

P35 Stoke Park Farm – Preliminary Ecological Appraisal

Eastleigh Borough Council

April 2023

Ecus Ltd

Report to: Eastleigh Borough Council

Report Title: P35 Stoke Park Farm – Preliminary Ecological Appraisal

Version: V1.0
Issue Date: April 2023
Report Ref: 20094

Originated By:



Claire Evans
Senior Ecologist

Date: 20.02.2023

Reviewed By:



Alex Hellyar
Senior Ecologist

Date: 06.03.2023

Approved By:



Rebecca Little
Principal Ecologist

Date: 18.04.2023

Prepared by:
Unit 4, Prisma Park, Berrington Way, Basingstoke RG24 8GT
01256 224 588

Version	Author	Description	Date
V0.1	Claire Evans	First Draft	20.02.2023
V0.2	Alex Hellyar	QA1	06.03.2023
V0.3	Alex Hellyar	Draft Issue	17.03.2023
V0.4	Rebecca Little	QA2	18.04.2023
V1.0	Alex Hellyar	QA2 amendments + Issue	19.04.2023

The report and the site assessments carried out by Ecus on behalf of the client in accordance with the agreed terms of contract and/or written agreement form the agreed Services. The Services were performed by Ecus with the skill and care ordinarily exercised by a reasonable Environmental Consultant at the time the Services were performed. Further, and in particular, the Services were performed by Ecus taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between Ecus and the client.

Other than that expressly contained in the paragraph above, Ecus provides no other representation or warranty whether express or implied, in relation to the services.

This report is produced exclusively for the purposes of the client. Ecus is not aware of any interest of or reliance by any party other than the client in or on the services. Unless expressly provided in writing, Ecus does not authorise, consent or condone any party other than the client relying upon the services provided. Any reliance on the services or any part of the services by any party other than the client is made wholly at that party's own and sole risk and Ecus disclaims any liability to such parties.

This report is based on site conditions, regulatory or other legal provisions, technology or economic conditions at the time of the Service provision. These conditions can change with time and reliance on the findings of the Services under changing conditions should be reviewed.

Ecus accepts no responsibility for the accuracy of third party data used in this report.

Contents

EXECUTIVE SUMMARY	1
1.1 SCOPE	2
1.2 SITE DESCRIPTION.....	2
1.3 PROJECT SCOPE	2
1.4 QUALITY ASSURANCE	3
2. LEGISLATION.....	4
3. METHODOLOGY	5
3.1 DATA CONSULTATION	5
3.2 SITE SURVEY.....	5
3.3 BIODIVERSITY NET GAIN ASSESSMENT	6
3.4 WATERCOURSE SURVEY	7
3.5 PROTECTED SPECIES	9
3.6 LIMITATIONS	12
4. RESULTS AND DISCUSSION	13
4.1 STATUTORY DESIGNATED SITES FOR NATURE CONSERVATION	13
4.2 NON-STATUTORY DESIGNATED SITES	15
4.3 OTHER IMPORTANT HABITATS	18
4.4 HABITAT ASSESSMENT.....	20
4.5 BNG BASELINE	33
4.6 PROTECTED SPECIES	35
5. ECOLOGICAL CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS.....	51
5.1 CONSTRAINTS AND MITIGATION MEASURES	51
5.2 CONCLUSIONS.....	58
5.3 ECOLOGICAL OPPORTUNITIES	58
6. REFERENCES	59
FIGURE 1: SITE LOCATION MAP	61
FIGURE 2: UKHAB MAP.....	62
FIGURE 3: BUILDINGS WITH BAT ROOST POTENTIAL.....	63
APPENDIX 1: SITE HABITAT PHOTOGRAPHS	64
APPENDIX 2: LEGISLATION.....	65
APPENDIX 3: NOTABLE BIRD SPECIES WITHIN 2 KM OF THE SITE	69
APPENDIX 4: BNG BASELINE RAW DATA	72

Executive Summary

Ecus Limited (Ecus) was commissioned by Eastleigh Borough Council to undertake a Preliminary Ecological Appraisal (PEA) (Chartered Institute of Ecology and Environmental Management (CIEEM), 2017) for land at Stoke Park Farm, Eastleigh, Hampshire.

Eastleigh Borough Council (EBC) has recently acquired 243.23 hectares of agricultural land. Stoke Park Farm is one of the parcels that comprises the overall 243.23 hectares. The land was purchased with the view to generate credits via biodiversity enhancement measures from Ecological Opportunities that developers could purchase in order to offset their nutrient outputs. It is understood that it is also possible to generate further credits from the land for other mitigation and/or consider the land for additional purposes.

From the UK Habitats Classification survey (UKHabs), the baseline habitats within the Site comprised:

- g4 – modified grassland (previously used for pasture).
- W2a – wet woodland.
- w1f – lowland mixed deciduous woodland.
- W1g – other broadleaved; woodland.
- h2a – hedgerow (priority habitat).
- w1g6 – line of trees & scattered trees.

Forty artificial ponds were present within the Bowlake Fish Farm. All of these ponds were assessed as being in **poor** condition (in terms of natural habitats) due to their use as a fish farm.

Three artificial ponds were present adjacent to Stoke Park Farm buildings which were also assessed as being in **poor** condition.

The calculated BNG baseline for the Site are:

- Total habitat units (HU): 284.56
- Hedgerow units (HeU): 28.20
- River units (RU): 11.67

A map of the baseline habitats is provided in **Figure 2** and the raw BNG baseline data is provided in **Appendix 4**.

See Section 5.1 for ecological constraints and mitigation options and Section 5.3 for ecological opportunities.

Introduction

1.1 Scope

- 1.1.1 Ecus Limited (Ecus) was commissioned by Eastleigh Borough Council to undertake a Preliminary Ecological Appraisal (PEA) (Chartered Institute of Ecology and Environmental Management (CIEEM), 2017) for land at Stoke Park Farm, Eastleigh, Hampshire.
- 1.1.2 This report details the results of a desk study, habitat survey and protected species assessment carried out on 17th and 18th January 2023 by experienced ecus Ecologists. The methodologies employed and all survey findings are described along with an evaluation and assessment of the ecological importance of the Site. Any requirement for further survey work and/or mitigation/enhancement is also detailed as required.
- 1.1.3 The PEA focussed on the Site which is defined by the red line 'Site boundary' on **Figure 1**.

1.2 Site Description

- 1.2.1 The Site measured approximately 103.12 ha in area and primarily comprised arable land (pasture) with pockets of woodland, hedgerows, lines of trees and farm buildings including a residential property. The Site is located at National Grid Reference (NGR) SU 48042 19848 and its extent can be viewed on **Figure 1**. The habitat map is illustrated on **Figure 2** and Site habitat photographs can be viewed in **Appendix 1**.
- 1.2.2 The Site lies on the north-eastern border of Bishopstoke, 1 km east of Eastleigh. The Site is surrounded by woodland to the south, arable fields to the north and suburban areas to the east and west.

1.3 Project Scope

- 1.3.1 Eastleigh Borough Council (EBC) has recently acquired 243.23 hectares of agricultural land. Stoke Park Farm is one of the parcels that comprises the overall 243.23 hectares. The land was purchased with the view to generate credits via biodiversity enhancement measures from Ecological Opportunities that developers could purchase in order to offset their nutrient outputs. It is understood that it is also possible to generate further credits from the land for other mitigation and/or consider the land for additional purposes.
- 1.3.2 Survey findings would support applications relating to the generation of further mitigation credits and/or inform additional uses of the land. Biodiversity net gain (BNG) baseline assessments are to be undertaken in readiness for mandatory 10% BNG in November 2023 as required by the Environment Act (2023).

1.4 Quality Assurance

- 1.4.1 The habitat survey and protected species assessment was completed by Senior Ecologist Alex Hellyar BSc (Hons) and Senior Ecologist Claire Evans BSc (Hons) MSc.
- 1.4.2 The associated PEA report was completed by Senior Ecologist Claire Evans BSc (Hons).
- 1.4.3 Senior Ecologist Alex Hellyar has reviewed this report in accordance with Ecus' Quality Assurance policy.
- 1.4.4 The report was approved by Principal Ecologist Rebecca Little MCIEEM MRSB BSc (Hons).

2. Legislation

2.1.1 The primary purpose of the PEA was to identify any ecological constraints to the proposed works, including designated sites for nature conservation, habitats and species protected by legislation, namely, but not limited to:

- The Wildlife & Countryside Act 1981 (as amended) (“the WCA 1981”);
- The Conservation of Habitats and Species Regulations 2019 (as amended) (“the Habitats Regulations”);
- The Protection of Badgers Act 1992;
- The Natural Environment and Rural Communities Act 2006 (“the NERC Act”); and
- The Environment Act 2021.

