

Land North of Stratford Rd,
Alkerton

Preliminary Ecological Appraisal
Report (PEAR)



Client:

ATE Farms

Report Reference:

RSE_7142_R1_V1_PEAR

Issue Date:

October 2023

PROJECT

Client: ATE Farms

Project: Land North of Stratford Rd, Alkerton

Reference RSE_7142_R1_V1_PEAR

Report Title Preliminary Ecological Appraisal Report

DOCUMENT CONTROL

Originated:	Lauren Bragg BSc (Hons) QUALCIEEM	Graduate Ecologist	22/09/2023
Technical Reviewed:	Abbie Marshall BSc (Hons) QUALCIEEM	Senior Ecologist	09/10/2023
Approved for Issue:	Nick Sanderson BSc MSc CEcol MCIEEM	Director	19/10/23
Issued:	Abbie Marshall BSc (Hons) QUALCIEEM	Senior Ecologist	28/10/2023

Revisions:

East Midlands | West Midlands | Yorkshire

☎ 0115 930 2493 | 📧 @rammsanderson | 📧 info@rammsanderson.com | 🌐 rammsanderson.com

DISCLOSURE:

The information provided within this report has been prepared and provided as true and in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. It is intended for the sole use of the Client and their agents in accordance with the agreement under which our services were performed. Unauthorised communication, reproduction or usage of this report by any party other than the aforementioned is prohibited. No warranty, express or implied, is made as to the advice in this report or any other service provided by RammSanderson Ecology Ltd. This report has been prepared by an ecological specialist and does not purport to provide legal advice. RammSanderson is a trading name of RammSanderson Ecology Limited, as registered in England & Wales (Company No.: 8999992).



EXECUTIVE SUMMARY

- i RammSanderson Ecology Ltd were commissioned by ATE Farms to undertake a Preliminary Ecological Appraisal to assess the potential ecological constraints of the proposed development of fishing lakes (hereafter referred to as the Scheme), located to the land north of Stratford Rd, Alkerton.
- ii The land within the Scheme Boundary (hereafter referred to as the Site) is 16.2 ha in size and comprised of largely arable land, bounded by native species rich hedgerows and broadleaved woodland. There is an area of semi-improved grassland north within the Site, as well as scattered areas of scrub and tall ruderal vegetation.

Ecological Feature	Potential to be affected by the Scheme	Further Surveys, Assessment or Mitigation Recommended?
Designated Sites	Balscote Quarry LWS, located 0.4km SE from the Site, is designated for its notable bird species. The broadleaved woodland, hedgerows, and dense scrub on Site provide connectivity to the LWS, as well as foraging and nesting opportunities.	Broadleaved woodland, hedgerow and dense scrub are recommended to be retained where possible.
Habitats	<p>Hedgerows were present along the eastern and northern boundaries of the Site. All native hedgerows are listed under the NERC Act 2006 and are therefore a consideration of planning. Broadleaved woodland identified on Site provides suitable habitat for species such as bats, badger nesting birds and other principal species. Individual tree removal may be required to facilitate proposals.</p> <p>Risk of accidental pollution and potential damage to retained and adjacent habitats ((particularly woodland, trees and hedgerows) during the construction phase.</p>	<p>Maintain Root Protection Zones of retained trees, woodland and hedgerows.</p> <p>Individual trees to be lost are recommended to be replaced at a ratio of 2:1.</p> <p>Adhere to Pollution Prevention Guidance: PP5G5 (Environment Agency, 2013), Implement dust suppression techniques during construction works to prevent accidental pollution of onsite and adjacent habitats.</p>
Bats	<p>The broadleaved trees, woodland and hedgerow onsite have the potential to support roosting and foraging bats. Ground Level Tree Assessment (GLTA) is required on targeted trees should they be removed to facilitate works.</p> <p>Additionally, a sensitive lighting strategy is recommended to minimise the disturbance to foraging bats.</p>	Ground Level Tree Assessments (GLTA) will be required on targeted trees should they require removal or pruning works. This can be undertaken at any time of year.

Ecological Feature	Potential to be affected by the Scheme	Further Surveys, Assessment or Mitigation Recommended?
		Sensitive lighting strategy outlined in the Bats and Lighting in the UK (BCT and ILP, 2018).
Hazel Dormouse	No – Unlikely to be present on Site as there are no known populations within the vicinity of the Site.	No further survey is required.
Otter and Water Vole	No - The waterbody plan shows S1 is beyond 100m from the development Site, which is beyond the zone of influence for otter and water vole.	No further survey is required.
Great Crested Newt	Yes – waterbodies and ditches identified within 500m of the Survey Area which are well connected to the Site	Further Survey - Habitat Suitability Index Assessment (HSI) and e-DNA surveys are recommended for P1, P2, P3, P7 and D2. HSI's may be carried out at any time of year and e-DNA surveys may be carried out between April and mid-June.
Reptiles	The majority of the Site is of limited value to reptiles, predominantly comprising arable land, although the poor semi-improved grassland and rocky outcrop habitat provide suitable habitat for reptiles.	Vegetation clearance to be conducted under a Precautionary Method of Works.
Birds	Yes – Woodland and hedgerow within the Site boundary provide suitable habitat for breeding and wintering bird species. Furthermore, these habitats provide connectivity to Balscote Quarry LWS that is designated for notable bird species is located 0.4km SE from the Site.	Four breeding bird surveys would be undertaken monthly between April and July (including one evening/nocturnal visit). Further consultation with the local planning authority is recommended to determine whether further wintering surveys would be required.
Terrestrial Invertebrates	The semi-improved grassland offers sub-optimal habitat for terrestrial invertebrates. No larval food plants were identified for any NERC or Schedule 5 invertebrate species on Site. The habitat on Site is unlikely a core habitat,	No further survey is required
Aquatic Invertebrates	No suitable habitats were present on Site.	No further survey is required.
Fish	No suitable habitats were identified within the Survey Area.	No further survey is required.
Other Notable Species	There is potential refuge and foraging habitat for hedgehog, fox, and brown hare within areas of woodland, hedgerows and scrub present on Site.	Follow precautionary method of works detailed in a CEMP/PMW document during vegetation clearance.

- i Biodiversity Impact Assessment (BIA) calculations will be provided upon receipt of a finalised layout. The metric will be issued separately, and this report will be updated once results are available. Section 4 of this report details some suggested enhancements for the site. More specific enhancement recommendations will be detailed with full calculations.

CONTENTS

EXECUTIVE SUMMARY	3
1 INTRODUCTION	7
2 BASELINE CONDITIONS, CONSTRAINTS AND RECOMMENDATIONS	10
3 BIODIVERSITY IMPACT ASSESSMENT	27
4 OPPORTUNITIES FOR ENHANCEMENTS	28
5 CONCLUSION	31
6 FIGURES	33
7 REFERENCES	34

FIGURES

FIGURE 1. SITE CONTEXT AND LOCATION PLAN	9
FIGURE 2. PHASE 1 HABITAT PLAN	13
FIGURE 3. PHOTOGRAPH OF A LARGE MAMMAL HOLE (TN2)	19
FIGURE 4. PHOTOGRAPH OF ROCKY OUTCROP HABITAT	23

TABLES

TABLE 1. DESIGNATED SITES WITHIN STUDY AREA	10
TABLE 2. NOTABLE HABITATS AND PROTECTED AND NOTABLE FLORA WITHIN STUDY AREA	11
TABLE 3: HABITATS WITHIN SURVEY AREA	14

APPENDICES

APPENDIX 1: CLIENT PROPOSALS.....	34
APPENDIX 2: RELEVANT LEGISLATION AND PLANNING POLICY	41
APPENDIX 3: METHODOLOGY	40

1 INTRODUCTION

1.1 Terms of Reference

- i RammSanderson Ecology Ltd (RS) were commissioned by ATE Farms to undertake a Preliminary Ecological Appraisal (PEA) to assess the potential ecological constraints of the proposed development comprising fishing lakes (hereafter referred to as the Scheme), located to the land north of Stratford Rd, Alkerton. All land situated within the red line of the Scheme is hereafter referred to as the Site and is shown on Figure 1.
- ii The PEA has been undertaken with reference to current good practice¹ and forms part of the technical information commissioned by ATE Farms in connection with the Scheme. The results of the PEA are presented in this PEA report (PEAR), which addresses relevant wildlife legislation and planning policy as summarised in Appendix 1. The PEAR is consistent with the requirements of British Standard 42020:2013 *Biodiversity. Code of Practice for Planning and Development*.
- iii This PEAR is intended for advice in respect of Scheme design, site layout and / or site investigation. Further ecological surveys and / or ecological impact assessment (including detailed mitigation measures) may be required in connection with a planning application or to contribute to an Environmental Impact Assessment once the Scheme proposals have been finalised and any required surveys have been completed.

1.2 The Scheme

- i The Scheme involves the development of fishing lakes with intended leisure use.

1.3 The Site

- i The Site is located to the north of Stratford Road (A422), Alkerton at Ordnance Survey national grid reference SP 38870 43322 and is approximately 16.2 ha in size.
- ii The Site comprises predominantly of arable land with areas of grassland, tall ruderal vegetation, hedgerows, and broadleaved woodland. The Site is bounded by the A422, and the wider area consists of arable land and areas of woodland. Additionally, Wroxton MX motorcycle track is located to the north of the Site.

1.4 Scope of the Preliminary Ecological Appraisal

- i This PEAR presents ecological information obtained during the following:
 - A desk-study undertaken on 25/09/2023 to obtain records of designated sites, notable habitats² and protected and notable species³ up to 2km of the Site (the area covered by the desk study is hereafter referred to as the Study Area); and,
 - A walkover survey of accessible land within the Site on 10th August 2023.
- ii The Study Area and Survey Area are shown on Figure 1.
- iii The purpose of the PEAR is to provide a high-level ecological appraisal of the Site, specifically to:

¹CIEEM (2017). Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

² Notable habitats are taken as principal habitats for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; habitats listed under the Cherwell Biodiversity Action Plan (BAP); hedgerows identified as being 'important' under the wildlife criteria of the Hedgerow Regulations 1997, ancient woodlands and veteran trees.

³ Notable species are taken as principal species for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; any species listed in an IUCN Red Data Book; and any other species listed under the Cherwell BAP.



