderal vegetation. The River Great Ouse forms the eastern boundary of the CWS.


Wyboston Pits CWS
Little End Road Industrial Estate
Howard Road Industrial Estate
Playing Field
Pump House
Weir
Bell Farm
Little End
Colmworth Business Park
Hotel
Robinson College
Wyboston Leisure Park
Golf Course
Golf Driving Range
Depot
Leisure Centre
Works
Water Sports Centre
Landing Stage
Slipway
River Great Ouse
Wyboston Lakes Training Centre
Lower Farm
Little Barford
New Manor House
Cattle Pens
North Close
South Close
CHESTER ROAD
ALPHA DRIVE
FOUNDRY WAY
HOWARD ROAD
MARLBOROUGH ROAD
AMBLESCADE RI
GREAT NORTH ROAD
A1
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CWS
SSSI