2.1.2 Further details for species protected by the above legislation are provided in **Appendix 2**.

3. Methodology

3.1 Data Consultation

- 3.1.1 Obtaining existing biological records is an important part of the PEA process, as it provides additional information that may not be apparent during a site visit and provides a more in depth baseline from which to inform recommendations and mitigation.
- 3.1.2 The Hampshire Biodiversity Information Centre (HBIC) provided recent (within the past 10 years) biological record data within 2 km of the Site, on behalf of Eastleigh Borough Council to inform the desk study for this project.
- 3.1.3 The data obtained from HBIC includes records of protected and notable species, invasive non-native species (INNS) and non-statutory designated sites for nature conservation.
- 3.1.4 In addition, Ecus used the Government's Multi-Agency Geographical Information for the Countryside (MAGIC) website (MAGIC, 2022) to identify statutory designated sites of international and European nature conservation importance within 10 km of the Site, other statutory designated sites within 2 km of the Site and any records of European Protected Species (EPS) mitigation licences granted within 2 km of the Site.
- 3.1.5 Information obtained from MAGIC and HBIC is included within the report where appropriate.

3.2 Site Survey

- 3.2.1 A habitat survey and protected species assessment was completed in accordance with industry guidelines (CIEEM, 2017 & Butcher *et al.*, 2020) on 17th and 18th January 2023.
- 3.2.2 Weather conditions and visibility were considered to be suitable for the purpose of the survey (temperature = 1-5°C, wind = Beaufort 1, cloud = 100-0% cover, precipitation = dry).
- 3.2.3 The Survey Area is shown by the red line boundary in **Figure 1**. Botanical species were recorded and a species list was noted.
- 3.2.4 The habitats within the Survey Area were identified to a Level 4 or Level 5 using the UKHabs methodology.
- 3.2.5 The Minimum Mappable Unit (MMU) was used, which was 25 m² for areas and 5 m length x 1m width for linear features. Secondary codes were utilised focussing on habitat features and land use. Under UKHab guidance, this MMU requires the mapping of linear features as polygons if they are wider than 1 m.
- 3.2.6 This survey method aims to characterise habitats and communities present and is not intended to

provide a complete list of all plants occurring across the Survey Area.

- 3.2.7 Evidence of protected species, species of nature conservation importance and notable, rare, or scarce species was recorded if field signs were present at the time of survey. Photographs were taken of each habitat type and any features with potential to support protected or notable species.
- 3.2.8 Habitat type has been digitised using QGIS version 3.28, 2022, see **Figure 2**.
- 3.2.9 Any habitats present which are listed under Section 41 of the NERC Act or the Local Biodiversity Action Plan (LBAP) were noted.
- 3.2.10 The importance of ecological features present within the Survey Area was determined based on the guidance given in CIEEM Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).
- 3.2.11 Where possible, ecological features (habitats and species that could be affected by the proposed works) were assigned levels of importance for nature conservation. The hierarchy of importance used in this report scales from international, national, regional, county, local and lastly Site level where appropriate (CIEEM, 2017).

3.3 Biodiversity Net Gain Assessment

- 3.3.1 Biodiversity metric calculations provide a numerical score for the current baseline value (Habitat Units, Hedgerow Units and / or River (watercourse) Units) of the habitats on Site in order for the potential impact of any proposed works to be quantitatively assessed.
- 3.3.2 The BNGA used the current biometric tool, the 'Biodiversity Metric 3.1 Auditing and accounting for biodiversity - Calculation Tool' (BM3.1) distributed by Natural England.
- 3.3.3 BM3.1 uses a classification system based mainly on the UK Habitat Classification System (UKHabs). Where applicable, habitats were subject to a condition assessment in accord with the Condition Assessment Sheets included within the 'Biodiversity Metric 3.1: Auditing and accounting for biodiversity – Technical Supplement 1a (2022)' produced by Defra.
- 3.3.4 Using the BM3.1 tool, habitat values are calculated based on whether they occur commonly or whether they are rare, their area (ha) (or length (km) for linear features such as hedgerows), condition and importance within the local area, usually identified from local relevant planning policies or documents. This gives individual pre-development Habitat Units (HU), Hedgerow Units (HeU) and River Units (RU).
- 3.3.5 The Minimum Mappable Unit used was 25 m² for areas and 5 m length x 1 m width for linear features. Secondary codes were utilised, focusing on habitat features and land use. Under UKHab guidance, this Minimum Mappable Unit requires the mapping of linear features as polygons if they

are wider than 1m. This does not translate effectively into the Biodiversity Metric, which requires linear features to be inputted as lengths (km). As such, some of the polygon area features have required conversion into lengths for the purposes of the biodiversity baseline.

3.3.6 Habitat type has been digitised using QGIS version 3.28, 2022, see **Figure 2**.

3.3.7 The results of the BNG assessment will be detailed within **Section 4**.

3.4 Watercourse Survey

MoRPh5 Field Survey

3.4.1 The MoRPh5 survey is used to collect field data within ‘sub-reaches’ of a river. At least 20% of the river length within the Site should be surveyed (Gurnell *et al.*, 2020a). MoRPh5 surveys are carried out on short ‘modules’ of the river, the size of which is determined by the river width (see Table 1). The MoRPh5 field surveys were carried out by an experienced Ecus ecologist in good weather conditions between 17th and 18th January 2023.

Table 1. Determining module length from river width.

River width (m)	Module length (m)
< 5	10
5 to < 10	20
10 to < 20	30
20 to < 30	40
Large and navigable rivers and canals	50

3.4.2 Five contiguous modules are surveyed within each sub-reach. The area surveyed within each module includes land within 10 m of the bank top either side of the river, both bank faces and the channel bed. The features captured within the survey include the bank and bed sediments, morphological and hydraulic features, riparian and aquatic vegetation extent and structure, presence of non-native invasive plants, bank top land use pressures and human interventions within the river channel.

Condition Analysis

3.4.3 Following the field survey, the data is inputted into the Cartographer web application which

calculates a 'condition score' for each sub-reach of Good, Fairly Good, Moderate, Fairly Poor or Poor. Each sub-reach is also assigned a numerical preliminary condition score ranging from -2.5 to ≥ 2.5 , a higher number indicates a better condition score.

Indicative River Type

- 3.4.4 A combination of a desk based assessment and data from the MoRPh5 field surveys is used to determine 'river type' from one of thirteen near-natural river types. Eight river type indicators are used to determine river type. Indicators A1 to A5 are derived from maps or aerial images. These indicators are A1 Braiding index, A2 Sinuosity index, A3 Anabranching index, A4 Level of confinement and A5 Valley gradient. Indicators A6 to A8 are derived from the MoRPh5 surveys. These indicators are A6 Bedrock reaches, A7 Coarsest bed material size class and A8 Average alluvial bed material size class.
- 3.4.5 The data is entered into the Cartographer web application which automatically calculates river type from one of the thirteen types.

Riparian and In-Watercourse Encroachment

- 3.4.6 The riparian zone is defined as the area within 10 m of the bank top. Any development within this zone is termed 'riparian encroachment'. Encroachment can be classed as minor, moderate or major dependent on the proximity of the development to the bank top and the percentage area that it covers within the riparian zone. Riparian encroachment bands are described in **Table 2**.

Table 2. Description of riparian encroachment bands (Panks *et al.*, 2022).

Riparian Encroachment Band	Description
No encroachment	No development within 10 m of the bank top.
Minor	Any development 8 – 10 m from bank top (up to 100% of area) OR where development footprint occupies 0 – 10% of the riparian zone area 4 – 10 m from bank top.
Moderate	Any development where footprint occupies between 10 – 25% of the riparian zone area 4 – 10 m from bank top.
Major	Any development 0 – 4 m from bank top (except maximum of 5% footprint for amenity features) OR where total development footprint occupies > 25% of the total

	riparian area.
--	----------------

- 3.4.7 In-watercourse encroachment is defined as intervention that adversely affects hydrological and geo-morphological processes, creating localised changes in flow and/or sediment dynamics and riverine connectivity. In-watercourse encroachment is classed as minor or major dependent on the percentage of the bank length or channel width affected by the intervention; see **Table 3**.

Table 3. Description of in-watercourse encroachment bands (Panks *et al.*, 2022).

In-Watercourse Encroachment Band	Description
No encroachment	< 5% bank length comprising an engineered bank revetment AND no encroachment into the channel.
Minor	5% - 20% bank length comprising engineered bank revetment OR encroachment up to 10% channel width.
Major	> 20% bank length comprising an engineered bank revetment OR encroachment > 10% of the channel width.

3.5 Protected Species

- 3.5.1 Any evidence of, or potential for protected or otherwise notable species encountered during the survey was recorded. This included observations of field signs and an assessment of the suitability of the habitats present to support protected species.

Amphibians (including great crested newt)

- 3.5.2 A desk-based assessment was undertaken using a 1:25,000 scale Ordnance Survey (OS) map to identify all waterbodies within 250 m of the Site that are not separated by a significant barrier to amphibian dispersal (such as a major road or watercourse).
- 3.5.3 As garden ponds within residential properties are often absent from OS map sources, aerial photography was also used to search for additional ponds.
- 3.5.4 Habitats present within the Site were assessed for their suitability to support amphibians including great crested newt (GCN) *Triturus cristatus*. The connectivity of any suitable habitat within the Site

to other habitat within the surrounding area was assessed during the Site visit and through visual analysis of aerial imagery.