438400 438500 438600 438700 438800 438900 439000 439100

243700
243600
243500
243400
243300
243200
243100



RammSanderson		
Title: Site Context Plan		
Project: Land North of Stratford Rd, Alkerton OX15 6HX		
Client: ATE Farms		
Date: 26/09/2023	Fig:	Author: NO
A4 Scale: 1:3500	ID: RSE_7142_STC_0923_V1R1	

- establish baseline conditions and determine the presence of Important Ecological Features (IEF)⁴ (or those that could be present), as far as is possible;
 - to identify potential ecological constraints to the Scheme and make initial recommendations to avoid impacts on IEFs, where possible;
 - to identify requirements for mitigation, where possible, including mitigation measures that will be required and those that may be required (depending on results of further surveys or final scheme design);
 - to establish any requirements for more detailed surveys; and,
 - to identify any opportunities offered by the Scheme to deliver biodiversity enhancements.
- iv The methodology followed for undertaking the desk study and field surveys is detailed in Appendix 2.

⁴ Important Ecological Features are habitats, species, ecosystems and their functions and processes that are of conservation importance and could potentially be affected by the Scheme.

2 BASELINE CONDITIONS, CONSTRAINTS AND RECOMMENDATIONS

2.1 Surveyor Competence

- i The walkover survey was led by George Hicks, whom has been a professional ecologist for 5 years and has the required competencies to undertake this type of survey.

2.2 Limitations to the Assessment

- i General limitations to undertaking desk and field-based assessments are provided in Appendix 2. No specific limitations were identified.

2.3 Designated Sites

2.3.1 Desk Study

- i Table 1 summarises the designated sites situated within the Study Area.

Table 1. Designated Sites within Study Area

Site Name	Designation	Location ⁵	Brief Description
Balscote Quarry	LWS, Local Geological Site	0.4km SE	This site is partly semi-improved neutral grassland and part disused ironstone quarry. The lowest part of the site has permanent water, with substantial areas of seasonal water. Interesting species include grass vetchling. The site is important for its birds.
Horley	LWS	2km E	Horley is a complex site consisting of a disused railway with rough grassland, woodland, and scrub habitats. The land to the north also includes areas of lowland meadow, an area of fen and some wet flushes, as well as a series of ponds.
Field North of Shennington	Proposed LWS	1.4km W	A single field on an east-facing bank of the Cotswold Hills. It is a species-rich neutral to slightly acid grassland, grazed by cattle.
Starveall Barn Quarry (West)	Oxfordshire Local Geological Site	1.7km NW	Active Quarry
Horton Acid Pasture	Proposed DWS	0.5km NW	Steep-sloping grassland on the ironstone, which is a slightly acid, unimproved, species-rich pasture.
Bank South of Alkerton	Proposed DWS	1.3km SW	This site is a bank with calcareous grassland. The boundaries have hedges and there is a wider strip of shrubs with some trees to the west.
Marsh South of Alkerton	Proposed DWS	1.4km SW	Originally identified as a small area of reedbed. Brief scoping from rights of way in 2022 found the site to include rough grassland, a small area of wetland, a wooded watercourse, and an area of swamp vegetation.

⁵ Where designated sites are situated outside of the Site boundary, the distance and direction is given at the closest point of the designated site from the Site

Site Name	Designation	Location ⁵	Brief Description
Northern Valleys	Conservation target Area	Closest point 50m north of Site	The valleys of the Sor Brook and North Newington Stream. Surrounds the site on all sides except to NW and SE.

2.3.2 Field Survey

- i Summary descriptions of the designated sites within the Survey Area are provided below above in Table 1. Reference to the habitats within the designated site(s) are provided in Section 2.4.

2.3.3 Constraints and Recommendations

- i The Site does not fall within categories of any Impact Risk Zones (IRZs) to nearby statutory sites. As such, no further investigation is required for this aspect.
- ii No other statutory designated sites were identified within a 2km radius of the Site boundary; therefore no further mitigation is currently recommended.
- iii Three non-statutory designated Sites were identified within a 2km radius of the Site Boundary. These include three Local Wildlife Sites (LWS): Balscote Quarry, Horley, and the Field North of Shennington. Balscote Quarry (located 0.4km southeast from the Site) is designated for notable bird species, Horley (located 2km E from the Site) is designated for its complex mixture of habitats, and the proposed Field North of Shennington LWS (located 1.4km W from the Site) is designated for its slightly acid grassland. It is understood that proposals will be non-residential therefore there is not considered to be a risk of increased footfall to these sites. However, as Balscote Quarry is designated for its notable bird species, as well as being in close proximity to the Site, it is recommended that the broadleaved woodland, hedgerows, and dense scrub are retained on Site where possible as those habitats provide foraging and nesting opportunities for these notable bird species. Although there will be a loss of arable field of value to wintering bird species, this is not considered to be significant due to the abundance of this habitat within the local landscape.

2.3.4 Desk Study

- iv Table 2 summarises the records of notable habitats and protected or notable flora⁶ (including veteran trees⁷) within the Study Area.

Table 2. Notable Habitats and Protected and Notable Flora within Study Area

Habitat/ Flora Feature	Reason for Conservation Interest	Location ⁸
Deciduous Woodland	Priority Habitat	Closest 0.1km S; 46 additional parcels to the N, S, E, W
Open Mosaic	Priority Habitat, LBAP	0.2km W

⁶ For this assessment 'flora' includes vascular and non-vascular plants, fungi and lichens.

⁷ For this assessment the definition of a veteran tree is taken from Annex 2 of the National Planning Policy Framework (glossary): "A tree which, because of its great age, size or condition is of exceptional value for wildlife, in the landscape, or culturally."

⁸ Where features are situated outside of the Site boundary, the distance and direction is given at the closest point of the designated site from the Site

Habitat/ Flora Feature	Reason for Conservation Interest	Location ⁸
Traditional Orchard	Priority Habitat, LBAP	Closest 0.3km NW; 12 additional parcels
Clean Water for Wildlife Pond	Priority Habitat, LBAP	0.4km S
Open Mosaic	Priority Habitat, LBAP	0.4km SW
No main habitat but additional habitats present	Priority Habitat, LBAP	1.3km S
Wood-pasture and Parkland	Priority Habitat, LBAP	1.5km NW
Open Mosaic	Priority Habitat, LBAP	1.5km NW

2.3.5 Field Survey

- i Summary descriptions of the habitats within the Survey Area are provided below in Table 3 and shown on Figure 2, with specific features highlighted by TNs.
- ii Habitat types detailed are listed in order of the Phase 1 Habitat Survey Handbook (Joint Nature Conservation Committee, 2010). The species list provided in this report reflect only those taxa observed during the survey and are not an exhaustive list of all species that may be present, as the survey only provides a snapshot of the Site.



Key

- Site Boundary □
- A1.1.1 - Broadleaved woodland - semi-natural ■
- A2.1 - Scrub - dense/continuous ▣
- B6 - Poor semi-improved grassland ▤
- C3.1 - Other tall herb and fern - ruderal ▥
- I1.2.2 - Scree - basic ▦
- J1.1 - Cultivated/disturbed land - arable ▧
- J2.1.2 - Intact hedge - species-poor ▨
- TN - Target Note ○
- TN1 - Skylark seen
- TN2 - Single mammal hole. Looks partially active


P1 Code	Area	Percentage of area
A2.1	551.04	0.34
C3.1	400.48	0.25
A1.1.1	5854.85	3.62
B6	47558.94	29.44
I1.2.2	116.07	0.07
J1.1	107040.74	66.27



P1 Code	Length
J2.1.2	665



Boundary Area (m2)
161522.12


Title: Phase 1 Habitat Plan	
Project: Land North of Stratford Rd, Alkerton OX15 6HX	
Client: ATE Farms	
Date: 18/10/2023	Fig: Author: NO
A4 Scale: 1:3500	ID: RSE_7142_PH1_0923_V1R1

Table 3: Habitats within Survey Area

Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
<p>A1.1.1 Broadleaved woodland – semi-natural</p>	<p>A small area of broadleaved woodland was located within the southwest corner of the Site. This was dominated by ash (<i>Fraxinus excelsior</i>) with frequent hawthorn (<i>Crataegus monogyna</i>) and occasionally occurring goat willow (<i>Salix caprea</i>) and sycamore (<i>Acer pseudoplatanus</i>). Plum (<i>Prunus domestica</i>) was noted rarely within the woodland. The understory contained bramble (<i>Rubus fruticosus</i> agg.), blackthorn (<i>Prunus spinosa</i>), ground ivy (<i>Glechoma hederacea</i>) and holly (<i>Ilex aquifolium</i>).</p> <p>Additionally, rocky outcrop area was target noted in the south-west corner of the site amongst the woodland area.</p>	5854.85	3.62	Ecologically valuable. To be retained within the current proposals.	

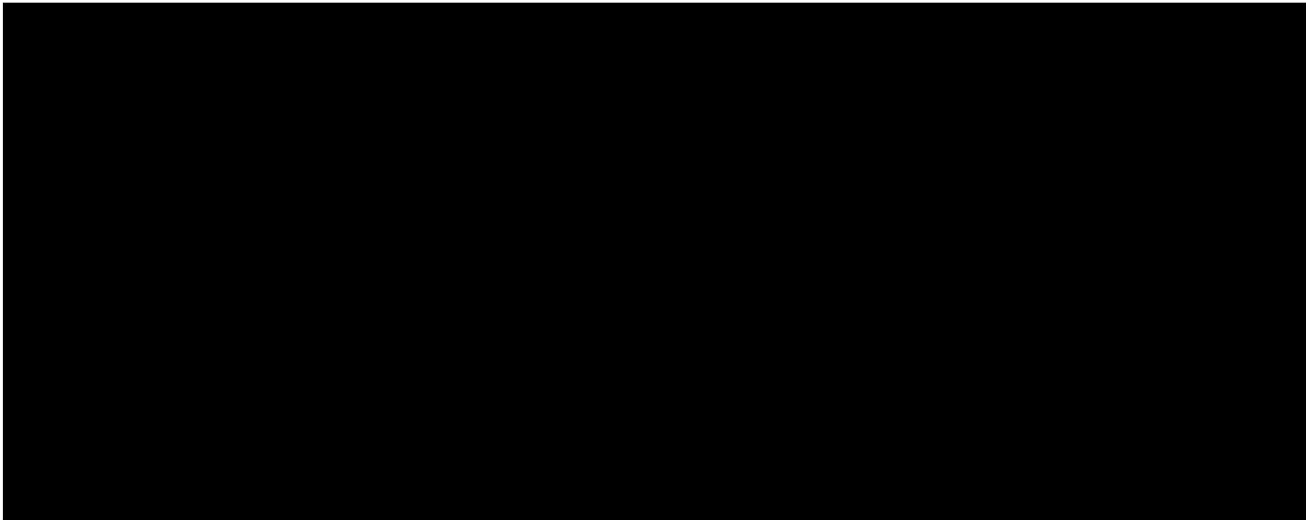
Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
A2.1 Dense scrub	A small area of dense bramble scrub was located to the south of the Site. Another small patch of scrub is located to the west of the Site next to a gate. It is dominated by bramble with abundant nettle (<i>Urtica dioica</i>), frequent broad-leaved dock (<i>Rumex obtusifolius</i>) and hogweed (<i>Heracleum sphondylium</i>) and occasional ragwort (<i>Jacobaea vulgaris</i>) and willowherb (<i>Epilobium sp.</i>).	551.04	0.34	Limited ecological value. Temporary disturbance within current proposals.	
B6 Poor semi-improved grassland	A semi-improved grassland is located west within the site. It is abundant in broadleaved dock, false-oat grass (<i>Arrhenatherum elatius</i>) and white clover (<i>Trifolium repens</i>) with frequent ragwort, brome grass (<i>Bromus sp.</i>), Yorkshire fog (<i>Holcus lanatus</i>) and creeping thistle (<i>Cirsium arvense</i>). There was occasionally greater plantain (<i>Plantago major</i>), hairy vetch (<i>Vicia villosa</i>) and bird's-foot trefoil (<i>Lotus corniculatus</i>)	47558.94	29.44	Limited ecological value. Temporary disturbance within current proposals.	

