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LONGFORD PARK, BANKSIDE
BANBURY

Ecological Assessment
(Spine Road Application)

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1. INTRODUCTION

1.1. Background & Proposals

- 1.1.1. A planning application was originally submitted to Cherwell District Council (Ref: 05/01337/OUT) in July 2005 for the development of a large area of land to the east of Bankside, Banbury (see Plan 3266/ECO1) to provide new residential homes and associated facilities including a school and playing fields. The application was supported by an Environmental Statement (ES), which included an Ecological Impact Assessment (EclA).
- 1.1.2. Outline planning permission for the above development was granted by Cherwell District Council in September 2009.
- 1.1.3. Aspect Ecology was subsequently commissioned by Barratt Homes, Bovis Homes and Taylor Wimpey in June 2013 to undertake an ecological assessment in respect of a number of fields that incorporate the proposed locations of spine roads and drain runs to service the consented development. This area is centred at grid reference SP 467 385 and is hereafter referred to as 'the site'.

1.2. Site Characteristics

- 1.2.1. The site is situated in a semi-rural context, and is bound primarily by arable fields (see Plan 3266/ECO3).
- 1.2.2. The site itself comprises a number of sections of agricultural fields, hedgerows, trees, streams and/or ditches.

1.3. Ecological Assessment

- 1.3.1. This document assesses the ecological interest of the site as a whole. The importance of the habitats and species present is evaluated, and any potential impact assessed. Where necessary, mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site.

2. SURVEY AND EVALUATION METHODOLOGY

2.1. The methodology utilised for the survey work can be split into 3 main areas: a desktop study, habitat survey, and faunal survey. These are discussed in more detail below.

2.2. Desktop Study

2.2.1. Information on statutory designated sites was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England, and Natural England's online resource, 'Nature on the Map'. This information is reproduced at Appendix 1, and where appropriate on Plan 3266/ECO2.

2.2.2. The National Biodiversity Network (NBN) database was also searched for any relevant biological records of nature conservation interest within the locality, however the detailed results are not referenced in this report due to data protection.

2.3. Habitat Survey

2.3.1. The site was surveyed in June 2013 in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats associated with the site.

2.3.2. The site was surveyed based on extended Phase 1 survey methodology (Joint Nature Conservation Committee, 2010), as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

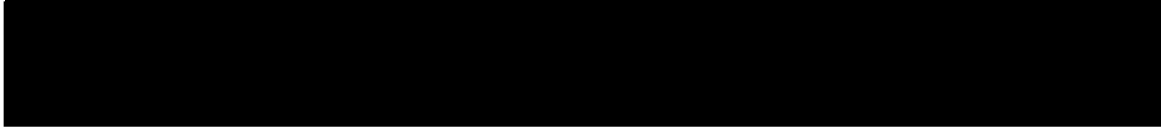
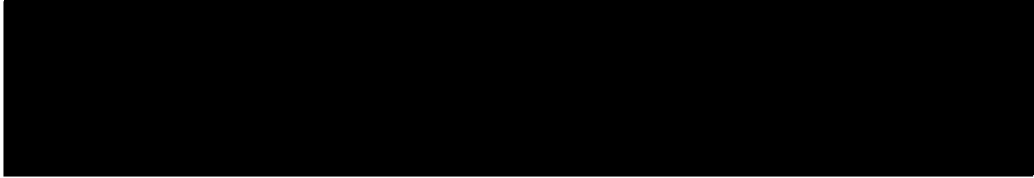
2.3.4. All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. Nonetheless, the survey work was undertaken within the optimal period for botanical work, and therefore it is considered that a robust survey and assessment of the habitats present was undertaken.

2.4. Faunal Surveys

2.4.1. General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species, and specific survey work was undertaken for bats and Badger.

Bats¹

- 2.4.2. **Buildings.** All buildings within the site are to be lost to the proposal, and were therefore subject to internal and external inspection surveys using ladders, torches, mirrors and binoculars where necessary to check for potential bat use.
- 2.4.3. Evidence of the presence of bats was searched for with particular attention paid to any loft voids and gaps between rafters and beams. Specific searches were made for bat droppings that can indicate present or past use and the extent of use, whilst other signs that can indicate the possible presence of bats were also searched for, e.g. presence of stained areas or feeding remains.
- 2.4.4. Exterior checks of the building were also undertaken in order to search for signs of any use by bats. Binoculars were used to inspect any inaccessible areas more closely.
- 2.4.5. **Trees.** An examination of the trees within the site was undertaken in June 2013 to search for the presence of features which could be of potential value for bats such as splits, cracks, rot holes, coverings of Ivy, peeling bark or similar. The potential for the trees to support roosting bats will be ranked in accordance with the criteria set out in the publication entitled 'Bat Surveys - Good Practice Guidelines,' by the Bat Conservation Trust (BCT) (2007)²:
- Category 1: Confirmed bat roost tree with field evidence of the presence of bats, e.g. droppings, scratch marks, grease marks or urine staining.
 - Category 2a: Trees that have a high potential to support roosting bats.
 - Category 2b: Trees with a moderate/low potential to support roosting bats.
 - Category 3: Trees with negligible potential to support bat roosts.
- 2.4.6. Where appropriate, a schedule is then produced documenting the presence of any such features.



2.5. Principles of Ecological Evaluation

2.5.1. The evaluation of ecological features and resources should be based on sound professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described in 'Guidelines for Ecological Impact Assessment in the United Kingdom' published by the Institute of Ecology and Environmental Management (IEEM), 2006. In evaluating ecological features and resources the following key factors are taken into account:

Geographic Frame of Reference

2.5.2. The value of an ecological feature or resource is determined within a defined geographical context using the following frame of reference:

- International
- National
- Regional
- County (or Metropolitan)
- District (or Unitary Authority, City or Borough)
- Local (or Parish)
- At the Site level only

2.5.3. Within this frame of reference, certain sites may carry a statutory ecological designation, e.g. Special Area of Conservation (SAC) for internationally important sites or Site of Special Scientific Interest (SSSI) for sites of national importance.

2.5.4. Sites of more localised nature conservation importance do not receive statutory protection but may be designated by Local Planning Authorities or other bodies, e.g. Wildlife Trusts. Such non-statutory designations or "Local Sites"⁴ include County Wildlife Sites (CWSs) and Sites of Nature Conservation Interest (SNCIs), for example.

Biodiversity Value

Habitats

2.5.5. In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, "Guidelines for the selection of biological SSSIs" and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors

⁴ DEFRA (2006) "Local Sites – Guidance on their Identification, Selection and Management"

such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create the habitat can also be an important consideration, for example in the case of ancient woodland.

- 2.5.6. Regard should also be given to habitats listed as priorities for conservation in accordance with Section 41 of the NERC Act, 2006, so called "Priority Habitats", as the likely effect of a development on such habitats is a potential material consideration within the planning process. Certain habitats may also be listed within more regionally or locally specific BAPs, albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.

Species

- 2.5.7. The assessment of the value of a species is based on factors including distribution, status, historical trends, population size and rarity. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.
- 2.5.8. For certain species groups, e.g. waterfowl, there are established criteria that can be used for defining nationally and internationally important populations.
- 2.5.9. Regard should also be given to species listed as priorities for conservation in accordance with Section 41 of the NERC Act 2006, so called "Priority Species". Certain species may also be listed within more regionally or locally specific BAPs, albeit as with habitats the listing of a particular species under a BAP does not in itself imply any specific level of importance.

Secondary or Supporting Value

- 2.5.10. Some habitats or features that are of no intrinsic biodiversity value may nonetheless perform an ecological function, e.g. as a buffer. In addition, certain features of the landscape which by virtue of their linear or continuous nature (e.g. rivers) or their function as "stepping stones" (e.g. small woods) may be of value for the migration, dispersal and genetic exchange of wild species.

Other Value

- 2.5.11. Other tertiary factors may also be relevant in evaluating the value of a particular ecological receptor including social and economic factors.

2.6. The Five Point Approach

- 2.6.1. The National Planning Policy Framework (NPPF)⁵ describes the Government's national policies on the protection of biodiversity [and geological] conservation through the planning system. NPPF emphasises the need for planning authorities to ensure that the potential effects of planning decisions on biodiversity conservation are fully considered. A five-

⁵ Department for Communities and Local Government (2012) "National Planning Policy Framework"

point best practice approach^{6,7,8} to the assessment of such effects within the development control process is recommended:

1. **Information** – gathering a sufficient evidence base on which to make sound planning decisions
2. **Avoidance** – adverse effects on habitats and species should be avoided where possible
3. **Mitigation** – where it is unavoidable, mitigation measures should be employed to minimise adverse effects
4. **Compensation** – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm
5. **New benefits** – many planning decisions present the opportunity to deliver enhancements for habitats or species

2.6.2. The assessment of ecological effects set out within this report are based on the above five-point approach, where appropriate.

2.7. Survey Constraints/Limitations

2.7.1. There were no constraints to the survey of the site.

⁶ Royal Town Planning Institute (1999) "*Planning for Biodiversity – Good Practice Guide*"

⁷ ODPM (2006) "*Planning for Biodiversity and Geological Conservation – A Guide to Good Practice*"

⁸ PAS 2010 "*Planning to Halt the Loss of Biodiversity, Biodiversity Conservation Standards for Planning in the United Kingdom – Code of Practice.*"

3. ECOLOGICAL DESIGNATIONS

3.1. Statutory Designations

3.1.1. The statutory designations of nature conservation interest that occur within the local area are shown on Plan 3266/ECO2, and summarised below in Table 1. The nearest statutory nature conservation designation is Adderbury Lakes Local Nature Reserve (LNR), located approximately 2.4km to the south-east of the site. The next nearest statutory nature conservation designation is Farthinghoe LNR, located approximately 4.6km to the north-east of the site.

3.1.2. All statutory designations in the local area are well separated from the site by existing development and farmland, and will not therefore be affected by the proposals.

3.2. Non-statutory Designations

3.2.1. No non-statutory designations of nature conservation interest that occur in Oxfordshire are present within 5km of the site. No information was obtained regarding non-statutory sites in Northamptonshire, however the boundary with Northamptonshire lies along the M40 corridor to the east of the site. Therefore, any non-statutory designations that do occur within the area of Northamptonshire within the vicinity of the site are separated from the site by the M40.

3.2.2. All non-statutory designations in the local area are therefore well separated from the site, and will not be affected by the proposals.

Table 1: Statutory and Non-Statutory Designations situated within the local vicinity

Name	Designation	Brief Description	Approximate Distance & Direction
Statutory Designations			
Adderbury Lakes	LNR	Two interlinked lakes with small areas of botanically rich surrounding woodland, supporting a wider diversity of birds, mammals and invertebrates.	2.4km SE
Neithrop Fields Cutting	SSSI	Designated for geological reasons	3.8km NW
Farthinghoe	LNR	A former landfill site now supporting a mosaic of botanically rich habitats including grassland, developing woodland and ponds.	4.6km NE
Non-statutory Designations			
		No non-statutory ecological designations located within 5km of the site in Oxfordshire. Northamptonshire data not available.	

3.3. Summary

3.3.1. The site itself is not subject to any statutory or non-statutory nature conservation designation. All such designations in the local area are well separated from the site and will not therefore be affected by the proposals.

4. HABITATS, ECOLOGICAL FEATURES AND EVALUATION

4.1. The following main habitats/ features were identified at the site:

- Buildings / Structures
- Arable
- Grassland
- Hedgerows
- Trees and Scrub
- Woodland
- Ditches
- Pond
- Canal

4.2. The locations of these habitat types and features are represented on Plan 3266/ECO3, and the composition and structure of each habitat is summarised below, with an account of the representative plant species present where appropriate. In addition, the habitats are evaluated in terms of ecological value and any potential effects arising from the proposals assessed.

4.3. Buildings / Structures

Description of the Habitat

4.3.1. A single stable block with an off-centre pitched roof constructed entirely from wooden boarding with a concrete base is present within field F5. No enclosed roof space was present within this structure.