- 3.5.5 Waterbodies within the Survey Area were subject to a Habitat Suitability Index (HSI) assessment following guidance outlined in Amphibian and Reptile Group (ARG) UK Advice Note 5 (ARG, 2010) to assess suitability of waterbodies to support GCN.

Badger

- 3.5.6 Field signs of badger *Meles meles* within the Survey Area were recorded in accordance with the standard methodology outlined by Harris *et al.* (1989), which includes surveying for setts and for field signs such as latrines, hairs, foraging signs and pathways.

Bats

- 3.5.7 In accordance with the Bat Conservation Trust's best practice guidelines (Collins, 2016), the suitability of habitat features within the Survey Area to support roosting bats was categorised as negligible, low, moderate or high. This was based on the number and type of roosting features and surrounding landscape character.
- 3.5.8 Any structures and trees present within the Survey Area were subject to an external visual assessment, undertaken from ground-level using binoculars. This approach permitted a search for the presence of Potential Roosting Features (PRFs) which could be used by roosting bats.
- 3.5.9 An individual tree or structure may have several PRFs associated with it. It is not always possible to confirm if a feature is used by bats, as bats may not use the feature frequently.
- 3.5.10 Habitats within the Survey Area were also assessed for their suitability to support foraging and commuting bats.

Birds

- 3.5.11 Species of birds noted incidentally during the survey were recorded and details of suitable habitats for nesting birds were noted, including those species with enhanced statutory protection.

Fish

- 3.5.12 Any watercourses present within the Survey Area were assessed for their suitability to support protected and notable fish species such as Atlantic salmon *Salmo salar*, brown trout *S. trutta* and European eel *Anguilla anguilla*.

Hazel dormouse

- 3.5.13 Habitats within the Survey Area were assessed for their potential to support hazel dormouse *Muscardinus avellanarius*, including recording of plant species that could provide foraging and

nesting habitat. The connectivity of any suitable habitat within the Survey Area to other habitat within the surrounding area was assessed during the survey and through studying aerial imagery.

Invertebrates including white-clawed crayfish

3.5.14 Habitats were assessed for their potential to support notable or protected terrestrial and aquatic invertebrates.

3.5.15 Any watercourses within the Survey Area were assessed for their suitability to support white-clawed crayfish *Austropotamobius pallipes*.

Otter

3.5.16 Watercourses and waterbodies within the Survey Area were assessed for their suitability to support otter *Lutra lutra*. This involved recording incidental sightings of field signs such as: droppings (spraints), footprints, feeding remains, lying-up areas, holts, areas of habitat considered suitable for otters and actual observations (Chanin, 2003).

3.5.17 Terrestrial habitats present within the Survey Area were also assessed for their suitability to support otter and for their connectivity to watercourses and other suitable habitat within the surrounding area.

Reptiles

3.5.18 The habitats present within the Survey Area were assessed for their suitability to support basking, foraging and hibernating reptiles. The connectivity of any suitable habitat within the Survey Area to other habitat within the surrounding area was assessed during the survey and through studying aerial imagery. Any incidental reptile encounters made during the survey were recorded.

Water vole

3.5.19 Watercourses and waterbodies within the Survey Area were assessed for their suitability to support water vole *Arvicola amphibius*. Any incidental evidence of water vole was recorded, such as: burrows, latrines, footprints, runs in the vegetation, grazed 'lawns', feeding remains and actual sightings (Dean *et al*, 2016).

3.5.20 Terrestrial habitats present within the Survey Area were also assessed for their suitability to support water voles and for their connectivity to watercourses and other suitable habitat within the surrounding area.

Other protected and notable species

3.5.21 Habitats were additionally assessed for their potential to support other protected species, nationally or locally scarce species, or notable species.

Invasive non-native species (INNS)

- 3.5.22 Any evidence of invasive non-native plant species listed under Schedule 9 of the WCA 1981 was recorded during the survey including, but not limited to: Japanese knotweed *Reynoutria japonica*, hybrid knotweed *R. x bohemica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera*.
- 3.5.23 Evidence of invasive non-native animal species was noted incidentally and any relevant recommendations have been made in Section 5.

3.6 Limitations

- 3.6.1 Every effort has been made to provide a comprehensive description of the Site and Survey Area, but the following specific limitations apply to this appraisal.
- 3.6.2 The survey undertaken was intended to provide a rapid assessment of the habitats present within the Site and was not intended to replace detailed vegetation or protected species surveys. Where a greater level of information is necessary to inform an assessment, recommendations have been made to undertake further detailed survey.
- 3.6.3 Surveys of this type provide a snapshot of the Site at the time of the survey.
- 3.6.4 The survey was completed in January, which is outside the optimal survey period (May to September inclusive) but considered acceptable for this project due to the limited nature and extent of impacts and the common habitat types recorded. Many plant species would not be present at this time of year. However, it is considered that an adequate assessment of the habitats and protected/notable species potential of the Site has been made.

4. Results and Discussion

4.1 Statutory Designated Sites for Nature Conservation

- 4.1.1 Hampshire Biodiversity Information Centre (HBIC) and MAGIC returned five records of sites designated at the international and/or European level located within 10 km of the Site. These Sites are detailed in **Table 4**.

Table 4: Statutory Sites of International and/or European level within 10 km of the Site.

Name and Designation	Reasoning for Designation	Distance and Direction from Site
River Itchen Special Area of Conservation (SAC)	H3260 Water courses of plain to montane levels with <i>R. fluitantis</i>. S1044 Southern damselfly, <i>Coenagrion mercurial</i>. S1092 Freshwater crayfish, <i>Austropotamobius pallipes</i>. S1096 Brook lamprey, <i>Lampetra planeri</i>. S1106 Atlantic salmon, <i>Salmo salar</i>. S1163 Bullhead, <i>Cottus gobio</i>. S1355 Otter, <i>Lutra lutra</i>.	590 m north-west
Solent Maritime SAC	H1110 Sandbanks which are slightly covered by sea water all the time. H1130 Estuaries. H1140 Mudflats and sandflats not covered by seawater at low tide. H1150 Coastal lagoons. H1210 Annual vegetation of drift lines. H1220 Perennial vegetation of stony banks. H1310 Salicornia and other annuals colonising mud and sand. H1320 Spartina swards (<i>Spartinion maritimae</i>). H1330 Atlantic salt meadows (<i>Glauco-</i>	7.08 km south-east

Name and Designation	Reasoning for Designation	Distance and Direction from Site
	<i>Puccinellietalia maritima</i>). H2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('White dunes'). S1016 Desmoulin's whorl snail, <i>Vertigo moulinsiana</i>.	
Emer Bog SAC	H7140 Transition mires and quaking bogs.	7.18 km west
Solent & Southampton Water Ramsar	A complex major estuarine system consisting of coastal plain estuaries. Estuarine sediments within the site support rich populations of invertebrates that provide an important food source for wintering birds. The Solent as a whole exceeds 90,000 waders annually and the mudflats, coastal lagoons, shingle and saltmarsh provide vital feeding and roosting grounds for these. The shingle banks also provide important breeding grounds for terns. The Solent also supports 10-13% of world's population of dark-bellied Brent geese <i>Branta bernicla</i>, and 30% of the UK population.	7.5 km south west
Solent and Southampton Water Special Protection Area (SPA)	A complex major estuarine system consisting of coastal plain estuaries. Estuarine sediments within the site support rich populations of invertebrates that provide an important food source for wintering birds. The Solent as a whole exceeds 90,000 waders annually and the mudflats, coastal lagoons, shingle and saltmarsh provide vital feeding and roosting grounds for these. The shingle banks also provide important breeding grounds for terns. The Solent also	7.5 km south-west

Name and Designation	Reasoning for Designation	Distance and Direction from Site
	supports 10-13% of world's population of dark-bellied Brent geese, and 30% of the UK population.	

- 4.1.2 There was one statutory designated site relating to nature conservation of national or less than national importance located within 2 km of the Site. This Site is detailed in **Table 5**.

Table 5: Statutory Sites of Nature Conservation of National level within 2 km of the Site.

Name and Designation	Reasoning for Designation	Distance and Direction from Site
River Itchen Site of Special Scientific Interest (SSSI)	Played a significant role in the development of the theory of underfit streams that related change in stream activity to postglacial climatic change and reduced discharges. The characteristic features of underfit valleys are well-developed at the site and include sinuosity on a large scale.	560 m north-west

4.2 Non-statutory Designated Sites

- 4.2.1 There were 39 non-statutory designated sites for nature conservation within 2 km of the Site, all of which pertain to Sites of Importance for Nature Conservation (SINCs). Six SINC's intercepted or bordered the Site boundary, details are provided in **Table 6**.

Table 6: Non-Statutory Sites for Nature Conservation within 2 km of the Site.