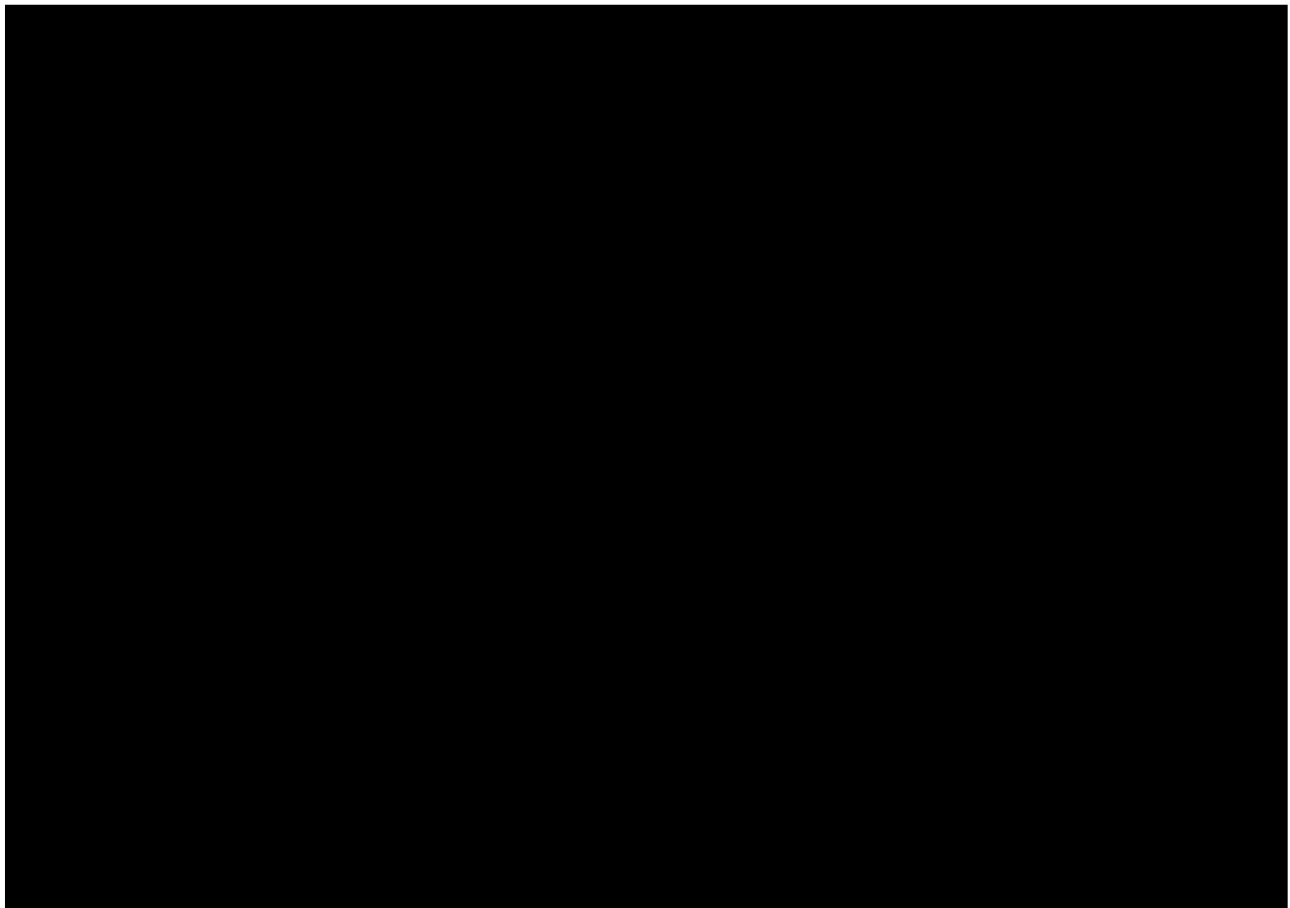
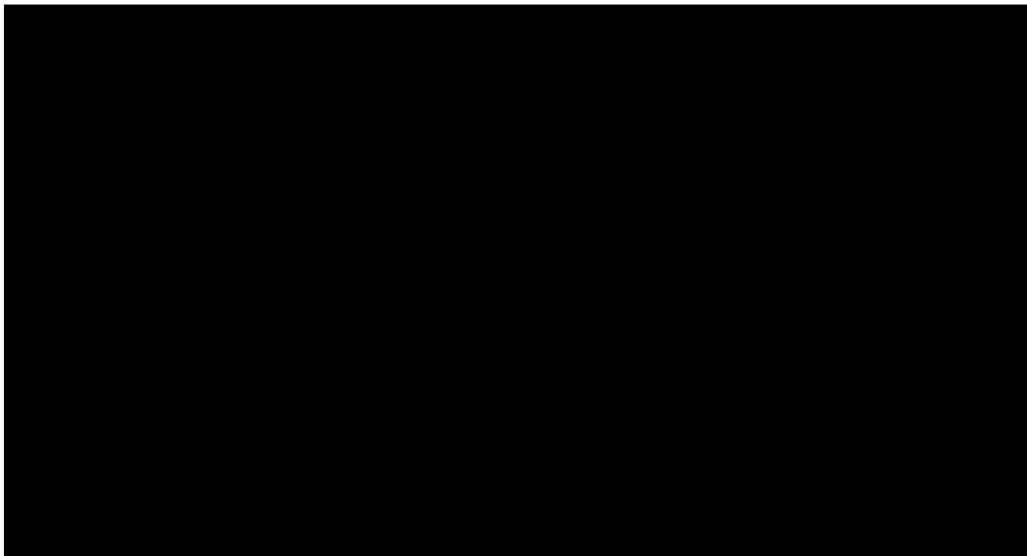
Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
<p>C3.1 Tall ruderal</p>	<p>Three small patches of tall ruderal are located across the Site. The western most patch is dominated by nettle, great willowherb (<i>Epilobium hirsutum</i>) and large bindweed (<i>Calystegia sepium</i>) with rare amounts of bramble. The patch in the western field was dominated by willowherb with frequent cleavers (<i>Galium aparine</i>) and occasional broad-leaved dock. The last patch was in the eastern field and was dominated with creeping thistle.</p>	<p>400.48</p>	<p>0.25</p>	<p>Limited ecological value. Temporary disturbance within current proposals.</p>	
<p>J1.1 Arable grassland</p>	<p>A harvested crop field is located to the east of the Site and take up a large majority. Additionally, a mammal hole was noted on the eastern edge of the arable land, as well as skylark sightings.</p>	<p>107040.74</p>	<p>66.27</p>	<p>Limited ecological value. To be lost to facilitate proposals.</p>	

Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
<p>J2.1.2 Intact species-poor hedgerow</p>	<p>Two hedgerows were located bordering the eastern aspect of the Site. H1 was dominated by hawthorn with occasional ash and elder (<i>Sambucus nigra</i>). The understory had abundant nettle and frequent bramble. H2 was dominated by hawthorn with occasional blackthorn and elder. The understory had abundant nettle and frequent bramble.</p>	<p>H1 – 341m in length. H2 – 324m in length.</p>	<p>N/A</p>	<p>Ecologically valuable. To be retained within current proposals.</p>	

2.3.1 Constraints and Recommendations

- i Two native species-rich intact hedgerows are located on the northern and eastern Site boundaries. All hedgerows comprising >80% native species qualify as a Habitat of Principal Importance and are therefore a material consideration within planning; however, removal works of <10m removal are anticipated to facilitate an access track for the development (See appendix 7). It is recommended that the trees and hedgerows on site are retained where possible. Where these habitats are retained, the root protection areas should be adhered to, with protective fencing where necessary.
- ii Trees are generally of high ecological value and provide potential habitat for species such as nesting birds, roosting bats, and invertebrates. The broadleaved woodland on Site also provides connectivity between surrounding deciduous woodlands which are priority woodland habitats. It is recommended that for every one tree that is lost, it should be replaced by at least two newly planted native trees.
- iii The remaining terrestrial habitats on site were generally of limited botanical interest and poor species diversity, with the majority habitat being arable land. The value of habitats such as the poor semi-improved grassland and dense scrub was largely noted for its potential to support a range of protected / Priority faunal species rather than for their botanical value. The loss of this scrub and grassland habitat to facilitate the development will not be detrimental to local biodiversity, but it is recommended that it is retained where possible or replaced with native species planting elsewhere as part of the Scheme.
- iv It is recommended that dust suppression techniques are utilised during the construction phase and that Pollution Prevention Guidance PPG5 is adhered to, in order to reduce the risk of accidental pollution to onsite retained habitats, and adjacent offsite habitats.





2.5 Bats

2.5.1 Desk Study

- i There are 22 recent records of bats within the Study Area. The closest/ most relevant of these records is associated with common pipistrelle 1.17km east from the Site, Natterers' bat 1.45km south from the Site, and brown long-eared bat 1.44km southwest from the Site.

2.5.2 Field Survey

- i The broadleaved woodland identified on Site could offer roosting potential for bats. Furthermore, the linear features identified on Site such as the hedgerows, woodland, and tree line, offer foraging habitat for bats as well as the open space semi-improved grassland. No buildings were present on Site.