Evaluation

4.3.2. The stable block is considered to be of negligible inherent ecological value, and supports limited, if any, vegetation. Therefore any losses of these habitats to the proposals are of negligible ecological significance.

4.4. Arable

Description of the Habitat

4.4.1. Eight arable fields with rough grassland field margins (described in section 4.4) are enclosed, in part, within the site boundary (labelled **F1, F2, F4, F10, F11, F12, F13** and **F14**).

4.4.2. Fields **F1** and **F2** are partially located within the north of the site (see Plan 3266/ECO3). At the time of survey, field **F1** had recently been ploughed, and consequentially exhibited very little in the way of colonising vegetation. The majority of **F2** had also recently been ploughed, however a small section of this field in the north-eastern corner of the site had a sparse crop of Oilseed Rape *Brassica napus* (see Photograph 1).

4.4.3. Opportunistic native species that have sparsely colonised within the centre of these fields are limited to the occasional specimen of Spear Thistle *Cirsium vulgare*, Creeping Thistle *Cirsium arvense*, Horsetail *Equisetum* sp.,

Redshank *Tringa totanus*, Willowherb *Epilobium* sp. and Common Ragwort *Senecio jacobaea*.

- 4.4.4. Field **F4** is an arable field located just outside the western site boundary, which appears to have recently been sown with crops, and has little in the way of colonising vegetation. Two large heaps of rubble/spoil are also present within this field.
- 4.4.5. Field **F10** is a large arable field under wheat cultivation at the time of survey. Improved grassland is present at the field margins, ranging from 1 – 5m in width and is partially managed through mowing.
- 4.4.6. At the northern end of **F10** lies a small corner (labelled **F11** on Plan 3266/ECO3) sown with a Brassica crop. The margins of F11 are dominated by bare ground, tall ruderal and recolonising herbs.
- 4.4.7. At the eastern / south-eastern corner of the site lies part of **F12**, a field of Flax *Linum usitatissimum*. The margins of the field comprise a 2-4m wide zone of tall ruderal and rough grassland.
- 4.4.8. Field **F13** is a fallow field, previously cultivated for cereal crops but at the time of survey was dominated by bare ground and patches of rough grassland and tall ruderal. The southern-most third of the field was in cultivation for Flax at the time of survey.
- 4.4.9. Field **F14** is located partially within the east of the site, and has been recently ploughed such that it supports little, if any, vegetation. Opportunistic native species that have sparsely colonised within this field are limited to the occasional specimen of Common Ragwort, Willowherb and Redshank.

Evaluation

- 4.4.10. The arable fields all appear to receive intensive management and thus support little, if any, in the way of plant species, such that they are considered to be of low to negligible ecological value at the site level. As such, any loss to the proposals is of negligible ecological significance.

4.5. **Grassland**

Description of the Habitat

- 4.5.1. All arable fields within the site have grassy field margins, the majority of which are relatively narrow (approximately 1m wide). Six additional fields (**F3, F5, F6, F7, F8 and F9**), three of which are situated within the centre of the site, whilst the remaining two are located just outside the eastern site boundary are also composed of improved / poor semi-improved grassland (see Plan 3266/ECO3).
- 4.5.2. The narrow field margins surrounding the majority of the arable fields within the site comprise grass species including Cock's-foot *Dactylis glomerata*, False Oat-grass *Arrhenatherum elatius*, Rough Meadow-grass *Poa trivialis*, Yorkshire Fog *Holcus lanatus* and Perennial Ryegrass *Lolium perenne*, herb species including Comfrey *Symphytum officinale*, Creeping Buttercup

Ranunculus repens, Cleavers *Galium aparine* Wood Avens *Geum urbanum*, Red Deadnettle *Lamium purpureum*, Hedge Woundwort *Stachys sylvatica*, Dandelion *Taraxacum officinale* agg., Garlic Mustard *Alliaria petiolata* and Hedge Bindweed *Calystegia sepium*, and tall ruderal species including Common Nettle *Urtica dioica*, Cow Parsley *Anthriscus sylvestris*, Broad-leaved Dock *Rumex obtusifolius* and Common Hogweed *Heracleum sphondylium*.

- 4.5.3. Wider field margins and larger sections of colonising grassland are present along the eastern and northern boundaries of fields **F1** and **F2**. These grassland areas appear to be subject to infrequent management, such that the sward is very tall and the grassland structure is tussocky in places. Species present within these areas are dominated by grasses including Cock's-foot, False Oat Grass, Rough Meadow-grass, Yorkshire Fog, Perennial Ryegrass, Soft Brome *Bromus hordeaceus*, Barren Brome *Bromus sterilis*, Wheat *Triticum* sp., Oat *Avena sativa*, Wall Barley *Hordeum murinum*, Black Grass *Alopecurus myosuroides* and Meadow Foxtail *Alopecurus pratensis*. Herb species present include Common Knapweed *Centaurea nigra*, Common Fumitory *Fumaria officinalis*, Cow Parsley, Woody Nightshade *Solanum dulcamara*, Prickly Lettuce *Lactuca serriola*, Willowherb, Meadow Sweet *Filipendula ulmaria*, Dandelion, Mugwort *Artemisia vulgaris*, Creeping Buttercup, Cut-leaved Cranesbill *Geranium dissectum*, Herb Robert *Geranium robertianum*, Germander Speedwell *Veronica chamaedrys*, Great Plantain *Plantago major*, Poppy *Papaver rhoeas* and Wood Avens. Frequent tall ruderal species are also scattered within this habitat, including species such as Creeping Thistle, Musk Thistle *Carduus nutans*, Spear Thistle, Woolly Thistle *Cirsium eriophorum*, Common Hogweed and Common Nettle.
- 4.5.4. Fields **F6**, **F7** and **F8** (see Photograph 2) comprise poor semi-improved grassland consisting of common grass species with sparse herb species. The sward length is between 30-50cm. Grass species include Soft Brome, Cock's-foot, Perennial Ryegrass, Yorkshire Fog, Meadow Foxtail, Black Grass, Barren Brome, Annual Meadow-grass, Rough Meadow-grass, False Oat-grass, with herb species including Lesser Stitchwort *Stellaria graminea*, Creeping Buttercup, Cow Parsley, Herb Robert and Pignut *Conopodium majus*, and tall ruderal species including Common Hogweed.
- 4.5.5. Within **F8** are a number of discrete areas of wet flushes which are fed by land drains. Species within these areas comprise grasses, herbs, rushes, sedges and ruderals. In addition to the common grass species already listed, the species in these areas include Sweet Vernal-grass *Anthoxanthum odoratum*, herb species include Fool's-water-cress *Apium nodiflorum*, Water Mint *Mentha aquatica*, Meadow Buttercup, Meadow Vetchling *Lathyrus pratensis*, Germander Speedwell, Crane's-bill *Geranium* sp., Meadow Sweet, Silverweed *Potentilla anserina*, Cleavers, Dandelion, Common Mouse-ear *Cerastium fontanum*, rush species included Hard Rush *Juncus inflexus*, sedge and ruderal species include Great Willowherb *Epilobium hirsutum*, Marsh Thistle, Curled Dock *Rumex crispus*, Broad-leaved Dock, Horsetail, and Creeping Thistle.
- 4.5.6. Fields **F3**, **F5** and **F9** comprise improved grassland. **F3** is a hay meadow which had been recently harvested so the sward was short at approximately 5-10cm. **F5** is horse grazed and the sward length was mainly short,

approximately 10cm but in less heavily grazed areas it was up to approximately 40cm. The grass species comprises common grasses including Annual Meadow-grass, Cock's-foot, Perennial Ryegrass, Meadow Foxtail, Crested Dog's-tail *Cynosurus cristatus* and False Oat-grass. **F9** is another horse-grazed field, with approximately half of the field partitioned off with electric fencing to keep in horses at the time of survey. The remaining half was ungrazed at the time of survey and approximately 50cm in height, with a similar species to fields **F3** and **F5**, with the addition of Timothy *Phleum pratense*. A short line of semi-mature Alder *Alnus* sp. is present within the ungrazed section of the field.

Evaluation

- 4.5.7. The grassland fields generally comprise a relatively limited range of native species that are common and widespread in both the local and national context. The poor semi-improved grassland fields do feature patches of more botanically diverse grassland, albeit these patches are widely spaced, and the fields do not incorporate species of particular ecological value (such as Orchids), or other rare, protected, or notable plant species. Accordingly, any loss of these habitats to the proposals is of no more than low ecological significance.
- 4.5.8. Arable field margins are included within the list formed from Section 41 of the Natural Environmental and Rural Communities (NERC) Act 2006 as a Habitat of Principal Importance. However, in consideration that the field margins do not appear to be retained or managed for the benefit of wildlife, and are generally limited in size, based on UK BAP Priority Habitat Descriptions, the field margins at the site are considered unlikely to qualify as Habitats of Principal Importance.
- 4.5.9. Overall, the field margins comprise a limited range of species that are both common and widespread in the local and national context, and are therefore of low ecological value at the site level. Any loss of these habitats under the proposals is therefore considered to be of low ecological significance.

4.6. **Hedgerows**

Description of the Habitat

- 4.6.1. There are 29 hedgerows within or immediately adjacent to the site, which are labelled **H1 – H29** on Plan 3266/ECO3 and described in the table at Appendix 2.
- 4.6.2. Overall, the hedgerows lie at the boundaries to the arable fields, and appear to receive management centred on controlling outgrowth, such that the structure of each hedgerow varies. Each of the hedgerows exhibits a varied composition of native species, albeit the hedgerows generally overshadow the ground below, prohibiting new growth and therefore preventing a diverse ground flora from establishing.

Evaluation

- 4.6.3. The hedgerows within and adjacent to the site are generally composed of a limited range of native species, and the structure of each of the hedgerows

is varied and in places poor, whilst the diversity of the flora beneath them is limited. Accordingly, the majority of hedgerows within the site are unlikely to be classified as important under the Hedgerows Regulations (1997) criteria.

- 4.6.4. Hedgerows are also included within the Section 41 list of the NERC Act 2006 as a Habitat of Principal Importance. Based on the UK BAP Priority Habitat Descriptions (BRIG 2008) for hedgerows, the majority of hedgerows are likely to qualify as a Habitat of Principal Importance, but do not represent particularly good examples of this habitat type given their limited botanical diversity.
- 4.6.5. Five hedgerows within the site (**H1, H11, H12, H19, H20**) and one hedgerow just outside the site boundary (**H7**) are likely to be classified as 'important' under the Hedgerows Regulations (1997) criteria due to the large number of woody species the hedgerows support. The entirety of hedgerow **H7** and the majority of hedgerow **H1** will be retained and protected under the current proposals, with the exception of a short section of hedgerow **H1**, which will be removed to facilitate the construction of a spine road through the site. **H19, H11** and **H12** are short stretches of hedgerow that will be removed in their entirety, whilst **H20** will be partly removed.
- 4.6.6. On balance, the hedgerows are considered to be of low to moderate ecological value at the local level, and the minimal losses proposed are considered to be of no more than low ecological significance at the local level. The losses anticipated under the proposals will be offset by new species-rich native hedgerow planting as part of the wider development proposals.

4.7. **Trees and Scrub**

Description of the Habitat

- 4.7.1. Semi-mature to mature standard trees are present throughout hedgerows within and adjacent to the site, dominated by species including Sycamore *Acer pseudoplatanus*, Ash *Fraxinus excelsior* and a single Oak *Quercus robur*. Small areas of scattered scrub, including species such as Elder *Sambucus nigra* and Hawthorn *Crataegus monogyna*, are also located along field boundaries.

Evaluation

- 4.7.2. The trees and scrub within the site comprise a mixture of non-native / introduced species and a limited range of native species that are both common and widespread in the local and national context. None of these trees are considered to be of particular ecological value at the site/local level, especially those of a non-native/introduced nature. A number of trees will be lost to facilitate the development, however any native mature trees considered to contribute towards the biodiversity of the site (such as the mature Oak at the western site boundary) will be retained where practicable. Along with other retained trees, these will be protected during construction in accordance with arboricultural best practice guidelines (BS5837). Overall, the loss of a low number of trees to the proposals is of minor ecological significance.