Name and Designation	Reasoning for Designation
The Mount, Fair Oak and Horton Heath	Criteria 1A: Ancient Semi-natural Woodlands.
Allbrook Clay pit	Criterion 2D/5A: Areas of open freshwater.
Judges Gully Meadow	Criteria 2B: Semi-improved grasslands.
Tippers Copse	Criteria 1A: Ancient Semi-natural Woodlands.

Name and Designation	Reasoning for Designation
Chestnut Gully Wood	Criteria 1A: Ancient Semi-natural Woodlands.
Ponds and Meadow adjacent to Wyvern Technology College	Criteria 6A: Supports one or more Hampshire Notable Species.
Breach and Gully Copses	Criterion 1A/1B/1Cii: Ancient Semi-natural Woodlands, Other woodland and Wet Woodlands.
Crowdhill Copse	Criterion 1A/1B: Ancient Semi-natural Woodlands and Other woodland.
Gore Copse	Criteria 1A: Ancient Semi-natural Woodlands.
Quobleigh Pond and Woods	Criterion 1A/1Cii: Ancient Semi-natural Woodlands and Wet Woodlands.
Breach Farm Meadows	Criterion 5B/6A: Fens, flushes, seepages, springs and inundation grasslands of floodplains and supports one or more Hampshire Notable Species.
Brick Kiln Copse, Bishopstoke	Criteria 1A: Ancient Semi-natural Woodlands.
Wyvern Technology College Meadow	Criteria 2A: Agriculturally unimproved grasslands.
Upperbarn Copse	Criteria 1B: Other woodlands.
Marshy Grassland, Bishopstoke	Criterion 2B/5B/6A: Semi-improved grasslands, Fens, flushes, seepages, springs and inundation grasslands of floodplains and supports one or more Hampshire Notable Species.
Ham Farm Meadow	Criterion 2A/5B: Agriculturally unimproved grasslands and Fens, flushes, seepages, springs and inundation grasslands of floodplains.

Name and Designation	Reasoning for Designation
Park Hills Wood	Criteria 1A: Ancient Semi-natural Woodlands.
Knowle Lane Open Space	Criteria 7A: Sites of nature conservation interest which occur in areas otherwise deficient in such interest, and/or are known to be of particularly high value to local communities.
Ashtrim Nurseries	Criteria 2D.
Allbrook Hill Copse	Criteria 1A: Ancient Semi-natural Woodlands.
Stanford Meadow	Criterion 2B/5B: Semi-improved grasslands and fens, flushes, seepages, springs and inundation grasslands of floodplains.
Breach Sling Copse and Stoke Common Copse	Criterion 1A/1B/1Cii: Ancient Semi-natural Woodlands, Other woodland and Wet Woodlands.
Fielders Farm Meadows (Eastleigh)	Criterion 2D/5B/6A: Fens, flushes, seepages, springs and inundation grasslands of floodplains and supports one or more Hampshire Notable Species.
Fielders Farm Meadows (Winchester)	Criteria 2D.
Poplar Plantation (Stoke Park Wood)	Criterion 1A/1Cii: Ancient Semi-natural Woodlands and Wet Woodlands.
Stoke Park Wood	Criterion 1B/1Cii: Other woodland and Wet Woodlands.
Hall Lands Farm Wood	Criteria 1A: Ancient Semi-natural Woodlands.
Hall Lands Copse	Criteria 1A: Ancient Semi-natural Woodlands.
Meadows at Allbrook	Criteria 2D
Park Lane Footpath Allbrook	Criteria 1A: Ancient Semi-natural Woodlands

Name and Designation	Reasoning for Designation
Otterbourne Wood	Criteria 1A: Ancient Semi-natural Woodlands
Meadow between Railway and River Itchen (Eastleigh)	Criteria 5B: Fens, flushes, seepages, springs and inundation grasslands of floodplains
Judges Gully Copse	Criterion 1B/1Cii: Other woodland and Wet Woodlands
Hardings Lane Wooded Bank	Criteria 1A: Ancient Semi-natural Woodlands
Meadow between Railway and River Itchen (Winchester)	Criteria 5B: Fens, flushes, seepages, springs and inundation grasslands of floodplains
Hill Copse, Fair Oak and Horton Heath	Criteria 1A: Ancient Semi-natural Woodlands
Knowlehill Copse	Criteria 1A: Ancient Semi-natural Woodlands
Swamp West of Recreation Grounds	Criterion 5A/5B/6A: Areas of open freshwater; fens, flushes, seepages, springs and inundation grasslands of floodplains and supports one or more Hampshire Notable Species
West Horton Farm Woods	Criterion 1Cii/5B/6A: Wet Woodlands, fens, flushes, seepages, springs and inundation grasslands of floodplains and supports one or more Hampshire Notable Species

4.2.2 There are opportunities for connecting habitats to be planted between Stoke Park Wood, Crowdhill Copse and Upperbarn Copse as part of this scheme. There are also opportunities for enhancements to be made to Brick Kiln Copse and Judges Gully Copse as part of this scheme.

4.3 Other Important Habitats

Ancient woodland

4.3.1 MAGIC identified 27 ancient woodland sites within 2 km of the Site listed within the Ancient Woodland Inventory (AWI).

4.3.2 The closest of these records pertained to Brick Kiln Copse which lies within the Site to the north of Bowlake Fish Farm. Hill Copse and Stoke Park Wood lie on the Site boundary.

- 4.3.3 It is understood that any habitats or impact pathways such as hedgerows or woodland connecting the Site to nearby ancient woodland could be improved to generate further credits.

Habitats of Principal Importance

- 4.3.4 Nine Habitats of Principal Importance (HPI) were recorded within 2 km of the Site. These pertained to: Deciduous woodland; Traditional orchards; Woodpasture and Parkland; Reedbeds; Lowland Meadows; Purple moor grass and rush pasture; Coastal and floodplain grazing marshland; Good quality Semi-improved Grassland; and Lowland fens. The closest habitats were Deciduous Woodland which lies inside the Site to the south and east.
- 4.3.5 Given the distance from the Site, it is considered that the Habitats of Principal Importance could be improved to generate further credits.

Aquatic habitats

- 4.3.6 50 ponds were identified within 250 m of the Site. Forty-five ponds were located within the Site boundary, 40 of these were within Bowlake Fish Farm, these are mapped in **Figure 2**.
- 4.3.7 Four watercourses were identified within 30 m of the Site, these all pertained to ditch complexes. One watercourse was located within the Site, named Bow Lake stream, which is a narrow stream running from the north east to the south west boundaries of the Site, see **Figure 2**.
- 4.3.8 There is hydrological connectivity to the Site, therefore watercourses and waterbodies could be improved to generate further credits.

River Condition Assessment

- 4.3.9 MoRPh5 surveys were carried out on the watercourse located on Site (or 'Reach'), consisting of four sub reaches. Each sub-reach consisted of five contiguous modules of 10 m in length. The sub-reaches were located at approximately equal intervals to provide a representative sample of the whole watercourse.
- 4.3.10 The calculated condition scores for each Site and sub-reach are provided in **Table 7**. The condition score for the Site is **Moderate**.

Table 7. Preliminary and final condition scores for each Site and sub-reach.

Sub-reach Number	Preliminary Condition Score	Final Condition Score	Average Final Condition Score
1	1.16	Moderate	Moderate
2	1.51	Fairly Good	

Sub-reach Number	Preliminary Condition Score	Final Condition Score	Average Final Condition Score
3	1.45	Fairly Good	
4	0.67	Moderate	

4.3.11 The river type was calculated as **Type K** for the Site.

Riparian and In-Watercourse Encroachment

4.3.12 A compacted gravel track was present along approximately 350 m of the watercourse and encroached within 4 m of the bank top. Therefore, the riparian encroachment band is **major**.

4.3.13 There was little to no engineered bank revetment and no encroachment into the channel. Therefore, the in-watercourse encroachment is considered to be **no encroachment**.

4.4 Habitat Assessment

4.4.1 The habitats within the Survey Area are detailed below in order of size (largest area to smallest area). The descriptions should be read with reference to the Habitat map (see **Figure 2**) and the habitat photographs in **Appendix 1**. A full species list of each habitat is provided in **Appendix 5**.

Modified Grassland g4

4.4.2 Modified grassland was the dominant habitat on Site and mainly comprised the fields within the farmland which were previously used for cattle grazing. The dominant species was perennial rye grass *Lolium perenne* with frequent cock's foot *Dactylis glomerata*, annual meadow grass *Poa annua*, Sweet vernal grass *Anthoxanthum odoratum* and tufted hairgrass *Deschampsia cespitosa*. Other occasionally occurring species included creeping buttercup *Ranunculus repens*, chickweed *Stellaria media*, dandelion *Taraxacum officinale* and other common grassland species.

4.4.3 The modified grassland received a condition score of poor as it failed the essential criteria (for scoring at least moderate) of at least 6-8 species per m².

4.4.4 Modified grassland was also present within Bowlake Fish Farm surrounding the ponds, which also scored poor for the same reason as above.