2.5.3 Constraints and Recommendations

- ii A Ground Level Tree Assessment (GLTA) was beyond the scope of this preliminary survey, although the scattered trees and woodland within the Site boundary provide opportunities for roosting bats.
- iii It is recommended that trees are retained onsite where possible. Current planning proposals (see appendix 1) suggest that individual trees may be removed to facilitate access. Where targeted tree removal or pruning works are required, further GLTA will be required in order to assess their potential to support roosting bats. Should any trees assessed as having 'low' bat roost potential require removal, this should be done so utilising a soft felling technique under supervision of a bat licenced ecologist. In the event trees identified as being of 'moderate' or 'high' bat roosting potential are to be impacted, further aerial tree assessments or nocturnal emergence surveys will be required. Aerial tree climbs can be completed between May and September.
- iv Furthermore, the hedgerows and woodland habitats will be retained, with only small sections of woodland being lost to facilitate access. As such further survey of the site for bat foraging is considered entirely unnecessary and disproportionate. However, efforts should be made within the proposals to minimise effects of lighting on the adjacent linear features. Additionally, the proposed fishing lakes also have the potential to increase the value of the site for foraging bats. The new footpaths and fishing areas should consider the use of lighting and where possible avoid altogether. If avoidance is not possible (which is probable for this location owing to public health and safety), light spill onto the hedgerows and woodland should be minimised and should follow the guidance set out in Bats and Lighting in the UK (BCT and ILP, 2018). Therefore, associated site lighting proposals must consider the following:
 - Avoid lighting where possible;
 - Install lamps and the lowest permissible density;
 - Lamps should be positioned to direct light to avoid upward spill onto any green corridors that could be used by commuting bats or features with bat roost potential;
 - LED lighting – with no/low UV component is recommended;
 - Lights with a warm colour temperature – 3000K or 2700K have significantly less impact on bats;
 - Light sources that peak higher than 550nm also reduce impacts to bats; and the use of timers and dimmers to avoid lighting areas of the site all night is recommended.

2.6 Hazel Dormouse

2.6.1 Desk Study

- i There were no records of hazel dormouse within the Study Area, within 2km of the Site boundary.

2.6.2 Field Survey

- i A total of two hedgerows were identified on Site which bounded largely arable fields and poor semi-unimproved grassland. The woodland on Site offered sub-optimal refuge opportunities.

2.6.3 Constraints and Recommendations

- i Although the site is within the range of hazel dormouse, the distribution of dormouse is known in Oxfordshire none of these known sites are within proximity of the development Site with the majority located in the southeast county of Oxfordshire (Thames Valley Records Centre, 2019).

- ii Due to the absence of dormouse records within the search radius and a lack of connectivity to any large blocks of woodland that sustain a population, Dormouse are considered highly unlikely to be present or affected by works. Therefore, further survey is deemed unnecessary and disproportionate.

2.7 Otter and Water Vole

2.7.1 Desk Study

- i There were no records of otter and water vole returned from the desk study within the Study Area, approximately 2km from the Site boundary.
- ii There is a stream, Ragnell Bottom Brook, within 500m north of the Site.

2.7.2 Field Survey

- i There were no suitable habitats for otter or water vole present on Site.

2.7.3 Constraints and Recommendations

- i The habitat on Site does not offer suitability for otter and water vole and there is an absence of otter and water vole records within a 2km radius of the Site.
- ii There is a watercourse (S1, see figure 5) within 500m of the Site, however this is beyond the 100m Zone of Influence.
- iii Given these factors, it is highly unlikely that these species will be impacted by development therefore further survey is deemed unnecessary and disproportionate.

2.8 Great Crested Newt

2.8.1 Desk Study

- i There were zero records of great crested newt returned from the desk study, within the Study Area, approximately 2km from the Site boundary.
- ii A total of 10 water bodies are present within 500m of the Site. One of the water bodies (S1) has been screened out of further assessment because it is a flowing watercourse unsuitable for great crested newts⁹. A total of four further water bodies (D4, P4, P5 and P6) are screened out of requiring further assessment as there are major barriers¹⁰ to great crested newt movement between the water body and the Site (See Figure 5).

2.8.2 Field Survey

- i There are no waterbodies present within the Site boundary, although the grassland, scrub, hedgerows, and woodland provide opportunities for terrestrial phase amphibians. Furthermore, the Site has terrestrial connectivity to P1, P2, P3, P7 and D2 (see figure 5)

⁹ Great crested newts do not generally like running water, though they will inhabit very slow-flowing watercourses such as backwaters, ditches and canals.

¹⁰ The following constitute major barriers to dispersal and are unlikely to be traversed by great crested newts: rivers and larger brooks; main roads such as A-roads, motorways or any other road with high traffic volume (i.e. high traffic volume during the night when great crested newt are more likely to be dispersing/commuting); and major urban infrastructure including extensive areas of hardstanding and buildings and dense networks of minor roads with little green space.

2.8.3 Constraints and Recommendations

- i Although there are no waterbodies within the Site boundary, P1, P2, P3, P4 and D2 fall within the 250m zone of influence and have connectivity to the site in the form of woodland and hedgerows. Furthermore, the dense scrub, grassland, woodland, and hedgerows onsite provide opportunities for terrestrial phase amphibians. Therefore, potential for injury, disturbance and killing of GCN cannot be ruled out.
- ii It is therefore recommended that further Habitat Suitability Index Assessments (HSI), and where found to be suitable, further e-DNA surveys are undertaken on P1-P4 and D2 to determine presence/likely absence of GCN and inform the requirement for further survey work or mitigation. HSI's may be carried out at any time of year and e-DNA surveys may be carried out between 15th April and 30th June.

2.9 Common Species of Reptile

- i 'Common species of reptile' refers to common lizard, slow worm, adder, and grass snake. The Site is located outside of the known range of smooth snake and sand lizard and these species are not considered in this report.

2.9.2 Desk Study

- ii There were zero recent records of common lizard, slow worm, adder and grass snake within the Study Area.

2.9.3 Field Survey

- iii The Site contains suitable habitats for all common reptiles. Woodlands and open fields provide areas to hunt prey and bask. At the most south-eastern corner was a rocky outcrop (see figure 3), this would provide additional basking or shelter for reptiles.

2.9.4 Constraints and Recommendations

- i There are no recent records of common reptile species within the search radius. The majority of the Site is considered of limited value for reptiles, largely dominated by arable land, although the parcels of grassland and tall ruderal vegetation offer opportunities for foraging and commuting. Additionally, the rocky outcrop provides opportunities for refuge seeking. Furthermore, the Site has connectivity to further suitable habitats to the north and northeast via the hedgerows.
- ii As proposals are to predominantly impact habitat of limited value for reptiles (arable land) with localised impacts to the woodland to facilitate access, and temporary impacts to the grassland, further surveys are considered disproportionate. Furthermore, there is potential for the overall Site to increase in value for reptile species following works. However, as there are suitable habitats onsite and connectivity to the wider environment, there is potential for transient reptiles to be present onsite during works.
- iii It recommended that vegetation clearance should be undertaken following a precautionary method of works. Where vegetation clearance on the site is required, works should be conducted in temperatures above 11 °C ideally in the late morning to afternoon when reptiles are most active. The habitats should first be cut to a height of 15-20cm by a hand tool such as brush cutter, progressing at walking pace only. The area should be left for 24-48hrs and then cut to 5cm using the same method, working in the same direction as the previous cut. This will allow any reptiles present to disperse into the wider environment unharmed. If a reptile is seen during the works, they should be allowed to escape unharmed at their own pace. Only a trained ecologist should attempt to move reptiles by hand. If multiple reptiles are encountered, works should cease, and the methodology be re-evaluated.

Figure 4. Photograph of Rocky Outcrop Habitat



2.10 Birds (including barn owl)

2.10.1 Desk Study

- i There are recent records for 1502 notable¹¹ bird species within the Study Area. These include red kite, crane and golden plover species listed on Annex I of the EC Birds Directive 1994, barn owl, fieldfare and hobby species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), bullfinch, corn bunting and cuckoo Species of Principal Importance (SPI), greenfinch and grey partridge species on the Conservation Concern 5 (BoCC5) Red list (Stanbury, 2021) and grey wagtail and kestrel species on the BoCC5 Amber list. The records also include grey partridge, linnet and reed bunting species of bird that are priority species in Oxfordshire listed on the Cherwell Biodiversity Action Plan.

2.10.2 Field Survey

- ii During the survey two skylarks were identified in the eastern arable field. Skylarks are a BoCC5 red list species and listed as a priority species on the local biodiversity action plan. The woodland, arable field and hedgerows on Site offer nesting and foraging habitat for breeding and wintering birds. Additionally, the semi-improved grassland and arable land offer foraging habitat for barn owls.

2.10.3 Constraints and Recommendations

- iii From the results of the desk study and field survey, it is highly likely that breeding, wintering birds and a number of notable species (including Schedule 1 protected species) utilise the Site. Furthermore, Balscote Quarry, which is designated for notable bird species, is within close proximity to the Site as it is located 0.4km southeast. Considering that majority of the records were from Balscote Quarry, it is likely that multiple notable bird species, as well as skylark are utilising the Site for further foraging opportunities.

¹¹ Notable bird species are taken as those listed: on Annex I of the EC Birds Directive (2009/147/EC); on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); as Species of Principal Importance (SPI) for the Conservation of Biodiversity in England listed in Section 41 of the Natural Environment and Rural Communities Act 2006; as Red or Amber in the Birds of Conservation Concern (BoCC) 4 (Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708-746); bird species or groups listed under the Cherwell Biodiversity Action Plan.

- iv It is therefore recommended that four breeding bird surveys are carried out between April and July, to determine species assemblages and how the Site is utilised, to inform further mitigation.
- v Wintering bird surveys are considered to be disproportionate given that the Site is largely surrounded by arable fields across the wider landscape providing further suitable habitat. However, considering the desk study returned records of notable wintering bird species, such as fieldfare and brambling, further consultation with the Local Planning Authority (LPA) is recommended to ascertain whether wintering bird surveys are required.
- vi Further barn owl surveys are considered disproportionate given that the trees present on Site are adjacent to the A422 main road, therefore are subject to disturbance. As a result of the current proposals, foraging habitat for barn owl, such as grassland and arable fields, will be lost, therefore the creation of meadow grassland is recommended to compensate for this loss.
- vii Any tree management works, or vegetation clearance should take place outside the bird nesting season (which runs March to August) to ensure compliance with the general protection afforded to wild birds under the Wildlife and Countryside Act 1981 (as amended). If this is unavoidable, a nesting bird check is required be undertaken by a qualified ecologist up to 24hr prior to works commencing. Should an active nest be found, a suitable buffer should be maintained (to be determined by the onsite ecologist) until the ecologist is satisfied that all chicks have fledged.

2.11 Terrestrial Invertebrates

2.11.1 Desk Study

- i There is one recent record of notable¹² terrestrial invertebrates within the Study Area. The closest / most relevant of these records is associated with small heath (*Coenonympha pamphilus*) butterfly located 0.26km south from the Site boundary.