4.8. Woodland

Description of the Habitat

- 4.8.1. Two small areas of woodland (**W1** and **W2**) are present within the site, whilst two additional areas (**W3** and **W4**) are present outside the south-eastern corner of the site.
- 4.8.2. Woodland **W1** (see Photograph 3) is situated in the north-western corner of the site on a steep embankment, and is dominated by young to semi-mature trees including Common Lime *Tilia x europaea*, Field Maple *Acer campestre*, Sycamore, Ash and Silver Birch *Betula pendula*, with an understorey of Hawthorn, Snowberry *Symphoricarpos albus*, Holly *Ilex aquifolium* and Elder. Ground cover beneath the woodland is relatively sparse, and dominated by Cow Parsley and Common Hogweed, with occasional Wood Avens and Lords-and-Ladies *Arum maculatum*.
- 4.8.3. A small area of woodland **W2** is included within the eastern site boundary. This woodland is dominated by Poplar *Populus* sp. planted in rows, with a sparse woody understorey of Hawthorn, Elder, Alder *Alnus glutinosa* and Willow *Salix* sp.. A sparse ground flora comprises a mixture of herbs / tall ruderal species including Wood Avens, Cleavers, Cow Parsley, Dock and Common Nettle. Patches of Soft Rush *Juncus effusus* are also present within damper areas.
- 4.8.4. Woodland **W3** is a small, roughly triangular copse located outside the eastern site boundary. The trees within the woodland are relatively young but form an almost closed canopy, being dominated by Oak, Cherry, Field Maple, Ash and Common Lime. The understorey is rather patchy and predominantly consists of Elder and Dogwood *Cornus sanguinea*. The ground flora is relatively impoverished and generally comprises Common Nettle, Wood Avens, Forget-me-not *Myosotis* sp., Burdock *Arctium* sp., Cleavers, Herb Robert and Wood Meadow-grass *Poa nemoralis*. A small stream runs along the northern boundary of the woodland, which contains Brooklime *Veronica beccabunga* and Creeping Buttercup.
- 4.8.5. Woodland **W4** is located outside the south-eastern site boundary and comprises a small copse of relatively even-aged, young trees. The canopy is closed and dominated by Ash, Sycamore, Cherry and Lime. The woodland has a poorly developed understorey but where present it comprises Spindle *Euonymus europaeus*, Rowan *Sorbus aucuparia*, Hawthorn and Willow *Salix* sp. The ground flora is relatively impoverished, being primarily dominated by dense Common Nettle. Occasional rubble piles are present within the woodland and there is a concrete ramp at the southern boundary.

Evaluation

- 4.8.6. All the woodland areas within and adjacent to the site are relatively young and species-poor, with a poorly developed under-storey and ground flora. Furthermore, each woodland area is small, and generally isolated in the wider landscape. As such none of the woodland areas are likely to act as important wildlife corridors, and none are considered to be of particular ecological value at the site/local level. Accordingly, any small losses to the

proposals are of no more than minor ecological significance. In any event, the majority of these woodland areas will be retained under the proposals, and protected during construction in accordance with arboricultural best practice guidelines (BS5837).

4.9. Ditches

Description of the Habitat

- 4.9.1. A number of ditches are associated with hedgerows within and adjacent to the site. These ditches are all approximately the same dimensions, being approximately 1-1.5m wide, with banks 1-1.5m high, and their banks and floors comprise a mixture of bare earth and leaf litter. Many of these ditches were dry at the time of survey, albeit several short stretches held small amounts of standing water in places, no deeper than 10cm, and two (**S1** and **S2** on Plan 3266/ECO3, see Photograph 4)) held moderately flowing water approximately 15cm deep with sparse patches of emergent Fool's-water-cress and Water Mint *Mentha aquatica*.
- 4.9.2. A narrow drainage channel, not associated with a hedgerow, is also located at the eastern boundary of the site. This ditch is approximately 1.2m wide with 1m high steep earth banks and a silt substrate along the channel base, and supports moderately flowing water. A small number of aquatic plant species are present in this ditch, including species such as Water Mint, Fool's-water-cress, Dock and Soft Rush, with herbs / tall ruderal species such as Cow Parsley, Cleavers and Common Nettle growing along the banks and margins.

Evaluation

- 4.9.3. The majority of ditches were dry at the time of survey, and based on their condition are unlikely to hold substantial volumes of water at any other time of year. In addition, the extent of accumulation of natural debris and encroachment from hedgerow vegetation indicates that the condition of the ditches is deteriorating, such that overall they are considered to represent no more than low ecological value at the site level, and any losses to the proposals are of no more than minor ecological significance.
- 4.9.4. The drainage channel at the eastern boundary of the site supports a slightly wider range of aquatic / marginal plant species, and is therefore considered to have slightly elevated ecological value in comparison to the remaining ditches within or adjacent to the site. Accordingly, this ditch will be retained under the proposals.

Recommendation

- 4.9.5. In order to safeguard against any potential run-off or pollution events during construction, best management practice will be followed in accordance with the advice issued by the Environment Agency in its Pollution Prevention Guidelines or relevant updated documents. This will essentially reduce potential pollution effects to nil, minimising any harm to wildlife associated with the ditches / canal, and connecting watercourses. This will include relevant safeguards such as:

- Storage areas for chemicals, fuels, etc. will be sited well away from the ditches, and stored on an impervious base within an oil-tight bund with no drainage outlet;
- Where possible, and with prior agreement of the sewage undertaker, silty water should be disposed of to the foul sewer;
- Water washing of vehicles, particularly those carrying fresh concrete and cement, mixing plant, etc. will be carried out in a contained area as far from the ditches / canal as practical, to avoid contaminated water entering the ditches;
- Refuelling of plant will take place in a designated area, preferably on an impermeable surface.

4.10. Pond

Description of the Habitat

- 4.10.1. A single pond, approximately 35m long and 9m wide is located within the eastern boundary of the site (see Photograph 5), which appears to be fed by a broken water pipe within field F2. This pond appears to be extremely ephemeral, and is very shallow (<10cm) with no discernable banks. No aquatic vegetation is present, with the only plants being occasional islands of Dock and grasses remaining from the original terrestrial arable ground flora.
- 4.10.2. The water quality within the pond also appears to be particularly poor, such that a floating residue is present at the pond edges, and there is evidence of waterfowl foraging throughout the pond.

Evaluation

- 4.10.3. As outlined above, the pond is extremely ephemeral and supports little, if any, emergent or aquatic vegetation. Accordingly, this habitat is considered unlikely to represent any more than negligible to low ecological value at the site level. In any event, the current proposals incorporate a number of purpose-built SUDS features, one of which will directly replace this pond, which will be planted with appropriate native aquatic / marginal species, and therefore represent habitats of much greater ecological value than the current pond.

4.11. Canal

Description of the Habitat

- 4.11.1. A short stretch of the Oxford Canal is situated within the eastern site boundary (see Photograph 6). The channel is straight and uniform in width (estimated to be approximately 2.1m wide) and depth (estimated to be approximately 2m deep). The base substrate of the channel could not be determined given the high turbidity of the water, however this in itself would suggest that the base substrate is likely to be composed of silt for the most part. The flow rate at the time of survey was negligible.
- 4.11.2. The majority of the channel is open, and not subject to shading effects of nearby vegetation, however this stretch of the Canal appears to be well

used by barges, and thus the coverage of submerged and emergent aquatic vegetation is greatly limited by their passage.

- 4.11.3. Narrow strips of emergent and marginal plants were recorded at the margins of the watercourse in places. These strips are dominated by Sedges *Carex spp.* and Lesser Celandine *Ranunculus ficaria*, with occasional to frequent herbs including Meadow Sweet, Cow Parsley, Lords-and-Ladies, Butterbur *Petasites hybridus*, Yellow Flag Iris *Iris pseudocorus*, Dock *Rumex spp.* including Water Dock *Rumex hydrolapathum*, Cleavers, Reed Canary-grass *Phalaris arundinacea*, Great Willowherb, Creeping Buttercup, Water Mint and occasional tall ruderal species including Common Nettle, Common Hogweed and Wild Teasel *Dipsacus fullonum*. Soft Rush and Hard Rush *Juncus inflexus* are also present in places, along with encroaching grasses including Cock's-foot and Yorkshire Fog.
- 4.11.4. The eastern bank of the canal is used as a public footpath, and as such features a narrow strip of bare, compacted earth. To either side of this track is short sward grassland dominated by grasses including Cock's-foot and Yorkshire Fog, with occasional herbs including Creeping Buttercup and Daisy *Bellis perennis*. Approximately half the length of this bank is composed of earth, and the slope of the bank is very shallow such that a number of areas have begun to erode and flood towards the footpath, whilst the remainder is protected from erosion by metal revetments.
- 4.11.5. In contrast, the western bank of the canal comprises an unmanaged field margin dominated by long sward grasses, with occasional tall ruderal vegetation including Wild Teasel and Common Nettle and occasional scrub including Ash, Hawthorn and Elder. The majority of the length of this bank is composed of a relatively steep earth slope, whilst a shorter section is again protected from erosion by metal revetments.

Evaluation

- 4.11.6. The stretch of canal that will be affected by the proposals is subject to relatively heavy human traffic (both on the bank-side footpaths and on the waterway itself), and as such the aquatic / emergent vegetation is relatively limited in extent and diversity. Accordingly, the stretch of canal within the site is considered to be of no more than low ecological value in the local context. In any event, the effect of the proposals on the canal will be very minimal and temporary, and adjoining sections of the canal will be fully protected during the construction period under the recommendations outlined in section 4.8.5.

4.12. **Background Records**

- 4.12.1. No records of any specially-protected, rare or notable plant species were returned from within or adjacent to the site as a result of the data search exercise.

5. FAUNAL USE OF THE SITE AND EVALUATION

5.1. General observations were made during the surveys of any faunal use of the site, whilst specific survey work was undertaken in respect of bats and Badger. Below, the potential presence of protected species within the site is evaluated, along with an assessment of any potential impacts arising from the development.

5.2. Bats

Legislation

5.2.1. All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence *inter alia* to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to rear or nurture their young, or their ability to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance;
- Damage or destroy a breeding site or resting place of a bat.

5.2.2. In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb bats while occupying a structure or place that it uses for that purpose.

5.2.3. If proposed development work is likely to result in an offence a licence will need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats.

5.2.4. There are at least 17 breeding bat species in Britain. Many of them are considered threatened due to a variety of factors including habitat loss and disturbance/damage to roosts. Of these 17 species, a number regularly use buildings and trees as roost sites.

Potential Use of Site

5.2.5. **Roosts: Buildings.** A single stable block with an off-centre pitched roof constructed entirely from wooden boarding is present within field F5. This building is modern, single-skinned, and constructed from pre-fabricated materials with no enclosed roof space, such that it is considered to offer negligible potential for roosting bats. Indeed no evidence of use by bats, i.e. bat droppings, staining from fur/urine or scratches, etc., was recorded during detailed internal and external inspections of this building.

5.2.6. **Roosts: Trees.** A number of trees are present within the site as shown on Plan 3266/ECO3. These trees were assessed for their potential to support roosting bats and rated according to BCT guidelines as either Category 1 –

a confirmed roost, Category 2a – high potential, Category 2b – moderate/low potential or Category 3 – negligible potential.

- 5.2.7. A number of trees within and adjacent to the site with the potential to support bat roosts were identified within and adjacent to the site. In summary, two of the trees within or adjacent to the site are considered to be of high potential to support roosting bats (i.e. Category 2a), whilst eight additional trees are considered to be of moderate to low (i.e. Category 2b), and the remainder being of negligible potential (i.e. Category 3).