Wet Woodland w1d

4.4.5 A parcel of wet woodland labelled as Judges Gully Copse (W1, Figure 2) on Ordnance Survey mapping, was present on the western side of the Site. The woodland contained a mix of native and

non-native species. The dominant species was larch *Larix decidua* with frequent alder *Alnus glutinosa* and occasional silver birch *Betula pendula*. The shrub layer contained frequent holly *Ilex aquifolium* and occasional hazel *Coryllus avellana*. Species abundant in the field layer included remote sedge *Carex remota* and pendulous sedge *C. pendula*.

4.4.6 W1 received a condition score of moderate.

4.4.7 Another parcel of wet woodland (W2, Figure 2) was also present within the western extent of the Site. This area was heavily inundated with surface water that slowly flowed to the north and drained from adjacent land via small stream channels and culverts. The dominant species included oak *Quercus robur*, black poplar *Populus nigra* and beech *Fagus sylvatica* with abundant willow *Salix* sp., hazel *Coryllus avellana* and sweet chestnut *Castanea sativa*. Other frequently occurring species included silver birch *Betula pendula*, holly *Ilex aquifolium* and yew *Taxus baccata*. The ground flora was relatively sparse apart from a significant coverage of hemlock water dropwort *Oenanthe crocata* across the inundated areas.

4.4.8 W2 received a condition score of moderate.

Lowland Mixed Deciduous Woodland w1f

4.4.9 A parcel (W3) of ancient woodland was located on the western side of the Site. This woodland, Brick Kiln Copse, is designated as a SINC. The woodland contained dominant mature pedunculate oak with abundant hazel, frequent silver birch and holly and occasional ash *Fraxinus excelsior*. Hazel coppice was present on the western side of the woodland. The understorey was relatively sparse, giving the woodland a very open structure.

4.4.10 The woodland received a condition score of good.

4.4.11 Three woodland blocks bordered the Site, situated outside of the Site boundary. These were Stoke Park Woods (southern boundary), Crowdhill Copse (south-eastern boundary) and Upperbarn Copse (eastern boundary). Stoke Park Woods is a designated SINC comprised of a mixture of ancient woodland and newly planted trees. The structure of the woodland was well connected with a three age classes and storeys. The woodland had a wide range of trees species present, with relative abundance changing depending on the location. Overall, the dominant mature species of trees comprised oak, beech, hazel, sweet chestnut and willow sp. Other abundant and frequently occurring species included silver birch alder *Alnus glutinosa*, blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna*, field maple *Acer campestre*, yew and ash *Fraxinus excelsior*. Species identified within the shrub and ground layer included bramble, wood avens *Geum urbanum*, lords and ladies *Arum maculatum*, primrose *Primula vulgaris*, bracken *Pteridium aquilinum* and other ancient woodland indicators like butcher's broom *Ruscus aculeatus*, dog's mercury *Mercurialis*

perennis and early dog violet *Viola reichenbachiana*. Coppiced hazel was particularly prevalent along the woodland edges, adjacent to the grassland fields.

4.4.12 The species composition and general woodland structure of Crowdhill Copse and Upperbarn Copse was similar to Stoke Park Woods, however only the woodland edge habitats (plus areas that could be observed via binoculars from the boundary fence) were surveyed to inform this assessment.

4.4.13 The woodland blocks received a condition score of good.

Eutrophic Standing Water r1a

4.4.14 A pond was present within Judges Gully Copse, labelled as P1, this was artificially connected to the fish farm via a small ditch. P45 was a small pond connected to a drainage ditch that ran between the line of trees / woodland corridor G6.

4.4.15 Forty artificial ponds were present within the Bowlake Fish Farm these have been labelled as P2-P41. These were all roughly rectangular ponds of varying sizes. Apart from differences in size, all the ponds were very similar in appearance and lacked any visible aquatic vegetation.

4.4.16 Three artificial ponds were present adjacent to Stoke Park Farm buildings, labelled P42-P44.

4.4.17 A summary of the condition scores are provided in **Table 8**. Due to the number of ponds within the fish farm and the similarity in their condition and management, they have been grouped together by size for the purposes of the assessment.

Table 8. Condition scores for on-site waterbodies

Pond/Group Number	Location	Condition Assessment Score
P1	Judges Gully Copse (wet woodland)	Moderate
Group 1 (approx. 150 m ²) (P11 – P16)	Bowlake Fish Farm	Poor
Group 2 (approx. 350 m ²) (P20)	Bowlake Fish Farm	Poor
Group 3 (approx. 400 m ²) (P7, P8, P21)	Bowlake Fish Farm	Poor
Group 4 (approx. 450 m ²) (P4 – 6)	Bowlake Fish Farm	Poor

Pond/Group Number	Location	Condition Assessment Score
Group 5 (approx. 500 – 700 m ²) (P3, P9, P10, P17, P22, P27, P34, P35, P37 – P41)	Bowlake Fish Farm	Poor
Group 6 (approx. 1000 m ²) (P18, P19, P26)	Bowlake Fish Farm	Poor
Group 7 (approx. 1100 m ²) (P2)	Bowlake Fish Farm	Poor
Group 8 (approx. 1400 m ²) (P23 – P24)	Bowlake Fish Farm	Poor
P42	West of the farm complex	Poor
P43	West of the farm complex	Poor
P44	West of the farm complex	Poor
P45	Within G6	Moderate

Other Broadleaved; Woodland w1g

4.4.18 Four small parcels of woodland (W5 – W8) were scattered throughout the Site. These woodlands did not match the description of lowland mixed deciduous woodland types and were fragmented in nature. These parcels comprised a mix of native species including hawthorn, blackthorn, hazel, oak, willow sp., ash and field maple.

4.4.19 All four parcels had a condition score of moderate.

Hedgerow (priority habitat) h2a

4.4.20 Hedgerow 1 (H1) contained a mix of hawthorn, dogwood *Cornus sanguinea* and elder *Sambucus nigra*. This was a short hedgerow located within Bowlake Fish Farm. H1 was assessed as having a condition score of moderate, however, did not constitute an important hedgerow under The Hedgerow Regulations (1997).

4.4.21 H2 was located along the northern boundary of Bowlake Fish Farm and bordered a footpath running alongside Brick Kiln Copse. Hawthorn was the dominant species, with abundant bramble. H2 was assessed as having a condition score of poor, however, did not constitute an important hedgerow under The Hedgerow Regulations (1997).

4.4.22 H3 was located along the easternmost boundary that bordered a footpath / gravel track. The outgrown hedgerow comprised hawthorn, bramble, elder and ash. H3 was assessed as having a condition score of moderate, however, did not constitute an important hedgerow under the Hedgerow Regulations (1997).

4.4.23 H4 and H5 ran adjacent to both sides of the access track leading to Stoke Park Farm. These hedgerows appeared to be regularly maintained but became unmanaged and outgrown within the eastern most extent that connected to the small woodland blocks (W5 and W6). The species comprised hawthorn, blackthorn, sycamore, elder, field maple and ash. Both H4 and H5 were assessed as having a condition score of moderate, however, did not constitute important hedgerows under the Hedgerow Regulations (1997).

4.4.24 H6 and H7 ran parallel to the access track (Sewall Drive) and connected to a line of trees / woodland corridor (G6) and a wet woodland block (W2) within the western extent of the Site. The species composition was primarily hawthorn and blackthorn with occasional field maple and elder. H7 also contained a small number of semi-mature trees. Both H6 and H7 were assessed as having a condition score of moderate, however, did not constitute important hedgerows under the Hedgerow Regulations (1997).

4.4.25 H8 was an outgrown hedgerow that surrounded the garden of the residential farm building. This hedgerow primarily comprised hawthorn, blackthorn and bramble. H8 was assessed as having a condition score of moderate, however, did not constitute important hedgerows under the Hedgerow Regulations (1997).

4.4.26 The hedgerow locations are shown on **Figure 2**.

Line of Trees w1g6 and Scattered Trees

4.4.27 Numerous scattered and lines of trees were present within and intersecting the grassland fields compartments that formed the Site boundaries.

4.4.28 It is understood that Eastleigh Borough Council have pledged to plant 160,000 trees over the course of 10 years and seek to gain a better understanding as to how a number of these may be planted across selected survey areas.

A tree survey was conducted to help provide a greater understanding of the current tree coverage and identify opportunities to implement additional planting. The results of the tree survey are in **Table 9** below.

Table 9. Tree Survey Results

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G1	Line of trees	Oak Hawthorn Dogwood Hazel	Mature	50 cm	7 m	3 m	Moderate	Dominated by mature oak with younger trees. Bordering footpath alongside fish farm.	
G2	Line of trees	Oak Hazel Blackthorn Ash Beech	Mature	40 cm	12 m	3.25 m	Moderate	Dominated by mature oak with relatively sparse and gappy understory. Runs adjacent to public footpath with scouring from ground water run-off.	

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G3	Line of trees	Oak Goat willow Ash Blackthorn Dogwood	Mature	50 cm	14 m	3 m	Poor	Dominated by oak and willow with an understory comprised primarily of blackthorn and goat willow. Runs parallel to a drainage ditch and track.	
G4	Line of trees	Goat willow White willow Oak Hazel Blackthorn Hawthorn Ash Black poplar	Semi- mature	30 cm	8 m	3.5 m	Moderate	Dominated by willow and oak with an understory largely comprised of hazel and hawthorn. Runs adjacent to a small stream with relatively steep banks to the east and a track to the west.	