2.11.2 Field Survey

- ii Habitats on site mainly comprised of arable fields and plant species within margins, hedgerows and poor semi-improved grassland were common and widespread. No larval food plants were identified for any NERC or Schedule 5 invertebrate species.

2.11.3 Constraints and Recommendations

- iii Due the low botanical diversity of the Site and that no larval food plants were identified for any NERC or Schedule 5 protected species; it is unlikely that the Site sustains a large population of terrestrial invertebrates. Additionally, given only one record of small heath NERC protected species was returned from the desk study, combined with the sub-optimal habitat present on Site, it is unlikely that the species is common and widespread on the Site, therefore further survey is deemed unnecessary and disproportionate.

¹² Notable terrestrial invertebrates are taken as principal species for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; any invertebrate listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); any invertebrate listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended); any invertebrate listed in the IUCN Invertebrate Red Data Book (1991); and any invertebrate listed under a Cherwell Biodiversity Action Plan.

2.12 Aquatic Invertebrates (including White-clawed Crayfish)

2.12.1 Desk Study

- i There are zero recent records of notable¹³ aquatic invertebrates (including white-clawed crayfish) within the Study Area.

2.12.2 Field Survey

- ii There were no waterbodies for aquatic invertebrates, including white-clawed crayfish present on Site.

2.12.3 Constraints and Recommendations

- iii The absence of records combined with the lack of suitable habitat present on Site suggests that is highly unlikely that any potential aquatic invertebrates will be impacted by the works. Additionally, the nearest watercourse is outside of the 250m buffer zone, therefore further survey is considered unnecessary and disproportionate.

2.13 Fish

2.13.1 Desk Study

- i There are zero recent records of fish within the Study Area.

2.13.2 Field Survey

- i There are no watercourses present on Site.

2.13.3 Constraints and Recommendations

- i The absence of records combined with the lack of suitable habitat present on Site suggests that is highly unlikely that any fish will be impacted by the works. Additionally, the nearest watercourse is outside of the 250m buffer zone, therefore further survey is considered unnecessary and disproportionate.

2.14 Other Notable Species

2.14.1 Desk Study

- i There are four recent records of other notable species¹⁴ within the Study Area. The closest / most relevant of these records is associated with brown hare located 0.37km southeast from the Site and common toad located 1km SW from the Site which is approximately within 2km from the Site boundary.

2.14.2 Field Survey

- ii The woodland, hedgerows, grassland and arable land on Site offer suitable foraging habitat and shelter for notable species such as hedgehog, fox, brown hare and common toad.

¹³ Notable aquatic invertebrates are taken as principal species for the conservation of biodiversity under Section 41 of the Natural Environment and Rural Communities Act 2006; any invertebrate listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); any invertebrate listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended); any invertebrate listed in the IUCN Invertebrate Red Data Book (1991); and any invertebrate listed under Cherwell Biodiversity Action Plan.

¹⁴ Notable species are taken as principal species for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; any species listed in an IUCN Red Data Book; and any other species listed under the Cherwell Biodiversity Action Plan that are not referred to in previous sections of the report.

2.14.3 Constraints and Recommendations

iii It is recommended that the precautionary methods of works provided for badger, is also followed for notable species. This should include:

- Mammal ladders (such as a plank) or earth ramps to be placed in any open excavations at the end of each day;
- Cap off any open pipes at the end of each day;
- Cover any open holes, or install mammal ladders or earth ramps in any open excavations at the end of each day to prevent animals from becoming trapped;
- Keep all fuel and other harmful substances in a locked area;
- Ensure any spillages are treated with spill kits;
- If any fresh sett digging is observed notify an ecologist immediately and leave a 20m buffer around the area until an assessment can be made.

3 BIODIVERSITY IMPACT ASSESSMENT

- i Biodiversity Impact Assessment (BIA) calculations will be undertaken on receipt of the finalised masterplan. The metric will be issued separately, and this report will be updated once results are available.
- ii Section 4 of this report details some suggested enhancements for the site. More specific enhancement recommendations will be detailed with full calculations.

4 OPPORTUNITIES FOR ENHANCEMENTS

- i This section highlights opportunities for providing ecological enhancements, based on the current Scheme details. These are high level opportunities and would need to be developed in greater detail once further surveys have been completed and the Scheme proposals, such as detailed areas of habitat loss are confirmed.

4.2 Native Planting Opportunities

4.2.1 Planting New Hedgerows

- i If planting new hedgerows or replacing them, a minimum of six native species should be used, which could include hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*), field maple (*Acer campestre*), English elm (*Ulmus procera*) and hazel (*Corylus avellane*). Standard trees such as English oak (*Quercus robur*), beech (*Fagus sylvatica*), lime species (*Tilia sp.*), rowan (*Sorbus aucuparia*) and wild cherry (*Prunus avium*) could be planted. Once hedgerows are established, they should be trimmed in an 'A' shape to on a tri-annual basis to increase their suitability for local fauna. Planting should be undertaken during early winter, providing the ground is not frozen. Planting up gaps can be done in conjunction with coppicing existing plants, to give new plants minimum competition. To further reduce competition and aid establishment of the planted-up sections, the bases of the plants would be kept weed free through spot treatment of herbicide for the first three years.

4.2.2 Enhancing Retained Hedgerows

- ii If enhancing current hedgerows, a minimum of four different native species should be plug planted at the appropriate time of year (see 4.2.1). A hedgerow seed mix such as the N9F Hedgerow Mix by Naturescape (naturescape.co.uk), following spot treatment to remove any undesirable ruderal species such as common nettle from the understorey would also improve the botanical diversity and value of the hedgerow. A buffer of 1m should be retained at the base of all hedgerows to reduce disturbance and allow the establishment of more diverse flora.

4.2.3 Tree Planting

- iv If any trees are to be removed in proposals, these could be replaced elsewhere on site with planting native tree species as compensation. Species that could be planted include beech, wild cherry, English oak, lime species and hazel.

4.2.4 Wildflower Meadows

- v The creation of wildflower meadows onsite has the potential to increase biodiversity and provide a range of food sources for invertebrates such as pollinators and lepidoptera. This will, in turn provide an ample food source for insectivores such as bats and hedgehogs. Additionally, planting wildflower meadows will also compensate for the loss of barn owl foraging habitat, as it will provide foraging habitat for small mammals such as field mice and field vole.
- vi The ground could be prepared for supplementary planting with minimal effort, using a chain harrow. Any existing vegetation should be removed, and the soil should be raked to break it up, producing a fine, firm layer of soil. It is recommended that Long Season Meadow Mix (available from Naturescape) is used to allow for a long growing season, producing an aesthetically pleasing meadow of flowers, thus negating the requirement for an extensive mowing regime. Seeds should be sowed during autumn or spring, and if there is a dry period, the soil being sowed should be watered.
- vii Once established, the grassland will only require mowing in September (with the arisings being left for 48hrs prior to removal to allow the seeds to disperse for the following year). Any cutting should be removed from the ground, so that a low level of fertility is maintained, and any unwanted weeds such as nettles or thistles should be removed during the first year of management.

Wildlife Ponds

- i The proposed development Site could be further enhanced through the creation of a pond to be managed for wildlife. Areas of permanently wet water bodies and associated reedbeds can provide an important invertebrate habitat area increasing the foraging capacity of the Site for fauna (especially bats).
- ii Where pond basins are designed to hold some degree of permanent standing water, they could be planted with native marginal plug plant species and seeded with a grassland mix suitable for wet conditions such as Naturescape N8 Water's Edge Meadow Mixture. This comprises 24 Wildflower species and 9 grass species and provides the added benefits as described above within the grasslands planting. Where basins are designed to hold permanent standing water, management will focus primarily on maximising the nature conservation interest of the pond. Aquatic and marginal vegetation should be checked annually and where necessary cleared to maintain areas of open water. Only 1/3 or less of marginal areas should be cleared annually on a rotational basis during autumn. Arisings removed from open water should be left next to the pond for at least 7 days before taking to a designated composting area or removed from site, to allow amphibians/invertebrates to return to the pond. Should desilting be required, this should be undertaken between November and January. The pond should be monitored annually to assess signs of drying, colonisation of vegetation and any accumulation of sediment or debris. Inlets and outlets should be checked regularly for build-up of litter / sediment and cleared as required.

Wetland

- i The creation of wetland scrapes is recommended to enhance the Site for birds and encourage the presence of wetland bird species.
- ii Scrapes are shallow ponds, less than 1m in depth, which hold rain or flood water seasonally but stay damp for most of the year. They are shallow with gently sloping edges, commonly found in farmland and fields across the UK (The Wildfowl & Wetlands Trust, 2023).
- iii To be effective they need to hold water from March to May or into late June if possible. It is recommended that scrapes are placed in existing areas where the water table is likely to be near the surface. Avoid creating scrapes on very free draining soils or areas with a low water table as they are unlikely to retain water.
- iv Wetland features provide important feeding areas for breeding wading birds such as lapwings and redshanks, due to the presence of aquatic invertebrates. Other farmland birds such as tree sparrows and yellow wagtails will also benefit from the insect-rich habitat. Kingfisher may even be encouraged to use the Site if amphibians and small fish are present.
- v The addition of an insect rich habitat will also enhance the foraging habitat for bats.

4.3 Other Enhancements

- i The following enhancements could be delivered for biodiversity as part of the Scheme, that don't contribute towards the calculation of biodiversity net gain but can still deliver significant improvements for biodiversity:
 - Any landscape planting associated with the Scheme should consider the use of native shrub species and also species such as lavender which provide important sources for pollinating species. The Royal Horticultural Society provide online resources to identify suitable plants for garden areas that are aesthetically pleasing but of significant value to local pollinators (www.rhs.org.uk/plantsforpollinators).
 - Consideration to the provision of hibernacula within the woodland habitat for reptiles, and hedgehog. Regarding hedgehogs, boxes such as the "Hedgehog House with Hinged Inspection Roof" available at www.arkwildlife.co.uk are recommended to provide a long-term solution for individual hibernating, commuting or foraging hedgehogs within the Site boundaries.
 - Consideration to provision of bird nest boxes could also be given in respects to the retained trees. Use of boxes such as the Schwegler 1B nest box provide a long-term nest box solution requiring limited replacement unlike wooden boxes which need regular replacement as a result of weathering.