Table 2: Assessment of the potential of trees to support roosting bats

Tree No.	Species	Age	Features to support roosting bats	BCT Category
T1	Ash	Mature	Small rot holes and dense ivy coverage	2b (moderate to low)
T2	Ash	Dead	Multiple rot holes, cavities and peeling bark (Photograph 7)	2a (high)
T3	Ash	Mature	Dead wood and dense Ivy coverage	2b (moderate to low)
T4	Ash	Mature	Rot holes	2b (moderate to low)
T5	Ash	Mature	Woodpecker hole and split limb	2b (moderate to low)
T6	Ash	Mature	Knot holes and dense Ivy coverage	2b (moderate to low)
T7	Oak	Mature	Occasional dead wood but no potential roost features observed	3 (negligible)
T8	Ash	Mature	Woodpecker holes, torn limbs and cavities (Photograph 8)	2a (high)
T9	Oak	Mature	Dead limbs, vertical splits and peeling bark	2b (moderate to low)
T10	Oak	Semi-mature	Split limbs and rot holes	2b (moderate to low)
T11	Oak	Mature	Dense ivy cover, split limbs and peeling bark	2b (moderate to low)

- 5.2.8. All trees identified as having bat potential were carefully examined for any evidence of bats. No such evidence of signs of use by bats, e.g. staining from fur/urine, scratches or droppings, or bats themselves were observed in association with the features listed in the table above in any of the on-site trees.
- 5.2.9. None of the other trees within or immediately adjacent to the site exhibit features of potential value to roosting bats, and therefore fall into Category 3, i.e. negligible potential.
- 5.2.10. **Foraging / Commuting.** The trees and hedgerows within the site are likely to offer potential as foraging/commuting features for bats, albeit far superior opportunities for foraging/commuting bats are likely to be afforded by less intensively managed habitats, such as the nearby River Cherwell.

Background Records

- 5.2.11. A search of the NBN Gateway returned records for several bat species within the local area including Brown Long-eared Bat *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Daubenton's Bat *Myotis daubentonii*, Leisler's Bat *Nyctalus leisleri*, Natterer's Bat *Myotis nattereri*, Noctule *Nyctalus noctula*, Serotine *Eptesicus serotinus*, *Nyctalus/Eptesicus* agg. and Pipistrelle *Pipistrellus* sp.

Evaluation

- 5.2.12. **Roosting.** The stable block located within the site is modern, constructed from pre-fabricated materials, and does not feature any insulation or enclosed roof spaces. As such, the internal conditions within this building are subject to rapid fluctuations in temperature, and are therefore not typically favoured by bats.
- 5.2.13. Based on the guidance set out within the Bat Mitigation Guidelines (English Nature, 2004) it is considered that the above combination of factors strongly indicates a decreased likelihood of bats being present within the stable block, such that based on guidance set out in Natural England's standing advice⁹ for bats, the building is considered to be 'low-risk' in respect of bats, and no further survey effort is required.
- 5.2.14. Two trees close to the site boundaries exhibit a substantial number of features such as rot holes, torn limbs and cavities that provide potential opportunities for roosting bats, and thus fall within Category 2a (high potential) according to the BCT guidance. Based on the features exhibited by these trees, their location and the context of the local area, these trees are considered to be of moderate to high value to roosting bats at the site level, albeit no actual evidence of use by bats was recorded. Eight additional trees within or adjacent to the site exhibit a smaller number of features that provide potential opportunities for roosting bats, and thus fall within Category 2b (moderate to low potential) of the guidance. Given the features exhibited by these additional nine trees, they are considered to be of moderate to low value to roosting bats at the site level.

Recommendation

- 5.2.15. It is understood that the majority of trees with moderate to low potential for roosting bats (2b) will be retained under the current proposals. However should the removal of any of these trees be required to facilitate the development, this should be undertaken using a 'soft felling' technique, which involves slowly lowering and cushioning any limbs and tree sections that exhibit features (such as rot holes, split limbs, etc.) considered potentially suitable for bats, thereby reducing the impact on these tree sections as they are brought to the ground.
- 5.2.16. It is understood that the two trees with high potential for roosting bats (2a) will be retained under the proposed development, however should any tree surgery works to these trees be required to facilitate the development, these should be preceded by an inspection of the sections to be removed by an ecologist, and may need to be followed by dusk/dawn bat detector surveys (within the active bat season of April – September) in order to determine the presence/absence of roosting bats.
- 5.2.17. Following these surveys, should no evidence of roosting bats to indicate a confirmed roost be identified, the trees will be down-graded to Category 2b and relevant limbs removed if necessary, using a 'soft felling' technique. However, if, following the dusk/dawn surveys any bat roosts are confirmed

⁹ Natural England Standing Advice Species Sheet: Bats

within the affected trees, then any works involving these trees are likely to require a licence from Natural England.

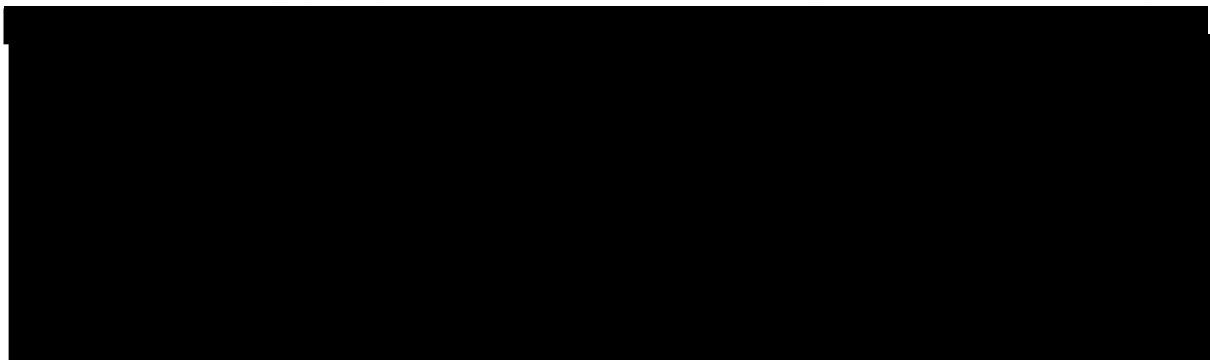
- 5.2.18. If a Natural England licence is required, then an appropriate mitigation strategy will be worked up as part of the licence application process, post-planning. Following a number of enhancement measures (i.e. new roosting opportunities such as bat boxes) within the site, it is considered likely that the proposed development will lead to a net gain in terms of roosting opportunities for bats within the site. In addition, the lighting scheme will be sensitively designed to minimise light spill onto retained trees with potential to support roosting bats.
- 5.2.19. **Foraging/Commuting.** As outlined above, the trees and hedgerows within the site are likely to offer some potential as foraging/commuting features for bats, albeit far superior opportunities are likely to be afforded by nearby, less intensively managed habitats, such as the River Cherwell. Given the intensively managed nature of the majority of the habitats within the site, these are considered to be of low value to foraging/commuting bats, whilst the trees and hedgerows are likely to be of no more than low to moderate value to bats in terms of foraging/commuting at the local level.
- 5.2.20. As set out in section 5.9, although several short stretches of hedgerow will be lost to the proposals, these losses are relatively minor, and connectivity for foraging/commuting bats will therefore essentially be unaffected by the proposed development. In addition, a sensitive approach to the lighting scheme will be incorporated, as outlined below.