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G5	Line of trees	Hawthorn Blackthorn Elder Oak Willow Field maple Birch Ash	Semi-mature	8 cm	3 m	1 m	Moderate	Appeared to be an outgrown hedgerow with frequent semi-mature and immature trees. Runs adjacent to track and minor wet ditch.	
G6	Line of trees / woodland corridor	Willow sp. Black poplar Field maple Sycamore Hazel Hawthorn Blackthorn Ash Lawson cypress <i>Chamaecyparis lawsoniana</i> Cherry laurel <i>Prunus laurocerasus</i>	Semi-mature to mature	30 cm	8 m	3.75 m	Moderate	No species was consistently dominant across the length of the tree line. The linear feature was relatively wide with a width of several trees. Relatively recent vegetation management severed the tree line around the pond (likely to open up the waterbody). The line of trees / woodland corridor contained a drainage ditch that fed a pond within the centre. A narrow strip of associated riparian vegetation (primarily common reed) was also present adjacent to the waterbody.	

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G7	Line of trees	Oak Hawthorn Blackthorn Field maple Hazel Lawson cypress Holly Ash	Mature	30	12 m	3 m	Good	The dominant mature specimens were oak with a dense scrub understory comprised primarily of hazel, hawthorn and blackthorn. Ancient woodland indicator species (butcher's broom) were present in shrub layer.	
G8	Line of trees	White willow Other willow sp. Oak Hawthorn Blackthorn Hazel Field maple Alder Silver birch Ash	Mature	45	14	3.75	Good	Mature tree line dominated by willow with a moderately dense scrub understory. There were occasional medium sized gaps within the canopy. Ran parallel to the banks of the Bow Lake stream with infrequent patches of riparian vegetation.	

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G9	Line of trees	Oak Hawthorn Blackthorn Hazel Elder Field maple Silver birch Holly	Mature	35	12	3	Moderate	The line of trees was formed of two distinct lines running parallel either side of a heavily inundated footpath. There were large gaps within the canopy, beneath which was a mosaic of dense understory of scrub, open areas and immature specimens. Ancient woodland indicator species were present (butcher's broom) in the areas with lower scrub cover.	
G10	Line of trees	Oak Blackthorn Ash	Semi- mature and immature	10	5	1.5	Moderate	Line of immature and relatively recently planted trees (tree guards still present) running adjacent to track.	

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G11	Line of trees with	Oak Hawthorn Blackthorn Elder Field Maple Holly	Semi- mature	25	2	1	Moderate	The line of trees appeared to be an area of once scattered trees with an adjacent hedgerow that had since become outgrown, which now formed a dense scrub understory.	
G12	Scattered trees	Oak	Semi- mature	30	10	2.75	Moderate	5 x scattered trees of similar age class and condition situated adjacent to the line of trees (G11) that formed the eastern boundary.	

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G13	Scattered trees	Oak	Mature	40	10	3	Moderate	5x scattered trees of similar age class and condition situated adjacent to the line of trees (G10) that divides the northernmost land parcels.	
G14	Scattered trees	Oak	Mature	55	15	4.25	Moderate	6x scattered trees of similar age class and condition situated adjacent to the line of trees (G15) that forms the northern site boundary.	

Tree / Group ID	Type	Species composition	Age class	DBH (avg)	Height (avg)	Canopy spread - radius (avg)	Condition	Notes	Photo
G15	Line of trees	Oak Ash Hawthorn Blackthorn Willow Field maple Hazel Elm Silver birch Holly	Mature	50	16	4.5	Good	A mature tree line dominated by oak with frequent ash and a dense scrub understory comprised primarily of bramble, hawthorn, field maple and blackthorn.	

4.5 BNG Baseline

- 4.5.1 Baseline habitats within the Survey Area comprised modified grassland, wet woodland, lowland mixed deciduous woodland, other woodland; broadleaved, ponds (non-priority habitat), developed land; sealed surface, vegetated garden, artificial unvegetated, unsealed surface, native hedgerow, native species rich hedgerow, native hedgerow with trees, line of trees and other rivers and streams.
- 4.5.2 For this assessment the baseline habitat types and areas have been taken from the UKHabs survey carried out as part of the PEA for the Site (see **Figure 2**).
- 4.5.3 The area of the Survey Area has been calculated at 103.12 ha. The habitat type, condition, areas, and Habitat Units (HU), Hedgerow Units (HeU) and River Units (RU) are provided within Tables 10, 11 & 12 below. Baseline habitats have produced an overall biodiversity value of 284.56 HU, 28.20 HeU and 11.67 RU for the Site.
- 4.5.4 The raw BNG data is provided in **Appendix 4**.

Table 10. Baseline area-based habitats, condition and Habitat Units (HU)

Habitat Type	Condition	Area (ha)	Habitat Units (HU)
Modified grassland	Poor	89.972	179.94
Wet woodland	Moderate	3.605	47.59
Lowland mixed deciduous woodland	Good	1.571	32.52
Other woodland; broadleaved	Moderate	1.467	11.74
Ponds (non-priority habitat)	Moderate	0.064	0.51
Ponds (non-priority habitat)	Poor	2.880	11.52
Developed land; sealed surface	N/A - Other	1.791	0.00
Vegetated garden	N/A - Other	0.369	0.74
Artificial unvegetated, unsealed surface	N/A - Other	1.757	0.00
Total Habitat Units (HU)			284.56

Table 11. Baseline Hedgerow Habitats, Condition and Hedgerow Units (HeU)

Habitat Type		Condition	Length (km)	Hedgerow Units (HeU)
Native hedgerow	H1	Moderate	0.049	0.20
	H2	Poor	0.237	0.47
	H3	Moderate	0.181	0.72
	H6	Moderate	0.255	1.02
	H8	Moderate	0.130	0.52
Native species rich hedgerow	H4	Moderate	0.300	2.40
	H5	Moderate	0.187	1.50
Native hedgerow with trees	H7	Moderate	0.205	1.64
Line of trees	G1	Moderate	0.179	0.72
	G2	Moderate	0.320	1.28
	G3	Poor	0.144	0.29
	G4	Moderate	0.296	1.18
	G5	Moderate	0.439	1.76
	G7	Good	0.358	2.15
	G8	Good	0.710	4.26
	G9	Moderate	0.317	1.27
	G10	Moderate	0.341	1.36
	G11	Moderate	0.538	2.15
	G15	Good	0.553	3.32
Total Hedgerow Units (HeU)				28.20

Table 12. Baseline River Habitats, Condition and River Units (RU)

Habitat Type	Condition	Length (km)	River Units (RU)
Other rivers and streams	Moderate	1.128	11.67
Total River Units (RU)			11.67

4.6 Protected Species

Amphibians, including Great Crested Newt (GCN)

- 4.6.1 HBIC returned 25 recent records (within the last ten years) of amphibians from within 2 km of the Site. These pertained to GCN *Triturus cristatus* and the common toad *Bufo bufo*.
- 4.6.2 15 records of GCN were returned by HBIC. The closest record was 1.3 km northeast of the Site, dated 2015.
- 4.6.3 MAGIC returned 11 granted European Protected Species (EPS) licences for GCN, these are detailed in **Table 13**.

Table 13: EPS Licences relating to GCN within 2 km of the Site.

Licence Number	Date	Details	Distance and Direction from Site
2018-35734-EPS-MIT	16/08/2018 - 31/12/2025	Licence to allow damage and destruction of a resting place.	1.35 km south east
2017-31242-EPS-MIT	11/10/2017 - 31/12/2029	Licence to allow damage and destruction of a resting place.	1.4 km north west
2019-40025-EPS-MIT	25/04/2019 - 01/07/2026	Licence to allow damage and destruction of a resting place.	1.6 km south
2020-44604-EPS-MIT-1	01/05/2020 - 31/07/2028	Licence to allow damage and destruction of a resting place.	1.6 km south

Licence Number	Date	Details	Distance and Direction from Site
2020-44604-EPS-MIT-2	22/10/2020 - 31/07/2028	Licence to allow damage and destruction of a resting place.	1.6 km south
2020-46989-EPS-MIT	01/05/2020 - 29/04/2022	Licence to allow damage and destruction of a resting place.	1.6 km south
2020-44604-EPS-MIT-3	04/02/2021 - 31/07/2028	Licence to allow damage and destruction of a resting place.	1.6 km south
2020-46989-EPS-MIT-1	04/02/2021 - 29/04/2022	Licence to allow damage and destruction of a resting place.	1.6 km south
2018-35734-EPS-MIT-1	16/08/2018 - 31/12/2025	Licence to allow damage and destruction of a resting place.	1.35 km south east
EPSM2009-903	17/06/2009 - 30/09/2009	Licence to allow damage and destruction of a resting place.	1.5 km south east
2018-35734-EPS-MIT-2	16/08/2018 - 31/12/2025	Licence to allow damage and destruction of a resting place.	1.35 km south east

4.6.4 MAGIC returned 35 GCN class licence survey returns within 2 km of the Site. These dated between 06/05/2014 and 09/06/2016. The nearest was 1.4 km north-east of the Site.