- Consideration to provision of bat boxes could also be given in respects to the retained trees. Use of boxes such as the Vivara woodstone box provide a long-term nest box solution requiring limited replacement unlike wooden boxes which need regular replacement as a result of weathering.
 - Additional enhancements that could easily be met within the development scope include the incorporation of bat and bird nest boxes and hedgehog boxes. Boxes could be placed either on new buildings or on retained trees within the Site boundaries and hedgehog boxes within the ornamental planting and compost piles. The tree mounted bat boxes should face south (for additional warmth), and be positioned at least 4 metres from the ground, with the entrances being free of overhanging branches. It is also recommended that bird nest boxes be placed 1.5m below each bat box, to ensure that the birds have somewhere to nest and do not inhabit the bat boxes. Suitable bat box dimensions are 430mm high X 270mm wide X 140mm deep and the boxes are designed to mimic natural roost sites and to provide a stable environment. In-cavity bat boxes located on buildings could be incorporated into the structure of the properties as they are built. These boxes would consist of Ibstock Enclosed Bat Box 'C' which is positioned at least 3 metres from the ground, facing either south, south-west or south-east (for additional warmth) and close to good foraging habitat. These bat box dimensions are 215mm high x 215mm wide x 105mm deep (small) or 290mm high x 215mm wide x 105mm deep (large) and are made from brick. An example of a suitable bat box is shown below.
 - Compensation for the loss of badger foraging habitat and well as maintenance of ecological corridors through the Site are recommended. This could include planting fruit trees and keeping a buffer of vegetation the boundaries of the site, and planting of fruit and nut bearing trees and shrubs.
 - Where any permanent fencing is to be constructed, small 15x15cm mammal holes should be installed within these fences. 'Hedgehog Highway' signs (available from the British Hedgehog Preservation Society) could be installed above these holes to prevent them being filled in in the future. This will help to maintain their permanency and so the connectivity for mammals, such as hedgehogs, to the site and the surrounding landscape
- ii These recommendations are made prior to receipt of final plans so may therefore be generic and may be adjusted to more appropriate methods at a later stage.

5 CONCLUSION

- i This PEAR is based on a desk study and ecological surveys undertaken on 10/08/2023, to assess the ecological constraints to the Scheme and to provide advice in respect of Scheme design, site layout and / or site investigation.
- ii The following further surveys/mitigation, summarised in Table 4, are recommended to inform a planning application.

Table 4: Summary of Recommendations

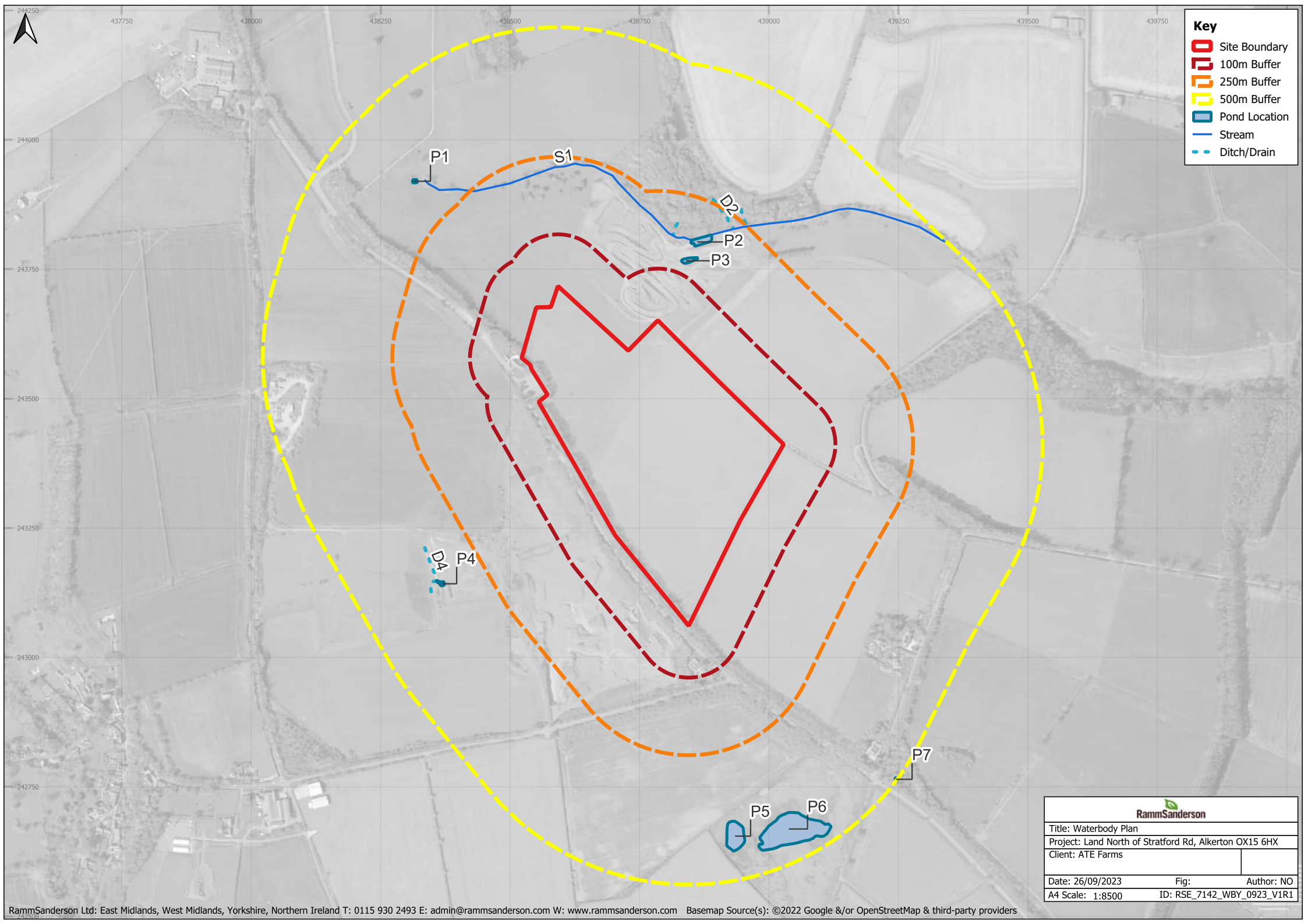
Ecological Feature	Recommendation	Timing
Designated sites	Balscote Quarry LWS is located 0.4km southeast from the Site boundary and is designated for notable birds. Therefore, it is recommended that surrounding foraging/nesting habitat is preserved. Retain broadleaved woodland, hedgerow, and dense scrub where possible (as is currently proposed)	N/A
Habitats	<p>Mitigation – seek to retain hedgerows and woodland where possible. Where this is not possible, seek to reinstate hedgerows upon completion of the Scheme and enhance using recommendations provided.</p> <p>Utilise dust suppression techniques and adhere to pollution prevention guidelines to prevent accidental pollution of onsite and adjacent habitats during the construction phase.</p> <p>Maintenance of root protection zones of retained trees, hedgerows, and woodland parcels.</p>	Construction phase
Bats	Further survey - GLTA's to be undertaken on any individual trees that are to be impacted by the works.	GLTA's may be undertaken at any time of year by a suitably licenced ecologist (optimal over winter months).
Great Crested Newt	Further survey – HSI of waterbodies with subsequent eDNA surveys where waterbodies are assessed to be suitable.	HSI's can be undertaken at any time of the year by a suitably qualified ecologist, with eDNA surveys being undertaken between 15 th April and 30 th June.

Ecological Feature	Recommendation	Timing
Reptiles	Precautionary Method of Works during construction phase	Directional clearance to be undertaken with temperatures over 11°C using hand tools only to allow reptiles to disperse of their own accord.
Birds	Further survey – Four breeding bird surveys should be undertaken on Site to indicate the utilisation of notable bird species. Further consultation with LPA on whether wintering bird surveys are required.	Breeding bird surveys would be undertaken monthly between April and July (including one evening/nocturnal visit). Consultation with LPA is recommended before planning approval. Wintering bird surveys can be undertaken November-March.
Other Notable Species	Precautionary Methods of Works detailed in a CEMP/PMW documents.	CEMP/PMW to be outlined prior to commencement of works.

- iii Other enhancements for biodiversity that could be delivered as part of the Scheme include native species planting including tree planting and enhancing/creating hedgerows and wildflower meadow creation.

5.2 Re-Survey of Site

- i Due to the mobility of animals and the potential for colonisation of the Site, it is recommended that an updated ecological survey be undertaken prior to the redevelopment of this Site should this not occur within 12 months of the date of the field survey.