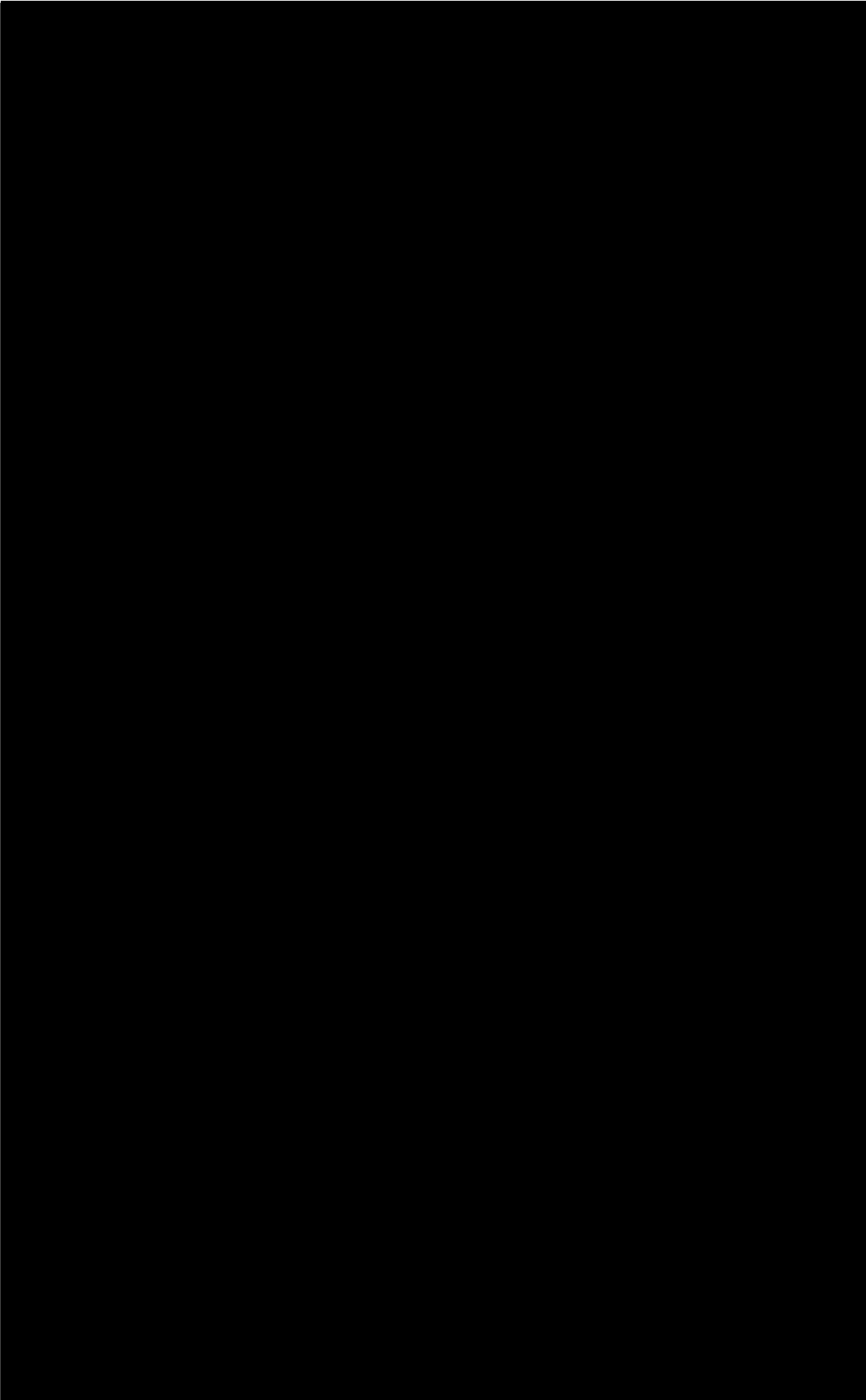
Recommendation

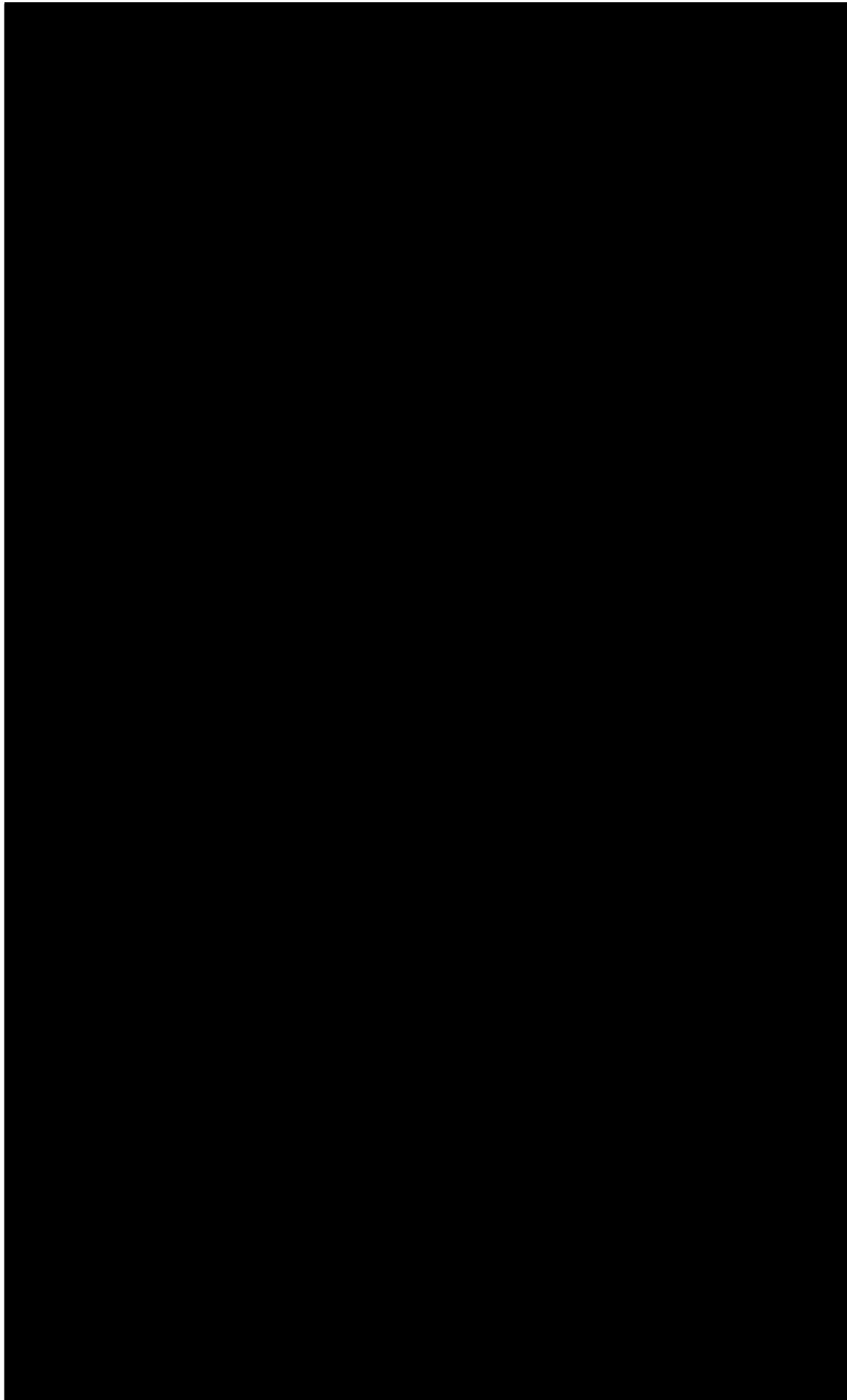
- 5.2.21. Any lighting should be positioned in order to avoid excessive illumination of the retained trees / hedgerows and proposed landscape planting, so as to maintain the long term potential of these habitats to provide foraging and commuting opportunities for bats. Directional lighting, reduced wattage lamps and fitted louvres can be employed to reduce night-time illumination of these areas further, if required.

Summary

- 5.2.22. Subject to the implementations of the recommendations outlined above, along with other enhancements (see section 5.9), it is considered likely that there will be no negative effect on the local population status of bats as a result of the development.







5.4. Other Mammals

Potential Use of Site and Evaluation

- 5.4.1. No evidence of any other protected, rare or notable mammal species was recorded within the site.

Background Records

- 5.4.2. A search of the NBN Gateway returned single records for Brown Hare *Lepus europaeus*, Polecat *Mustela putorius* and Hedgehog *Erinaceus europaeus* within the local area. The closest record is for Polecat located approximately 2.9km west of the site, dating to 1997¹⁰. The single Hedgehog record is located within a 1x1km grid-square approximately 2.9km south of the site¹¹. However, due to the resolution of the data provided, a more precise location for this record could not be determined. The single record for Brown Hare is located approximately 4.7km southwest of the site, dating to 2008¹².

5.5. Amphibians

Legislation

- 5.5.1. All British amphibian species receive a degree of protection under the 1981 Wildlife and Countryside Act (as amended). The level of protection varies from protection from sale or trade only, as is the case with species such as Smooth Newt *Triturus vulgaris* and Common Toad *Bufo bufo*, to the more rigorous protection afforded to species such as the Great Crested Newt *Triturus cristatus*.

- 5.5.2. Although Great Crested Newts are regularly encountered throughout much of lowland England and Wales, the UK holds a large percentage of the world population of the species. As such, the UK has an international obligation to conserve the species and it receives full protection under domestic and European legislation. Specifically, Great Crested Newt is classified as a European Protected Species and therefore receives protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence *inter alia* to:

- Deliberately kill, injure or capture a Great Crested Newt;
- Deliberately disturb Great Crested Newts, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to hibernate, or migrate, or which is likely to affect significantly their local distribution or abundance;
- Deliberately take or destroy the eggs of a Great Crested Newt;
- Damage or destroy a breeding site or resting place of a Great Crested Newt.

¹⁰ The information used here was sourced through the NBN Gateway website and included the following resources: BRC. "Mammal records from Britain from the Atlas of Mammals (1993), with some subsequent records". Uploaded 20/05/2008. <http://data.nbn.org.uk/> (Accessed 26 June 2013).

¹¹ The information used here was sourced through the NBN Gateway website and included the following resources: PTES. "Living with Mammals survey: sightings from 2003 to 2011". Uploaded 29/05/2012. <http://data.nbn.org.uk/> (Accessed 26 June 2013).

¹² Ibid: footnote 3.

5.5.3. In addition, the Great Crested Newt is also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any Great Crested Newt uses for shelter or protection; or
- Disturb any Great Crested Newt while occupying a structure or place which it uses for that purpose.

5.5.4. If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard Great Crested Newt.

Potential Use of Site

5.5.5. A single ephemeral pond is present within the site, and a review of the 1:25,000 Ordnance Survey map for the area shows the next nearest waterbody to be located approximately 0.6km to the south-east of the site. However, an initial appraisal of both ponds was made using an HSI to identify any potential to support Great Crested Newts, and the pond within the site was found to fall within the 'poor' HSI category, whilst the next nearest waterbody was found to be completely dry (having apparently been dry for several years previously) and therefore unsuitable for amphibian breeding.

5.5.6. Several ditches are also present within the site, however these were noted to be predominantly dry at the time of survey, and generally over-shadowed and encroached by hedgerow vegetation with very little or no aquatic/emergent vegetation.

5.5.7. It is therefore considered extremely unlikely that the pond / ditches within the site support a resident population of Great Crested Newt.

5.5.8. Furthermore, the terrestrial habitats within the site are largely unsuitable for amphibians, such as Great Crested Newt, being dominated by arable.

Background Records

5.5.9. A search of the NBN Gateway returned no records for protected amphibians within the local area.

Evaluation

5.5.10. As set out above, the aquatic and terrestrial habitats within the site are considered sub-optimal for Great Crested Newts, and given the intensively managed nature of the habitats within the site and their isolation in the local context in terms of off-site waterbodies, it is considered reasonably unlikely that any protected amphibian species such as Great Crested Newt are present within the site, and no specific safeguards / mitigation measures are considered necessary.

5.6. Reptiles

Legislation

- 5.6.1. All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). However, a higher level of protection is afforded to Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* than to Adder *Vipera berus*, Grass Snake *Natrix natrix*, Slow-worm *Anguis fragilis* and Common Lizard *Lacerta vivipara*.
- 5.6.2. For all British reptile species, Section 9 of the Wildlife and Countryside Act 1981 (as amended) contains provisions making it an offence to intentionally:
- Kill or injure; or to
 - Sell, offer for sale or trade any British reptile.
- 5.6.3. Because Slow-worm, Common Lizard, Grass Snake and Adder are relatively widespread British species, their habitat is not directly protected. Nevertheless, because of their partial protection, disturbing or destroying their habitat whilst they are present may lead to an offence.

Potential Use of Site

- 5.6.4. No evidence of reptiles was found on site during the survey, and the habitats on site are generally unsuitable for reptiles, being dominated by arable and narrow field margins. However, small numbers of common reptiles may be present within the poor semi-improved grassland fields situated outside the eastern site boundary, adjacent to the canal, and as such small numbers of common species such as Grass Snake could potentially frequent the site from time to time.

Background Records

- 5.6.5. A search of the NBN Gateway returned a single record for Grass Snake *Natrix natrix* located a considerable distance from the site.

Evaluation and Recommendation

- 5.6.6. The habitats within the site boundary are sub-optimal for common reptile species, and it is therefore considered unlikely that the site supports a resident population of reptiles. However, given the presence of more suitable terrestrial habitat nearby, in the form of poor semi-improved grassland, the possibility remains that small numbers of common reptile species such as Grass Snake could potentially occur at the site on occasion.
- 5.6.7. Accordingly, the following reasonable avoidance measures will be employed prior to site clearance:

- Any stretches of hedgerow to be removed will be subject to a finger-tip search by a suitably qualified ecologist, and their careful removal then supervised by this ecologist. The ecologist will also examine any suitable features such as log/rock piles within the construction zone, which can then be carefully dismantled by hand under the ecologist's supervision and removed from the area.
- A habitat manipulation exercise (i.e. strimming) of any suitable grassland habitat within the construction area will also be conducted under the supervision of a suitably experienced ecologist.
- Prior to any strimming/habitat manipulation, a fingertip search of the ground vegetation will be carried out by the ecologist, paying particular attention to crevices within the soil and around roots, and the areas beneath any rocks, logs or other refugia.
- The improved grassland vegetation will then be strimmed to a height of approximately 150mm working towards the vegetated field boundaries, and the arisings carefully raked off whilst searching for any reptiles.
- The strimming will then be repeated to a height of approximately 20mm, and the arisings again raked off, thereby removing any suitable foraging/sheltering habitat.
- The vegetation will subsequently be maintained at this short sward height, in order to minimise its suitability to reptiles, until site clearance works commence.
- In the event that any reptiles are encountered, these will need to be relocated to a suitable receptor site in the local area.

5.6.8. With the implementation of the measures set out above, it is considered that there will be no net loss of local reptile conservation status as a result of the proposed development.

5.7. **Birds**

Legislation

5.7.1. Section 1 of the Wildlife & Countryside Act 1981 (as amended) is concerned with the protection of wild birds. With certain exceptions, all wild birds are protected such that it is an offence to intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird whilst in use* or being built;
- Take or destroy an egg of any wild bird.

* The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.

- 5.7.2. Species listed under Schedule 1 of the Act receive greater protection such that they are also protected against intentional or reckless disturbance whilst building a nest or whilst they are in, on or near a nest containing eggs or young. The dependent young of Schedule 1 birds are also protected against intentional or reckless disturbance. Offences in respect of Schedule 1 species are subject to special, i.e. greater, penalties.
- 5.7.3. **Conservation Status.** The RSPB categorise British bird species in terms of conservation importance based on a number of criteria including the level of threat to a species' population status¹³. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline ($\geq 50\%$ over the past 25 years).

Potential Use of Site

- 5.7.4. Bird species recorded at the site include Chaffinch *Fringilla coelebs*, Blackbird *Turdus merula*, Robin *Erithacus rubecula*, Carrion Crow *Corvus corone*, Magpie *Pica pica*, Wren *Troglodytes troglodytes*, Skylark *Alauda arvensis* (an RSPB Red Listed species), Yellowhammer *Emberiza citrinella* (an RSPB Red Listed species), Reed Bunting *Emberiza schoeniclus*, Greenfinch *Carduelis chloris*, Wood Pigeon *Columba palumbus*, Great Tit *Parus major*, Long-tailed Tit *Aegithalos caudatus*, Blackcap *Sylvia atricapilla*, House Sparrow *Passer domesticus* (an RSPB Red Listed species), Goldfinch *Carduelis carduelis* and Whitethroat *Sylvia communis*. None of the birds recorded within the site are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), or are considered to be of significant conservation concern.