4.6.5 50 potentially suitable waterbodies were identified within 250 m of the Site using MAGIC and aerial imagery. 45 of these ponds were within the Site boundary, 40 of which were fishponds within Bowlake Fish Farm. The 40 ponds within the Bowlake can be ruled out for potential to support breeding GCN due to the high fish populations that will prey upon GCN eggs and larvae.

Waterbodies outside of the Site boundary were not visited during the survey. Due to the number of ponds within the fish farm and the similarity in their condition and management, they have been grouped together by size for the purposes of the assessment.

4.6.6 Locations of these waterbodies are provided in **Table 14** below.

Table 14. potentially Suitable Waterbodies within 250 m

Waterbody/Group No.	Location	Description
P1	SU 47312 20198, Judges Gully Copse (wet woodland), within the Site	A small woodland pond connected to a drainage ditch that ran between the line of trees / woodland corridor G6
P42	SU 47827 20393, within the Site	Small pond possibly used for rearing fish. Current use and stock uncertain.
P43	SU 47847 20370, within the Site	Small pond possibly used for rearing fish. Current use and stock uncertain.
P44	SU 47863 20354, within the Site	Small pond possibly used for rearing fish. Current use and stock uncertain.
P45	SU 47828 20115, within the Site	A small pond connected to a drainage ditch that ran between the line of trees / woodland corridor G6.
P46	SU 48363 20834, 140 m north east	A small lake (Bow Lake) connected to the Bow Lake stream that intersects the northern field parcels and connects to Bowlake Fish Farm
P47-P50	SU 48588 19408, 160 m south	Four small ponds off Savernake Way, which are not visible on MAGIC however can be seen on Google maps satellite imagery.

4.6.7 Five watercourses were located within the Site, Bow Lake stream, which is a narrow stream running from the northeast to the south west boundaries of the Site and a network of drainage ditches and small streams. These waterbodies were considered unsuitable for GCN due to flowing water.

4.6.8 The five ponds within the Site boundary were subject to a Habitat Suitability Index (HSI) assessment following guidance outlined in Amphibian and Reptile Group (ARG) UK Advice Note 5 (ARG, 2010) to assess suitability of waterbodies to support GCN. **Table 15** below presents the results of the HSI Assessment.

Table 15: Habitat Suitability Index Assessment Results

Waterbody Survey Number	NGR	Suitability Index Score	Suitability Index Score Category
P1	SU 47312 20198	0.79	Good
P42	SU 47827 20393	0.68	Average
P43	SU 47847 20370	0.66	Average
P44	SU 47863 20354	0.66	Average
P45	SU 47828 20115	0.74	Good

4.6.9 Due to the abundance of nearby records and multiple ponds within close proximity, all of which had good connectivity to terrestrial habitat, it is considered GCN have the potential to be found on the Site.

Badger

4.6.10 HBIC returned 17 recent records of badger *Meles meles* from within 2 km of the Site. The closest records were at three locations within the site boundary, dated from 2013 to 2015.

4.6.11 No evidence of badger, including setts or fields signs such as latrines or hairs, were recorded during the Site visit.

4.6.12 The Site is considered to offer suitable habitat for badger. The woodland within and adjacent to the site provided suitable sett creation habitat and the grassland, hedgerows and lines of trees provided suitable foraging and dispersal habitat.

4.6.13 Due to the abundance of nearby records, it is considered badger have the potential to be found on

the Site.

4.6.14 Works should be carried out under Best Practice Measures Construction Guidelines with regards to badger throughout the duration of the work, as detailed in Section 5.1.

Bats

4.6.15 HBIC returned 649 records of 11 bat species present within 2 km of the Site.

4.6.16 These include serotine *Eptesicus serotinus*, barbastelle *Barbastella barbastellus*, Daubenton's bat *Myotis daubentonii*, Brandt's bat *Myotis brandtii*, Natterer's bat *Myotis nattereri*, Whiskered bat *Myotis mystacinus*, Natterer's/ Brandt's species, Myotis bat species *Myotis spp.*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, unidentified pipistrelle bat species *Pipistrellus spp.*, brown long-eared bat *Plecotus auratus*, unidentified long-eared bat species *Plecotus spp.* and unidentified bat species *Chiroptera*.

4.6.17 The closest bat records pertained to Soprano pipistrelle recorded either on or just within the Site boundary to the south east, dated 2020.

4.6.18 A search on MAGIC returned 14 records of granted EPS mitigation licences relating to bats within 2 km of the Site, the details of which are provided in **Table 16**.

Table 16: Granted EPS licences for bats within 2 km of the Site

Licence number	Species	Approximate distance and direction from the Site	Licence impacts	Date
EPSM2013-6129	Common pipistrelle, soprano pipistrelle, brown long-eared.	1.7 m north	Licence to allow destruction of a resting place.	19/08/2013-01/10/2014
EPSM2012-4025	Common pipistrelle, soprano pipistrelle, brown long-eared.	690 m west	Licence to allow destruction of resting and breeding place.	23/04/2012 - 31/12/2014
EPSM2012-4094	Common pipistrelle, brown long-eared.	1.7 km north	Licence to allow destruction of a resting place.	01/04/2012 - 31/12/2012
EPSM2013-5897	Common	850 m north	Licence to allow	12/06/2013 -

Licence number	Species	Approximate distance and direction from the Site	Licence impacts	Date
	pipistrelle.		destruction of a resting place.	31/08/2014
2018-37589-EPS-MIT	Common pipistrelle.	1.95 km west	Licence to allow destruction of a resting place.	04/10/2018-31/12/2020
2018-37589-EPS-MIT-1	Common pipistrelle.	1.95 km west	Licence to allow destruction of a resting place.	03/05/2019 - 31/12/2021
2019-39954-EPS-MIT	Common pipistrelle, soprano pipistrelle.	1.6 km south	Licence to allow destruction of a resting place.	20/03/2019 - 31/12/2024
2019-43153-EPS-MIT	Common pipistrelle, brown long-eared.	630 m west	Licence to allow damage of a breeding resting place.	29/10/2019 - 28/10/2024
2018-37589-EPS-MIT-2	Common pipistrelle.	1.95 km west	Licence to allow destruction of a resting place.	20/04/2020-31/12/2021
2015-13185-EPS-MIT	Common pipistrelle, soprano pipistrelle, brown long-eared.	750 m west	Licence to allow destruction of a resting place.	04/08/2015 - 03/08/2020
2015-16388-EPS-MIT	Common pipistrelle	1.45 km north west	Licence to allow destruction of a resting place.	01/12/2015 - 01/12/2020
2020-48450-EPS-MIT	Soprano pipistrelle.	1.5 km south east	Licence to allow destruction of a resting place.	01/08/2020 - 31/12/2026
2015-7650-EPS-MIT	Common pipistrelle, soprano pipistrelle, brown	1.2 km north	Licence to allow destruction of a breeding site and	27/04/2015 - 30/04/2020

Licence number	Species	Approximate distance and direction from the Site	Licence impacts	Date
	long-eared.		resting place.	
2017-31848-EPS-MIT	Common pipistrelle	1.3 km north	Licence to allow destruction of a breeding site and resting place.	16/11/2017 - 09/11/2027

4.6.19 It is possible that multiple bat species may utilise the woodland on-Site for commuting, foraging, and roosting, especially using the hedgerow and scrub habitats bordering the Site as linear flight corridors. Furthermore, the perimeter surrounding the Site has low levels of light pollution which will reduce disturbance to bats and therefore encourage them onto Site.

4.6.20 No potential roost features were identified in the trees on Site, although it should be noted that it was not possible to assess every tree due to time constraints, therefore it is possible that PRFs are present within the semi-mature and mature trees that form the tree lines, scattered trees and adjacent woodland (Stoke Park Wood, Crowdhill Copse and Upperbarn Copse). In particular, due to the presence of numerous mature oak trees, Brick Kiln Copse (situated within the Site boundary) is considered likely to support roosting bats.

4.6.21 Several PRFs were identified within the farm buildings at Stoke Park Farm and Bowlake Fish Farm, details are provided in **Table 17** below, with locations shown on **Figure 3**.

Table 17. Details of BRP PRFs in buildings

Building Number/Description	BRP	PRF	PRF Description	Photograph
B1&2 Two adjoined corrugated metal warehouse buildings at Bowlake Fish Farm.	Low	1	Gaps present in roof vents.	
B3 Brick and plaster farmhouse with wooden cladding on SE elevation. Tiled gable roof.	High	1	Missing roof tile, SW elevation.	
		2	Multiple missing roof tiles, SE elevation.	