Key

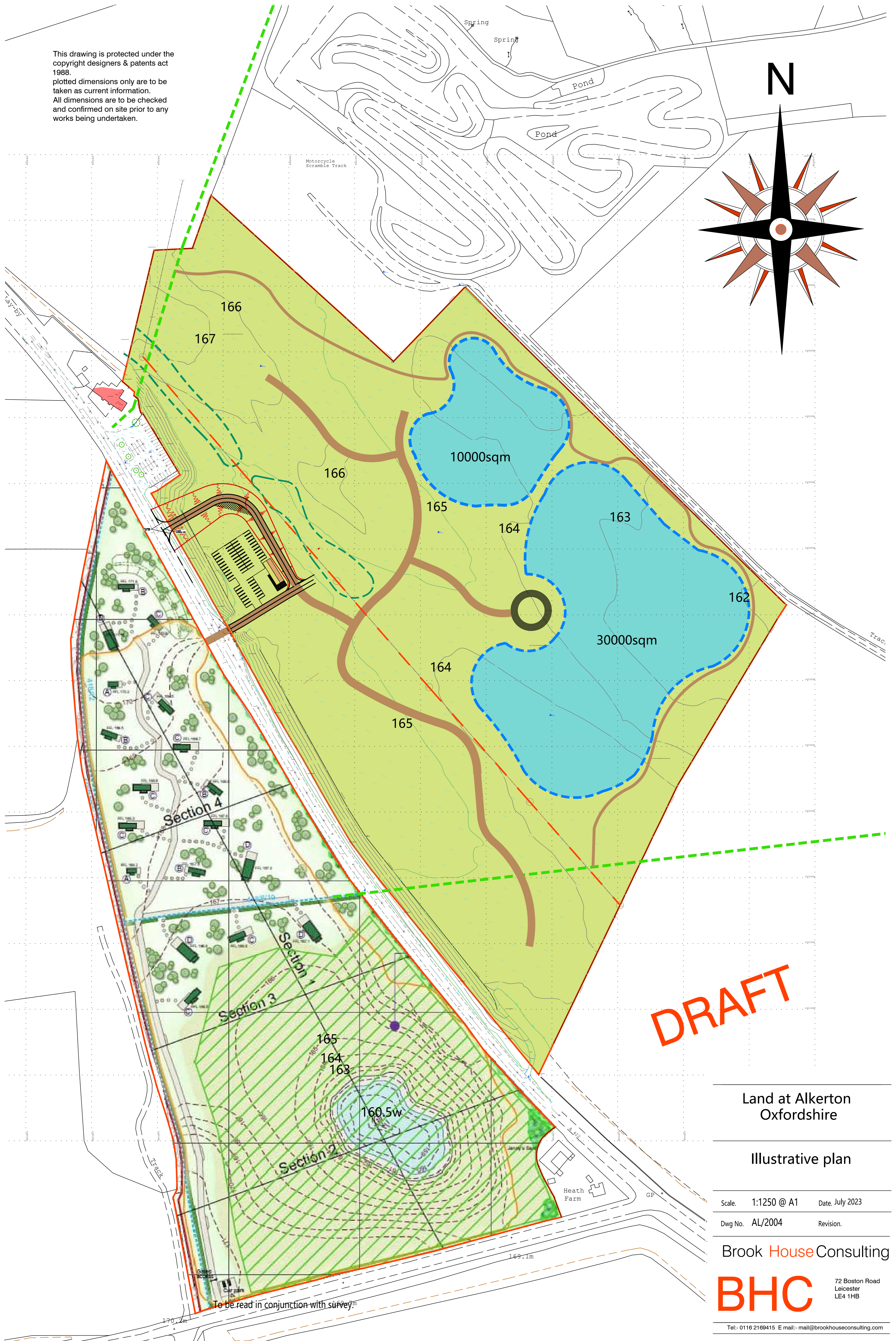
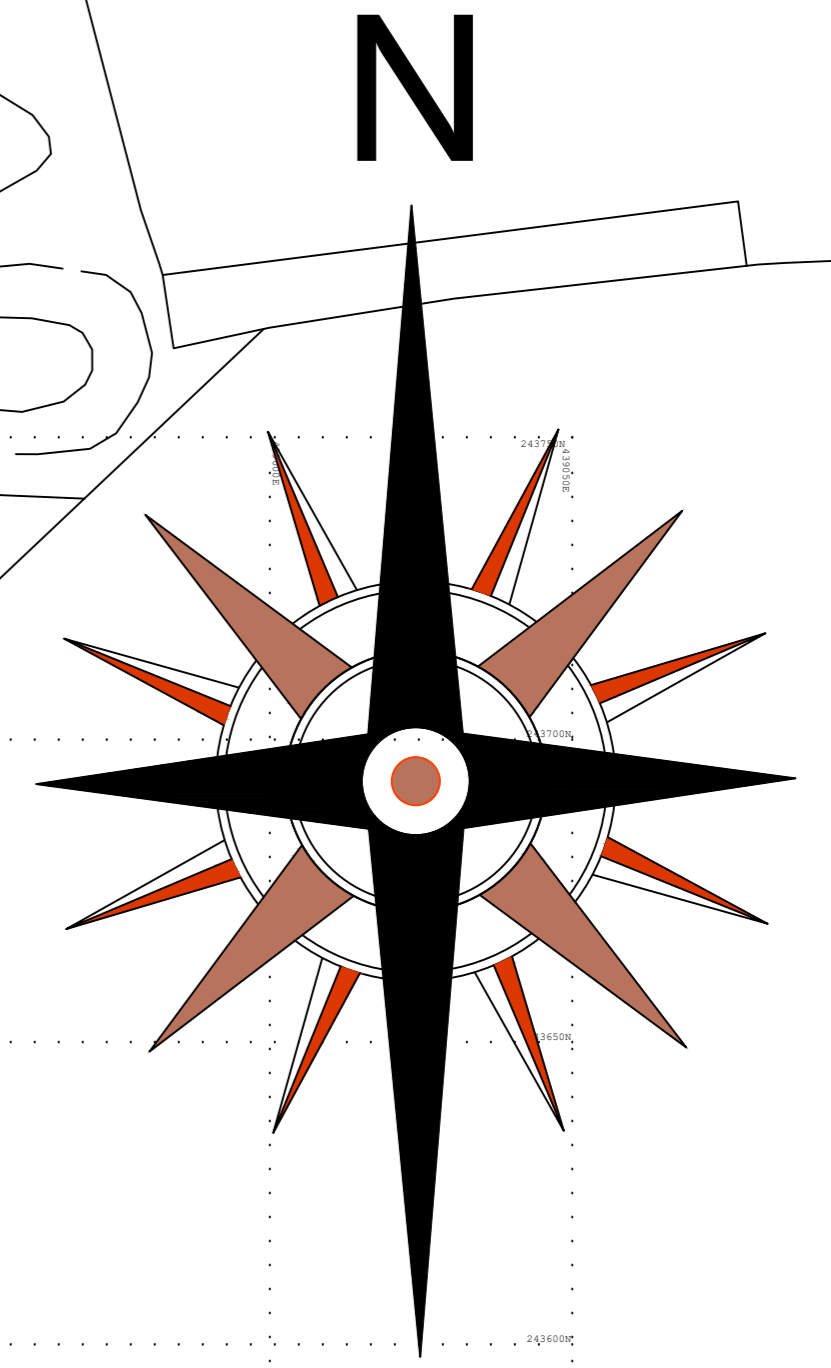
- ▭ Site Boundary
- - - 100m Buffer
- - - 250m Buffer
- - - 500m Buffer
- ▭ Pond Location
- Stream
- · - Ditch/Drain

Title: Waterbody Plan		
Project: Land North of Stratford Rd, Alkerton OX15 6HX		
Client: ATE Farms		
Date: 26/09/2023	Fig:	Author: NO
A4 Scale: 1:8500	ID: RSE_7142_WBY_0923_V1R1	

7 REFERENCES

- Wildlife and Countryside Act . (1981 (as amended)). *Schedule 9*.
- Chanin, P. (2003). *Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No 10*. Peterborough: English Nature.
- Collins, J. (Eds.). (2016). *Bat Surveys for Professional Ecologists: Good Survey Guidelines (Collins, J. Eds. 2016)*, . London: Bat Conservation Trust.
- Dean, M. S. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Guidance Series) Eds Mathews, F. and Chanin, P.* London: The Mammal Society.
- Department of Communities & Local Government. (2021). *The National Planning Policy Framework (NPPF)* .
- English Nature. (2001). *The Great Crested Newt Mitigation Guidelines*. Peterborough.
- English Nature. (2004). *Reptiles: Guidelines for Developers*. Peterborough: English Nature.
- English Nature. (2006). *The Dormouse Conservation Handbook, 2nd edition*.
- Froglife. (1999). *Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10.* . Halesworth.
- Froglife. (2001). *The Great Crested Newt Conservation Handbook*. Halesworth.
- Harris, S. C. (1989). *Surveying Badgers*. The Mammal Society.
- Joint Nature Conservation Committee. (2003). *Herpetofauna Workers Manual*.
- Joint Nature Conservation Committee. (2010). *Handbook for Phase 1 habitat survey - a technique for environmental audit*. Peterborough.
- Multi-Agency Geographic Information for the Countryside (MAGIC) (www.magic.gov.uk)* . (n.d.).
- National Parks and Access to the Countryside Act*. (1949).
- Natural England. (2004). *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt (ENRR576)* . Peterborough: <http://publications.naturalengland.org.uk/publication/134002>.
- Natural England. (2009). *Interpretation of 'Disturbance' in relation to badgers occupying a sett*. Peterborough.
- R. S. Oldham, J. K. (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *The Herpetological Journal*, pp.143-155.
- Scottish Natural Heritage. (2018). *Surveying for Badgers: Good Practice Guidelines. Version 1*.
- Stace, C. E. (2019). *New Flora of the British Isles, 4th Edition*. Cambridge University Press.
- Stanbury, A. E. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds*, 114:723-747.
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations*. (2019).
- The Hedgerow Regulations*. (1997).
- Ward, D. H. (1994). *The New Rivers and Wildlife Handbook*. Bedfordshire: Royal Society for the Protection of Birds.
- The Wildfowl and Wetlands Trust (2023) *Ditches and Scrapes*.

This drawing is protected under the copyright designers & patents act 1988.
plotted dimensions only are to be taken as current information.
All dimensions are to be checked and confirmed on site prior to any works being undertaken.



DRAFT

Land at Alkerton
Oxfordshire

Illustrative plan

Scale: 1:1250 @ A1 Date: July 2023

Dwg No. AL/2004 Revision.

Brook House Consulting

BHC

72 Boston Road
Leicester
LE4 1HB

Tel: 0116 2169415 E mail: mail@brookhouseconsulting.com

To be read in conjunction with survey

APPENDIX 2: RELEVANT LEGISLATION AND PLANNING POLICY

The UK is no longer a member of the European Union (EU). EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation. EU legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'.

The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the Conservation of Habitats and Species Regulations 2017 (referred to as the 2017 Regulations) so that they operate effectively. Most of these changes involve transferring functions from the European Commission to the appropriate authorities in England. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant and are now referred to as The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (the 2019 Regulations).

Designated Sites

Locally Designated Sites

Local Wildlife Sites are sites with 'substantive nature conservation value'. They are defined areas, identified and selected for their nature conservation value, based on important, distinctive and threatened habitats and species within a region.

They are usually selected by the relevant Wildlife Trust, along with representatives of the local authority and other local wildlife conservation groups.

The LWS selection panel, select all sites that meet the assigned criteria, unlike SSSIs, which for some habitats are a representative sample of sites that meet the national standard. Consequently, many sites of SSSI quality are not designated and instead are selected as LWSs. Consequently, LWSs can be amongst the best sites for biodiversity.

Protected Species

Bats / Hazel Dormouse / Otter / Great Crested Newt

These species, known as European Protected Species, are protected under Regulation 43 of the 2017 Regulations as amended by the 2019 Regulations. This makes it an offence to deliberately capture, injure or kill an animal; deliberately disturb an animal; or damage or destroy a breeding site or resting place used by an animal.

Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing. Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.

Where development works are at risk of causing one or more of the offences listed above, a mitigation licence from Natural England can be obtained to facilitate the works that would otherwise be illegal.

These species are also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb an animal in such a place.

Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

Water Vole

Water voles are protected under the Wildlife and Countryside Act 1981 (as amended). There are no licensing purposes that explicitly cover development or other construction activities which could have an impact on water voles.

When development work is proposed in or near an area which is either known to or likely to contain water voles, then the developer will need to implement suitable mitigation to prevent impacts to water voles. The preferred mitigation option is to leave water voles in situ, with the development works adopting avoidance measures through redesign of the proposals.

Where impacts cannot be avoided, operations aimed at displacing water voles from a development site are now no longer covered by the “incidental result of an otherwise lawful action” defence in the Wildlife and Countryside Act 1981 (as amended). Displacement of water voles now needs to be undertaken under a licence.