Background Records

- 5.7.5. A search of the NBN gateway returned several records for UK BAP and RSPB Red listed species within the local area including Cuckoo *Cuculus canorus*, Grasshopper Warbler *Locustella naevia*, Grey Partridge *Perdix perdix*, Tree Sparrow *Passer montanus*, Turtle Dove *Streptopelia turtur*, Lapwing *Vanellus vanellus*, House Sparrow *Passer domesticus*, Spotted Flycatcher *Muscicapa striata* and Yellowhammer *Emberiza citrinella*.

Evaluation

- 5.7.6. The habitats within the site that offer the greatest foraging and nesting opportunities for birds are the trees, hedgerows and woodlands, which are in any case mirrored in the surrounding countryside by similar habitat that likely affords equivalent or greater foraging and nesting opportunities for birds. This site is therefore not considered likely to be of significant ornithological value within the local context, and overall is considered to be of low ecological value for birds at the local level.

Recommendations

- 5.7.7. Within the site, it is recommended that any clearance of potential nesting habitat be undertaken outside of the nesting season (i.e. outside March to

¹³ RSPB "The population status of birds in the UK - *Birds of Conservation Concern: 2009*"

August inclusive). Should this not be possible, it is recommended that an ecologist first checks any suitable habitat to be cleared in order to determine the location of any nests before removal. Any nests identified should be cordoned off and protected until the end of the nesting season or until the nests are no longer active.

5.8. Invertebrates

Potential Use of Site and Evaluation

- 5.8.1. In the absence of any wildlife site designated for its invertebrate interest within or adjacent to the site and in consideration of the nature of the habitats present within the site and the current intensive management regime of the land, it is considered unlikely that any protected, rare or notable invertebrate species inhabit the site. However, the site is expected to support a limited range of common invertebrates, and indeed Large White *Pieris brassicae*, Orange-tip *Anthocharis cardamines* and Small Tortoiseshell *Aglais urticae* butterflies were recorded during the survey, in addition to a number of bumblebees, craneflies, White-legged Damselfly *Platycnemis pennipes* and Four-spotted Chaser dragonfly *Libellula quadrimaculata*.

Background Records

- 5.8.2. A search of the NBN Gateway returned several records for butterfly Priority Species within the local area including Brown Hairstreak *Thecla betulae*, Small Blue *Cupido minimus*, Small Heath *Coenonympha pamphilus*, Wall *Lasiommata megera* and White-letter Hairstreak *Satyrium w-album*. In addition, numerous records for moth Priority Species within the local area were returned including, but not limited to, Beaded Chestnut *Agrochola lychnidis*, Blood-vein *Timandra comae*, Brown-spot Pinion *Agrochola litura*, Green-brindled Crescent *Allophyes oxyacanthae*, Large Nutmeg *Apamea anceps* and Small Square-spot *Diarsia rubi*.

6. MITIGATION MEASURES AND ECOLOGICAL ENHANCEMENTS

6.1. Mitigation Measures

Bats

- 6.1.1. **MM1a:** Should the removal of any of trees with moderate to low potential for roosting bats (2b) be required to facilitate development, this should be undertaken using a 'soft felling' technique, further details are given in 5.2.15.
- 6.1.2. **MM1b:** Should any works to trees with high potential for roosting bats (2a) be required to facilitate the development, these should be preceded by an inspection by an ecologist, and may need to be followed by dusk/dawn bat detector surveys, further details are given in 5.2.16 - 5.2.18.
- 6.1.3. **MM1c:** Any lighting should be positioned in order to avoid excessive illumination of retained trees / hedgerows and any proposed landscape planting.

Badger

- 6.1.4. **MM2:** Setts S10 and S11 will be subject to an exclusion exercise, where necessary, undertaken under a Natural England licence followed by excavation; all of which will be directed and supervised by a suitably qualified ecologist. Additional measures as outlined in 5.3.18 should also be undertaken.

Reptiles

- 6.1.5. **MM3a:** A suitably qualified ecologist will oversee a habitat manipulation exercise as detailed at section 5.6.7.
- 6.1.6. **MM3b:** The vegetation will subsequently be maintained at a short sward height, in order to minimise its suitability to reptiles, until site clearance works commence.
- 6.1.7. **MM3c:** In the event that any reptiles are encountered, these will need to be relocated to a suitable receptor site in the local area.

Birds

- 6.1.8. **MM4:** Clearance of potential nesting habitat should preferably be undertaken outside of the nesting season (i.e. outside March to August inclusive). Should this not be possible, it is recommended that an ecologist first checks any suitable habitat to be cleared in order to determine the location of any nests before removal. Any nests identified should be cordoned off and protected until the end of the nesting season or until the nests are no longer active.

6.2. **Ecological Enhancements**

- 6.2.1. The National Planning Policy Framework (NPPF) requires developments to maximise the opportunities for biodiversity by building in enhancement measures. The proposals present the opportunity to deliver ecological enhancements for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of the national and local Biodiversity Action Plan (BAP).
- 6.2.2. Ecological enhancements are proposed as part of the wider development proposals and therefore no additional specific enhancements are considered necessary or appropriate as part of the present application.

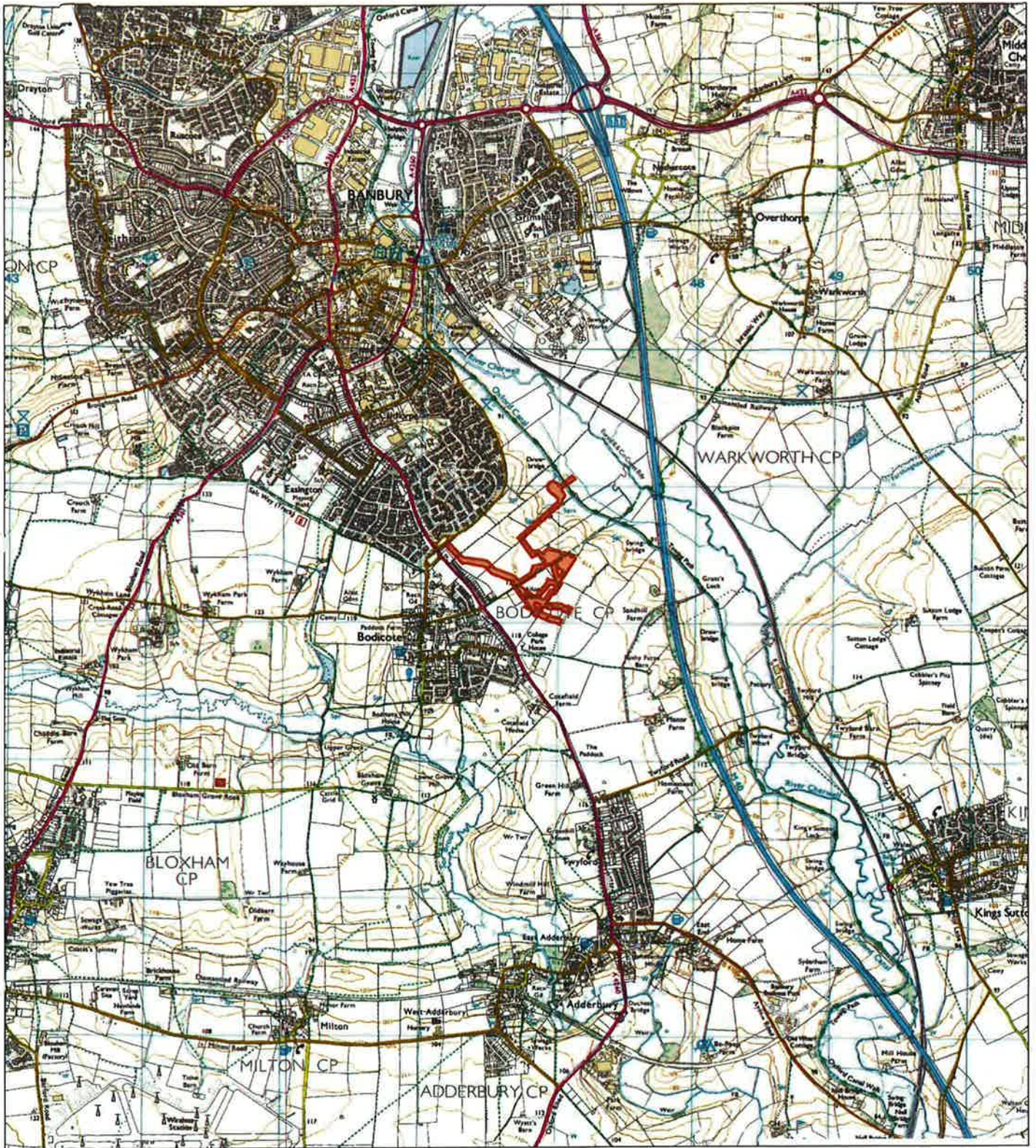
7. SUMMARY AND CONCLUSIONS

- 7.1. Aspect Ecology was commissioned by Barratt Homes, Bovis Homes and Taylor Wimpey in June 2013 to undertake an ecological assessment in respect of a number of fields that incorporate the proposed locations of spine roads and drain runs to service a consented residential development, centred at grid reference SP 467 385.
- 7.2. The site was surveyed in June 2013 based on extended Phase 1 methodology as recommended by Natural England. In addition, a general appraisal of faunal species was undertaken to record the potential presence of any protected, rare or notable species, with specific surveys conducted in respect of bats and Badger.
- 7.3. **Ecological Designations.** The site itself is not subject to any statutory or non-statutory nature conservation designation and no such designations will be adversely affected by the proposals.
- 7.4. **Habitats.** The site is dominated by arable and improved grassland bordered by hedgerows and/or lines of trees, with small areas of woodland. The majority of habitats within the site are considered to be of low to negligible ecological value at the local level, and as such, any loss of these habitats is of minor, if any, ecological significance. Several hedgerows of elevated ecological value are present within the site but will be largely retained under the proposals with the exception of several sections.
- 7.5. **Protected Species.** The habitats within the site provide limited opportunities for bats, Badgers, common birds, and reptiles. Appropriate mitigation / precautions are to be implemented, as set out within this report.
- 7.6. **Conclusion.** In conclusion, based on the evidence obtained from detailed ecological survey work and with the implementation of the recommendations set out in this report, there is no reason to suggest that any ecological designations, habitats of nature conservation interest or any protected species will be significantly harmed by the proposals.

PLANS

PLAN 3266/ECO1

Site Location



KEY:



SITE LOCATION

aspect ecology

Aspect Ecology Limited - West Court - Hardwick Business Park
 Noral Way - Banbury - Oxfordshire - OX16 2AF
 01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

LONGFORD PARK, BANBURY PROJECT

SITE LOCATION TITLE

3266/ECO1 DRAWING NO.

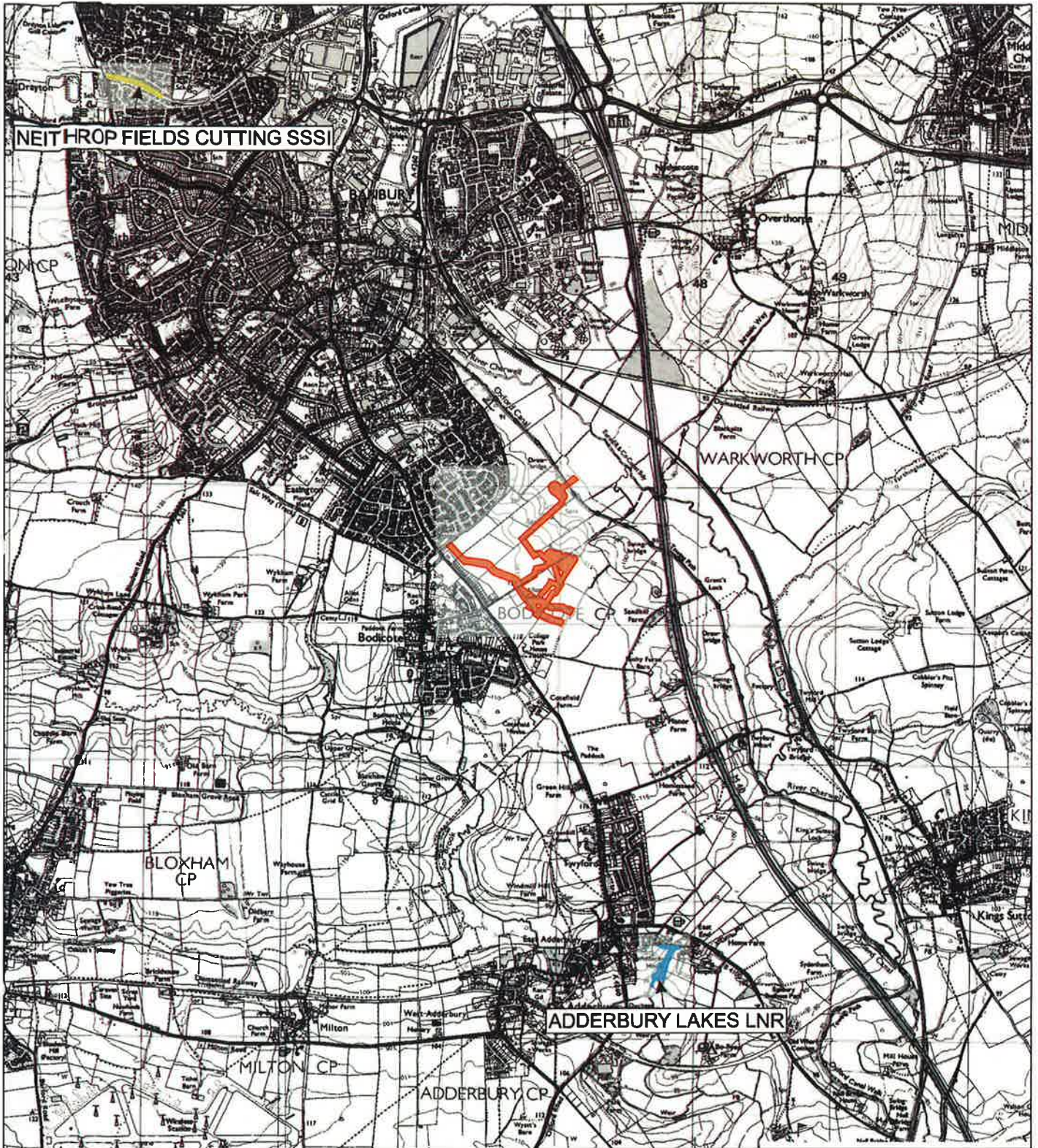
REV.

JUNE 2013 DATE






PLAN 3266/ECO2

Ecological Designations



KEY:

-  SITE LOCATION
-  SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
-  LOCAL NATURE RESERVE (LNR)

aspect ecology

Aspect Ecology Limited - West Court - Hardwick Business Park
 Norel Way - Banbury - Oxfordshire - OX18 2AF
 01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

LONGFORD PARK, BANBURY	PROJECT
ECOLOGICAL DESIGNATIONS	TITLE
3266/ECO2	DRAWING NO.
	REV.
JUNE 2013	DATE



PLAN 3266/ECO3

Habitats and Ecological Features



- KEY:**
- SURVEY AREA
 - BUILDING
 - ARABLE CROP
 - ARABLE - RECENTLY PLOUGHED
 - FALLOW
 - IMPROVED GRASSLAND
 - POOR SEMI-IMPROVED GRASSLAND
 - DAMP GRASSLAND
 - RECOLONISING GROUND
 - TALL RUDERAL VEGETATION
 - WOODLAND
 - TREE
 - TREE WITH BAT POTENTIAL CATAGORY 2a
 - TREE WITH BAT POTENTIAL CATAGORY 2b
 - HEDGEROW
 - SCATTERED SCRUB
 - WET FLUSH
 - DITCH/DRY DITCH
 - RUBBLE/SPOIL PILE
 - [Redacted]
 - LATRINE
 - MAMMAL PATH
 - PUSH THROUGH
 - LOG PILE
 - FENCE

LONGFORD PARK,
BANBURY

HABITATS AND ECOLOGICAL
FEATURES

3266/ECO3

JUNE 2013

PROJECT
TITLE
DRAWING NO.
REV.
DATE



Aspect Ecology Limited - West Court - Hardwick Business Park
Noral Way - Banbury - Oxfordshire - OX16 2AF
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PHOTOGRAPHS

PHOTOGRAPH 1: Arable Field F2



PHOTOGRAPH 2: Poor Semi-improved Grassland



PHOTOGRAPH 3: Woodland W1



PHOTOGRAPH 4: Stream S1



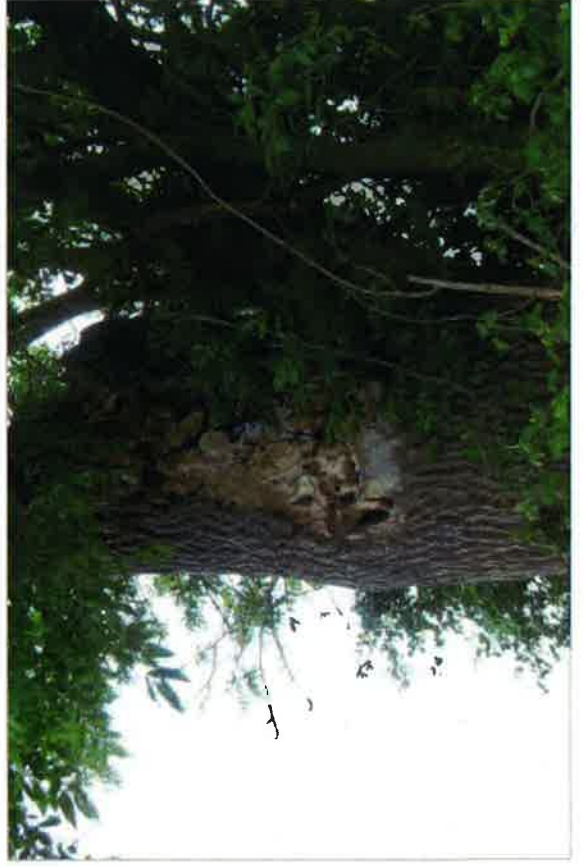
PHOTOGRAPH 5: Ephemeral Pond



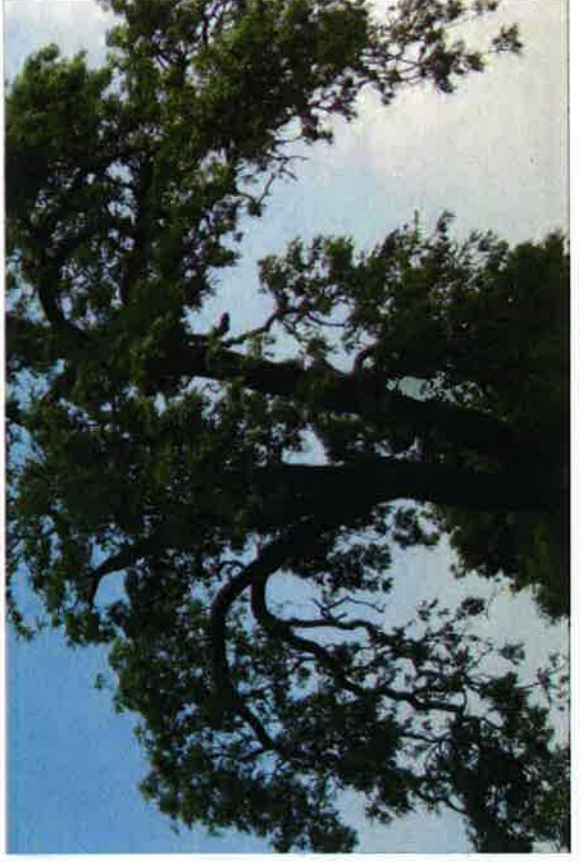
PHOTOGRAPH 6: Oxford Canal



PHOTOGRAPH 7: Tree T2 - High Bat Potential (2a)



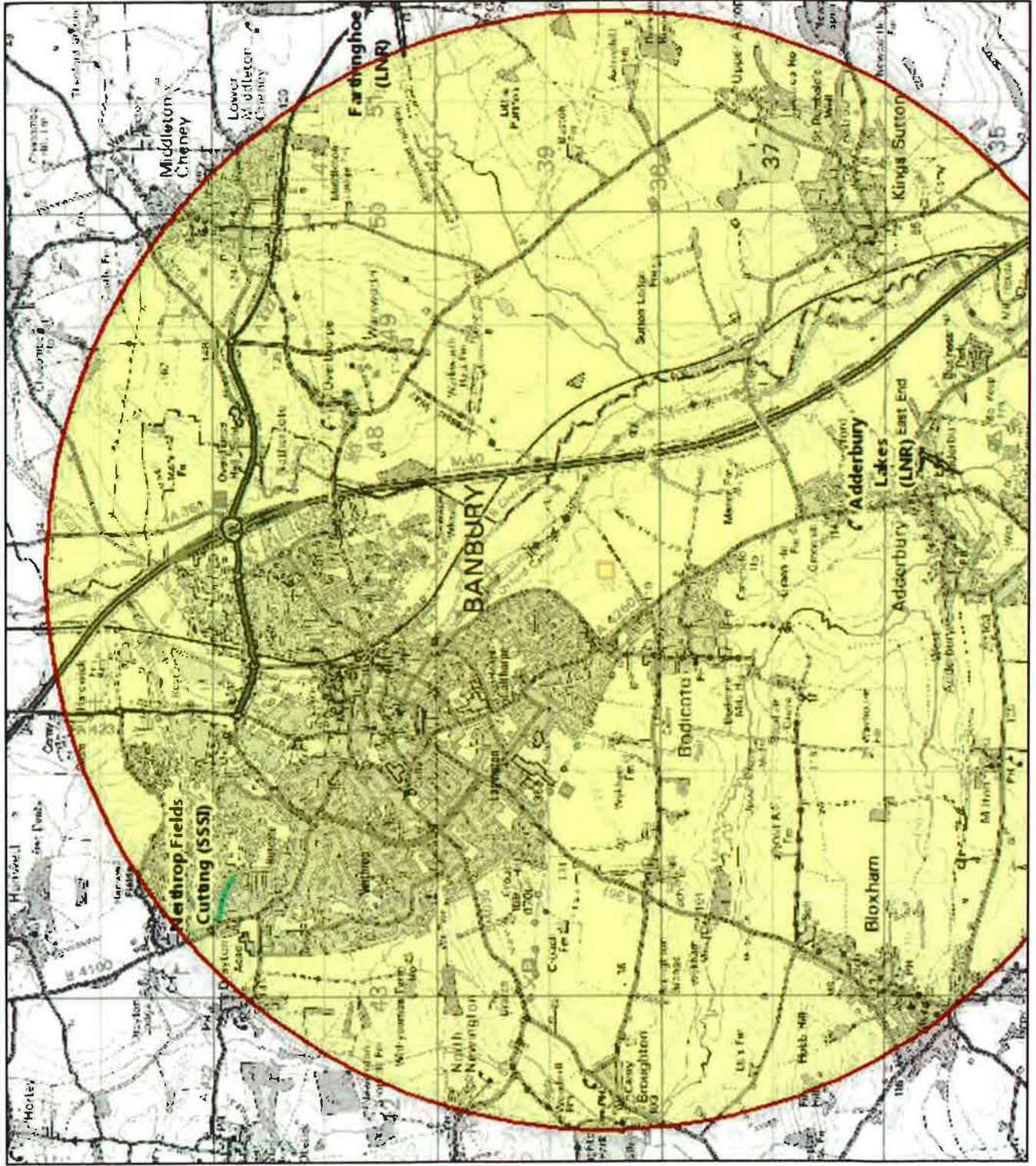
PHOTOGRAPH 8: Tree T8 - High Bat Potential (2a)



APPENDICES

APPENDIX 1

Information obtained from Multi-Agency Geographic Information for the Countryside (MAGIC) and Nature on the Map (Natural England) online databases



Legend

-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  Ramsar Sites (England)
-  Sites of Special Scientific Interest (England)
-  Special Areas of Conservation (England)
-  Special Protection Areas (England)