In England, small scale (limited to continuous lengths of bank not exceeding 50 m) displacement of water voles can be carried out at certain times of the year (February to April) for the purposes of conservation under a Class Licence by a registered person. For larger scale displacements or displacements outside of this period, displacement can be undertaken under a site-specific conservation licence.

Where it is considered that the best outcome for water voles is capture and translocation to a different location then this action is considered by Natural England to be outside the scope of the defence as the intentional capture of water voles is unlikely to be considered ‘incidental’. In these circumstances there may be genuine grounds for issuing a conservation licence for the purpose of translocating the water vole population to suitable alternative habitat.

Nesting Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), with some species afforded greater protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). In addition to the protection from killing or taking that all birds receive, Schedule 1 birds and their young must not be disturbed at the nest.

There are no licensing purposes that explicitly cover development activities affecting wild birds.

White-clawed Crayfish

White-clawed crayfish are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to take or to sell white-clawed crayfish.

White-clawed crayfish is a species under major threat of global extinction and is referred to in various biodiversity related policy¹⁵. Several organisations involved in works on rivers or other water bodies have general legal obligations¹⁶ to take the presence of white-clawed crayfish into account when issuing permissions to undertake works.

Common Species of Reptile (common lizard, slow worm, grass snake and adder)

Common species of reptile are protected against intentional killing and injury under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). There is no requirement for a licence where development works affect common

¹⁵White-clawed crayfish is listed under the following: as a “priority” species of conservation importance under Section 41 of the Natural Environment and Rural Communities Act (2000); and listed in Cherwell Biodiversity Action Plan

¹⁶ Under the Water Resources Act 1991 and the Land Drainage Act 1991 there is a requirement to consider the presence of notable species such as white-clawed crayfish when the Environment Agency, Internal Drainage Board or other statutory agency is considering granting consent for proposed operations to a water course.

species of reptiles. Instead, Natural England (English Nature, 2004) advise that where reptiles are present, they should be protected from any harm that might arise during the development works through appropriate mitigation.

Badger

Badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended). This makes it an offence to wilfully kill, injure or take a badger; or intentionally or recklessly damage, destroy or obstruct access to a badger sett or disturb a badger in its sett.

It is not illegal to carry out disturbance activities near setts that are not occupied, i.e. those that do not show signs of current use.

Where required, licences for development activities involving disturbance or sett interference or closure are issued by Natural England. Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process.

When assessing the requirement for a licence in respect of development, Natural England (Natural England, 2009) state that badgers are relatively tolerant of moderate levels of noise and activity around their setts, and that a low or moderate level of apparent disturbing activity at or near to badger setts does not necessarily disturb the badgers occupying those setts.

Licences are normally not granted from December to June inclusive (the badger breeding season) because dependent cubs may be present within setts.

Species and Habitats of Principal Importance for the Conservation of Biodiversity

Section 40 of the Natural Environment & Rural Communities Act (NERC) 2006 sets out the duty for public authorities to conserve biodiversity in England.

Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretary of State for England, in consultation with Natural England, are referred to in Section 41 of the NERC Act for England. The list, known as the 'England Biodiversity List', of habitats and species can be found on the Natural England web site.

The 'England Biodiversity List' is used as a guide for decision makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006 to have regard to the conservation of biodiversity in England when carrying out their normal functions. The habitats and species on the List, are material considerations of planning, where present on an application site.

Hedgerows

Under The Hedgerow Regulations, 1997, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. In general, permission will be required before removing hedges that are at least 20 metres in length, over 30 years old and contain certain species of plant. The local planning authority will assess the importance of the hedgerow using criteria set out in the regulations.

Planning Policy

National Planning Policy Framework, 2021

The National Planning Policy Framework (NPPF) (Department of Communities & Local Government, 2021) sets out the Governments planning policies for England and how these are expected to be applied by Local Authorities within their Local Development Frameworks (LDF).

Regarding the NPPF, the most pertinent paragraphs are:

8.c) “to protect and enhance our natural, built and historic environment, including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy”

174.d) “minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”

179.b) “promote 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.”

180.a) “if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.”

180.c) “development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists.”

7.1 Local Planning Policy

- i. ESD 10 of the Cherwell District Council Regulation 10a Review Of Local Plan Policies, February 2023 sets out goals including doubling tree cover in the district by 2045 and seek a minimum of 10% biodiversity net gain on any development proposal.
- ii. ESD 13 of the Cherwell District Council Regulation 10a Review of Local Plan Policies states ‘The policy sets out the approach to protecting and enhancing the landscape. NPPF paragraph 174 states that policies should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils, recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services. This policy is generally consistent with the NPPF.’

7.2 Local Biodiversity Action Plans

- i. Cherwell District Council Local Biodiversity Action plan in which these areas have been categorised into five broad habitat types: farmland, woodland, grassland (including grazing marsh and heathland), wetland and aquatic habitats.
- ii. Priority species listed within the habitat action plans include:
 - Otter
 - Water vole
 - White-clawed Crayfish
 - Depressed River Mussel
 - Great Crested Newt
 - Tassel Stonewort
 - Reed Bunting

- Bittern
- Skylark
- Pennycress
- Perfoliate
- Grey Partridge
- True Fox Sedge
- Marsh Fritillary
- Orange-fruited Elm-lichen
- Pipistrelle bat species
- Bullfinch
- Song Thrush
- Spotter Flycatcher
- Pearl-bordered Fritillary
- Lunar Yellow Underwing
- Linnet
- Tree Sparrow
- Turtle Dove

APPENDIX 3: METHODOLOGY

Desk Study

Background Records Search

The preliminary ecological assessment includes a desk study to obtain background records relevant to a Site and the Scheme. The data obtained provides contextual information for the scope of field surveys, to aid the evaluation of field survey results, and to provide supplementary information where complete field survey coverage is not possible.

The Study Area is dependent upon the nature, timing and scale of the Scheme, as well as the location of the Site and the surrounding landscape. These variables all contribute to what is referred to as the Zone of Influence (ZoI) of the Scheme, which is the area over which ecological features may be affected by biophysical changes because of the works and associated activities.

On 25/09/2023 the Thames Valley Records Centre was contacted to obtain the following ecological data:

- Records of non-statutory designated sites (Local Wildlife Sites (LWS)) within 1km of the Site boundary;
- Records of legally protected and notable species (fauna and flora) within 1km of the Site boundary, including Species of Principal Importance for the Conservation of Biodiversity listed under Section 41 of the Natural Environment & Rural Communities Act 2006 in the England Biodiversity List¹⁷.

The Multi-Agency Geographic Information for the Countryside (MAGIC) (www.magic.gov.uk) website was reviewed for the following information:

- Designated sites of nature conservation importance (statutory sites only) within 1 km of the Site. This was extended to 2 km for internationally designated sites: Special Protection Areas (SPAs), Wetlands of International Importance (Ramsar sites) and Special Areas of Conservation (SACs); and,
- Notable habitats within 1km of the Site, these being areas of ancient woodland and 'Habitats of Principal Importance for the Conservation of Biodiversity' included in the England Biodiversity List.

Great Crested Newt Pond Search

Ordnance Survey maps and the Where's the Path website (<https://wtp2.appspot.com/wheresthepath.htm>) have been used to identify the presence of water bodies within 500 m of the Site boundary, in order to help establish if the land within and immediately surrounding the Site could be used by great crested newts. This species can use suitable terrestrial habitat up to 500 m from a breeding pond (English Nature, 2001), though there is a notable decrease in great crested newt abundance beyond 250 m from a breeding pond (Natural England, 2004).

Field Survey

The preliminary ecological assessment includes a walkover survey of the Survey Area (all land within the Site broadly following the Phase 1 habitat survey methodology as set out in Joint Nature Conservation Committee guidance (Joint Nature Conservation Committee, 2010). This survey method records information on habitat types and is 'extended'

¹⁷ Section 40 of the Natural Environment & Rural Communities Act 2006 requires that very public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. The Secretary of State has drawn up, in accordance with Section 41 of the Act and in consultation with Natural England, a list of habitats and species of principal importance for the conservation of biodiversity in England that is known as the England Biodiversity List

to record any evidence of and potential for protected or notable species to be present. Plant names recorded during the survey follow (Stace, 2019).

During the walkover survey, the following protected or notable species are considered:

- **Badger:** the survey involves searching for signs of badger activity including setts, tracks, snuffle holes and latrines, following the methodology detailed in (Scottish Natural Heritage, 2018) and (Harris, 1989).
- **Bats:** the survey involves searching for potential roosting sites for bats within trees and structures (such as buildings, bridges or underground features such as mines) and categorising the potential of those trees or structures to support roosting bats (negligible to high, or confirmed roost), in accordance with Bat Conservation Trust (BCT) (Collins, J. (Eds.), 2016) guidance.
- **Hazel dormouse:** the survey involves assessing the potential of habitats within the Survey Area to support hazel dormouse, following English Nature guidance (English Nature, 2006);
- **Otter:** the survey involves assessing the potential of watercourses and water bodies, and adjacent terrestrial habitat within the Survey Area to support otter, following RSPB (Ward, 1994) and (Chanin, 2003) guidance;
- **Water vole:** the survey involves assessing the potential of watercourses and water bodies within the Survey Area to support water vole, following The Mammal Society (Dean, 2016) guidance;
- **Birds:** the survey involves assessing the potential of habitats within the Survey Area to support breeding, wintering or migrating birds, either individually notable species or assemblages of both common and rarer species;
- **Great crested newt:** the survey involves assessing the potential of habitats within the Survey Area to support great crested newt, following English Nature (English Nature, 2001) and Froglife (Froglife, 2001) guidance;
- **Reptiles:** the survey involves assessing the potential of habitats within the Survey Area to support reptiles (typically adder, grass snake, common lizard and slow worm only, though in some locations and habitat types (most notably heathland) may also include smooth snake and sand lizard), following Froglife (Froglife, 1999) and JNCC (Joint Nature Conservation Committee, 2003) guidance;
- **Notable species of invertebrate:** the survey involves assessing the potential of habitats within the Survey Area to support notable species of invertebrates, both terrestrial and aquatic (including white-clawed crayfish);
- **Protected or Notable species of plants:** the survey involves recording protected or notable plant species;
- **Other notable species:** the survey involves assessing the potential of habitat within the Survey Area to support other Notable Species, such as hedgehog, brown hare, polecat or common toad;

Limitations

The aim of a desk study is to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitats or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the proposed development.

An ecological survey represents a 'snapshot' in time of the ecological condition of a Site. The ecological character of a Site can change substantially throughout both the course of a year, and from year to year impacting on the extent and quality of habitats potential to support protected species