Projection = OSGB36
 xmin = 435100
 ymin = 233600
 xmax = 458300
 ymax = 245000

Map produced by MAGIC on 27 June, 2013.
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Local Nature Reserves (England) - points

Reference 1481439
Name ADDERBURY LAKES
Hectares 1.78
Hyperlink http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1481439

Local Nature Reserves (England)

Reference 1008893
Name FARTHINGHOE
Hectares 3.66
Hyperlink http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1008893

Reference 1481439
Name ADDERBURY LAKES
Hectares 1.78
Hyperlink http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1481439

Sites of Special Scientific Interest (England) - points

Name NEITHROP FIELDS CUTTING
Reference 1000768
Natural England Contact SARAH DAVEY
Natural England Phone Number 0845 600 3078
Hectares 1.24
Citation 1002934
Hyperlink http://www.sssi.naturalengland.org.uk/special/sssi/sssi_details.cfm?sssi_id=1002934

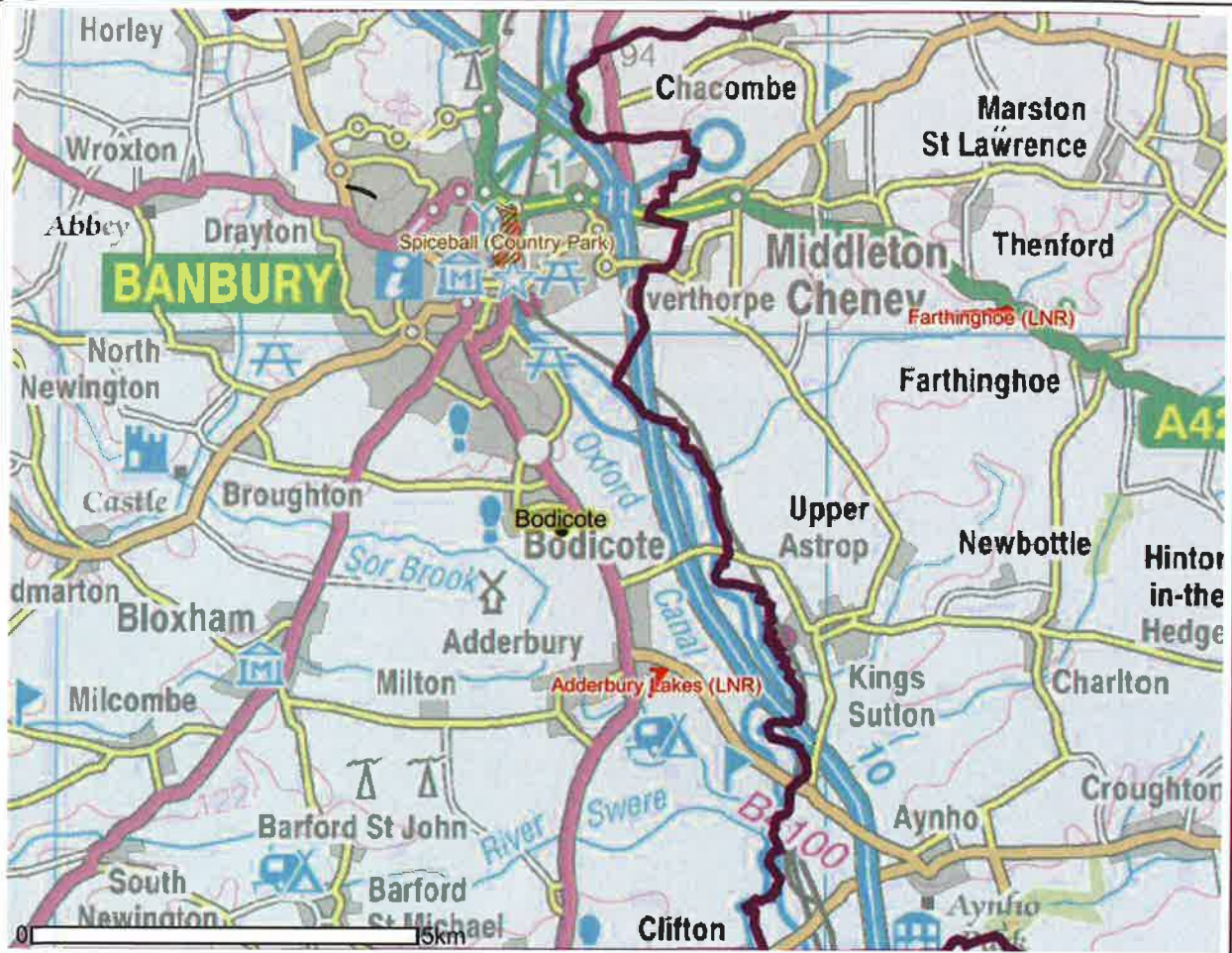
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Citation 1002934
Hyperlink http://www.sssi.naturalengland.org.uk/special/sssi/sssi_details.cfm?sssi_id=1002934



Nature on the Map

ECO3266 - sites



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- | | |
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| <ul style="list-style-type: none"> Natural England Offices National Nature Reserves Local Nature Reserves Country Parks Green Flag Country Park Non Green Flag Country Park Millennium Greens Doorstep Greens | <ul style="list-style-type: none"> Sites of Special Scientific Interest Natural England Regions Natural England Area Teams Scotland, Wales and Ireland Ordnance Survey background mapping England |
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APPENDIX 2

Hedgerow Descriptions

Hedgerow	Shrub Species	Trees	Size	Management	Features	Potential to qualify as 'Important' under Hedgerows Regulations 1997 Criteria
H1	Bramble, Dog Rose, Hawthorn, Sycamore, Ash, <i>Prunus</i> sp., Field Maple, Blackthorn, Holly, Dogwood, Wayfaring Tree and Elder	N/A	Approx. 3-4m high and 2m wide	Flailed	Located on slight bank with dry ditch, historically laid and gappy in places	Likely
H2	Elder, Ash, Hawthorn and Sycamore	Sycamore and Ash	Approx. 4-5m high and 2m wide	Flailed	Historically laid	Unlikely
H3	Elder, Hawthorn, Elm, Blackthorn, Bramble, Dogwood	N/A	Approx. 2-3m high and 1.5m wide	Flailed	Historically laid	Unlikely
H4	Elder and Hawthorn	Ash	Approx. 5m high and 2m wide	Overgrown	Historically laid	Unlikely
H5	Elder, Hawthorn, <i>Prunus</i> sp. and Holly	Ash and Sycamore	Approx. 2-3m high and 2m wide	Flailed	Historically laid and associated with a ditch	Unlikely
H6	Hawthorn, Bramble, Elder, Ash, Dogwood and Dog Rose	Ash and Sycamore	Approx. 4-5m high and 1.5m wide	Flailed	Historically laid, associated with a wet ditch and gappy in places	Unlikely
H7	Blackthorn, Hawthorn, Ash, Elm, Elder, <i>Prunus</i> sp., Bramble, Hazel, Field Maple, Willow and Dog Rose	Ash	Approx. 3-4m high and 2m wide	Overgrown	Located on slight bank with mostly dry ditch	Likely
H8	Elder, Dog Rose, Elm, Hawthorn and Bramble	N/A	Approx. 3m high and 2m wide	Overgrown	Located on slight bank with dry ditch	Unlikely
H9	Sycamore, Elder, Elm, Bramble, Hawthorn, Hazel and Ash	Ash and Sycamore	Approx. 2-3m high and 2m wide	Flailed	Historically laid	Unlikely
H10	Cherry, Leylandii, Lilac, Beech, Elder, Field Maple, Sycamore, Elm	Horse Chestnut, Birch	Approx. 2m high and 2m wide	Strimmed	Mixture of garden boundary hedges & trees	Unlikely
H11	Hawthorn, Sycamore, Elder, Elm, Field Maple, Wayfaring Tree, Ash, Dog Rose and Bramble	Oak	Approx. 2m high and 1-1.5m wide	Flailed	-	Likely
H12	Hawthorn, Sycamore, Elder, Elm, Field Maple, Wayfaring Tree, Ash and Dog Rose	N/A	Approx. 2m high and 1.5m wide	Flailed	-	Likely
H13	Elder, Hawthorn and Elm	Ash	Approx. 2-2.5m high and 1-1.5m wide	Flailed	Few small gaps	Unlikely
H14	Elder, Hawthorn, Field Maple, Elm and Bramble	N/A	Approx. 2m high and 1-1.5m wide	Flailed	-	Unlikely
H15	Hawthorn, Elder and Bramble	Ash	Approx. 2-4m high and 1m wide	Overgrown	Gappy in places	Unlikely
H16	Hawthorn, Cherry, Ash, Elm, Apple and Bramble	N/A	Approx. 2-4m high and 1-3m wide	Overgrown	Gappy in places and stream passes through	Unlikely
H17	Hawthorn, Elder, Ash, Apple, Field Maple, Privet, Hazel, <i>Prunus</i> sp.	Ash, Field Maple	Approx. 2.5m high and 2m wide	Flailed	Historically laid	Unlikely
H18	Hawthorn, Elder, Ash, Apple, Field Maple, Privet, Hazel	Alder	Approx. 6-8m high and 4m wide	Part flailed to 4m	-	Unlikely
H19	Elder, Hawthorn, Sycamore, Dog Rose, Blackthorn, Field Maple, Bramble, Wayfaring Tree, Ash, Hazel, Apple	Ash, Sycamore	Approx. 3-4m high and 2m wide	Flailed into V-shape at 2m	Gappy in places	Likely
H20	Elder, Hawthorn, Sycamore, Dog Rose, Blackthorn, Field Maple, Bramble, Wayfaring Tree, Ash, Hazel, Apple	Ash	Approx. 3-4m high and 2m wide	Flailed into V-shape at 2m	Historically laid	Likely
H21	Ash, Cherry, Elder, Hawthorn, Sycamore, Field Maple, Dog Rose, Blackthorn, Oak	Ash, Cherry	Approx. 2-3m high and 3-4m wide	Roughly box-cut	Double-planted	Unlikely
H22	Blackthorn	N/A	Approx. 2-3m high and 2m wide	Flailed	Short remnant section (<15m)	Unlikely
H23	Ash, Blackthorn, Dog Rose, Hawthorn, Oak	Oak	Approx. 3-4m high and 2-3m wide	Flailed	Dry ditch, occasional gaps	Unlikely
H24	Garden Privet, Leylandii, Field Maple, Ash, Bramble, Snowberry, Elder	N/A	Approx. 2m high and 1.5m wide	Box cut	Garden hedge	Unlikely
H25	Field Maple, <i>Prunus</i> sp. and Bramble	Ash and Sycamore	Approx. 5m high and 2m wide	Flailed	-	Unlikely
H26	Blackthorn, Ash, Hawthorn, Field Maple, Dog Rose and Elm	N/A	Approx. 2-3m high and 2m wide	Flailed	Historically laid	Unlikely
H27	Blackthorn, Hawthorn, Elder and Field Maple	N/A	Approx. 2m high and 2m wide	Flailed	Historically laid	Unlikely
H28	Hawthorn, Ash, Hazel, Sycamore, Elder, White Willow and Field Maple	N/A	Approx. 2m high and 2m wide	Flailed	Historically laid	Unlikely
H29	Elder, Hawthorn and Bramble	N/A	Approx. 2m high and 1.5m wide	Flailed	Historically laid	Unlikely

APPENDIX 3

Bat Box Specifications

Bat Boxes

Schwegler bat boxes are made from 'woodcrete' and have the highest rates of occupation of all types of box.

The 75% wood sawdust, clay and concrete mixture is ideal, being durable whilst allowing natural respiration and temperature stability. These boxes are rot and predator proof and extremely long lasting.

Boxes can be hung from a branch near the tree trunk or fixed using 'tree-friendly' aluminum nails.



2FN Bat Box

A large bat box featuring a wide access slit at the base as well as an access hole on the underside. Particularly successful in attracting Noctule and Bechstein's bats.

Woodcrete construction, 16cm diameter, height 36cm.

1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)

Width: 27cm

Height: 43cm

Weight: 7.3kg