Building Number/Description	BRP	PRF	PRF Description	Photograph
		3	Gap between roof tiles and eaves on both sides of the gable end, NW facing.	
		4	Gap beneath eaves and roof tile caps, NW aspect of extension	 
		5	Multiple gaps beneath roof tiles, NE aspect	

Building Number/Description	BRP	PRF	PRF Description	Photograph
B4 Breezeblock and corrugated metal barn with adjoining flat roofed wood cladded building and brick building with corrugated metal roof.	High	1	Small gap above breezeblock allowing possible ingress into interior of barn, SW elevation.	
		2	Gaps under corrugated sheeting at NE gable end.	
		3	Gap between bargeboard and gutter, NE elevation.	
		4	Gaps in brickwork, NE elevation.	

Building Number/Description	BRP	PRF	PRF Description	Photograph
		5	Gaps under corrugated metal sheeting, NE elevation.	
		6	Hole in breezeblock, NE elevation.	
		7	Gaps under corrugated roof, NE elevation.	

Building Number/Description	BRP	PRF	PRF Description	Photograph
B5 Brick outbuilding with metal fascia and corrugated metal roof & door. Access available into the interior through the gap above the door, however there was no internal ceiling or roof void suitable for roosting bats.	Low	1	Gap behind metal fascia	
B6 Corrugated metal and concrete barn (open on one side) with metal shutter doors	Negligible	-	No PRFs identified	
B7 Open barn constructed of steel beams, concrete and breezeblock with a pitched corrugated fibre cement roof	Negligible	-	No PRFs identified	

Building Number/Description	BRP	PRF	PRF Description	Photograph
B8, B9 & B10 Open barns constructed of steel beams, concrete and breezeblock with a pitched corrugated fibre cement / asbestos roof	Negligible	-	No PRFs identified	 

4.6.22 Due to the abundance of nearby records and suitable habitat within and immediately adjacent to the Site, it is considered foraging, commuting and roosting bats have the potential to be present on the Site.

Birds

4.6.23 HBIC returned 3446 records of 86 bird species from within 2 km of the Site. These included 26 species that are protected under Schedule 1 of the WCA 1981, 24 species listed as Species of Principal Importance (SPI) under Section 41 of the NERC Act, 58 species listed as Red or Amber in the Birds of Conservation Concern (BoCC) (Stanbury *et al.*, 2021) as detailed in **Appendix 3**.

4.6.24 An old nest was recorded in Building 4 at Stoke Park Farm. The woodland, scrub and hedgerow on Site are likely to provide suitable foraging and nesting habitat for a common assemblage of birds. The grassland fields could be used by ground nesting birds and as foraging resource for barn owls which are known to be present in the area.

4.6.25 Due to the abundance of nearby records and suitable habitat on-Site and in the surrounding area, birds are likely to be nest and forage on the Site.

Fish

4.6.26 HBIC returned three records of European eel within 2 km of the Site. These records were 960 m south east of the Site in the River Itchen, dated 2017.

4.6.27 Although no fish were seen at the time of survey, it is likely that the watercourse running through the Site, Bow Lake, supports an assemblage of fish species. A fish farm is present on the western side of the Site which is artificially stocked with a variety of fish species for the purposes of restocking fishing lakes and ornamental fish for retail.

4.6.28 Bow Lake is a tributary of the River Itchen and therefore has direct connectivity with watercourses in the wider area.

4.6.29 Due to the presence of suitable habitat on-Site, it is considered fish have the potential to be present on Site.

Hazel dormouse

4.6.30 HBIC returned no recent records of hazel dormouse *Muscardinus avellanarius* from within 2 km of the Site.

4.6.31 A search on MAGIC returned no records of granted EPS mitigation licences relating to hazel dormice from within 2 km of the Site.

4.6.32 Both Brick Kiln Copse (W3) and the woodland blocks adjacent to the Site (Stoke Park Woods, Upperbarn Copse and Crowdhill Copse) contained areas with appropriate vegetation structure and species diversity suitable for dormice. This includes an understorey with a broad range of associated native flowering and fruiting species that will provide sufficient foraging opportunities throughout the dormouse active season. This was particularly the case along the woodland edge areas where there was an abundance of coppiced hazel.

4.6.33 The hedgerows and lines of trees (with scrub understorey) that intersected and bordered the Site provided suitable dispersal opportunities for hazel dormice, as well as providing additional foraging and nesting resources.

4.6.34 A review of the distribution of hazel dormouse in the United Kingdom by the People's Trust for Endangered Species (2022) highlighted that the hazel dormouse is frequently abundant in Hampshire. Furthermore, Hampshire is considered a stronghold for hazel dormouse populations (PTES, 2022).

4.6.35 It is considered possible that hazel dormouse may be present on Site and/or within immediately adjacent areas of suitable habitat. Old dormouse nest tubes were also observed within some of the

tree lines (such as G4) which suggests previous survey data may exist, though may be out-dated.

Reptiles

- 4.6.36 HBIC returned 36 recent records of reptiles from within 2 km of the Site. These pertained to slow-worm *Anguis fragilis*, common lizard *Zootopa vivipara*, grass snake *Natrix helvetica*. The closest record pertained to grass snake, 425 m from the Site, dated 2020.
- 4.6.37 There were no reptile sightings recorded during the survey visit.
- 4.6.38 Suitable reptile habitat was present throughout the Site in the form of woodland, hedgerows, lines of trees and grassland. The presence of waterbodies on Site is also likely to attract grass snake to the Site. Some hibernation potential also existed beneath fallen trees, below hollows around tree roots and within brash / log piles.
- 4.6.39 The hedgerows and lines of trees offered connectivity to the wider area and provided dispersal opportunities for widespread species.
- 4.6.40 Due to the abundance of nearby records and suitable habitat on-Site, it is considered reptiles have the potential to be present on the Site.
- 4.6.41 The suitability of the Site habitats for the rare reptile species (smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*) was negligible. Additionally, population distributions of such species are not known in the local area.

Riparian Species

- 4.6.42 HBIC returned six recent records of European otter *Lutra lutra*, and 27 recent records of water vole *Arvicola amphibius* within 2 km of the Site. The closest record was 800 m north west, dated 2017.
- 4.6.43 A search on MAGIC returned no granted EPS mitigation licences relating to otter from within 2 km of the Site.
- 4.6.44 No signs of otter or water vole were identified during the survey. It is considered unlikely that otter would use the Site for resting due to the limited amount of suitable habitat within the riparian zone and the level of disturbance at the Site. The banks of the Bow Lake Stream were not a suitable gradient for the creation of water vole burrows. However, it is possible that Bow Lake Stream is used for dispersal of otter and water vole to other watercourses in the wider area. It is possible that Bow Lake could support white-clawed crayfish but due the turbidity of the water caused by elevated flow at the time of survey, it was not possible to assess the watercourse's suitability.
- 4.6.45 Due to the presence of nearby records and suitable habitat on-Site, it is considered riparian mammals have potential to be present on the Site.

Other protected and notable species

- 4.6.46 HBIC returned 141 recent records of Western European Hedgehog *Erinaceus europaeus* from

within 2 km of the Site.

4.6.47 The closest record pertained to hedgehog, 160 m east from the Site, dated 2018 near Sewell Park.

4.6.48 Suitable hedgehog habitat is present throughout the Site in the form of woodland, hedgerows and lines of trees.

4.6.49 Due to the abundance of nearby records and suitable habitat on-Site, it is considered the notable species listed above have the potential to be present on the Site.

Invasive non-native species (INNS)

4.6.50 HBIC returned no recent records of Schedule 9 invasive non-native species (INNS) from within 2 km of the Site.

4.6.51 No INNS were identified during the survey; however it should be noted that a thorough search of all habitats was not possible due to the size of the Site and associated time constraints. If an INNS is identified or suspected, an ecologist should be contacted for advice. Best practice measures should also be employed to prevent the spread of INNS and other diseases, as detailed in **Section 5.1**.

5. Ecological Constraints, Opportunities and Recommendations

5.1 Constraints and Mitigation Measures

- 5.1.1 The ecological constraints and mitigation required to address the above are detailed in **Table 18** on the following pages.
- 5.1.2 The information contained within this report is valid for a period of 18 months from the date of the survey visit (CIEEM, 2019).
- 5.1.3 Therefore, if the works have not been completed by July 2024, the Site should be re-surveyed and re-assessed to determine if there have been any significant changes.

Table 18: Ecological Constraints and Mitigation Measures

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
Protected and notable species				
Amphibians	Disturbance of habitats on Site that could injure or kill amphibians if present.	eDNA tests carried out of all suitable waterbodies within 250m of the Site (see Table 14). If results of the eDNA tests are positive for the presence of GCN, a European Protected Species (EPS) mitigation licence would be required (depending on the proposed works). Further population surveys of the identified ponds would likely be necessary to inform the application, to assess the status of the GCN populations, following best practice guidance (Langton <i>et al</i>, 2001) If an EPS mitigation licence is required, the presence of GCN licenced Ecological Clerk of Works (ECoW) will likely be necessary during the vegetation removal, together with a mitigation and compensation strategy. Should a great crested newt be discovered on Site at any time, works must cease immediately and further ecological advice be sought. Best Practice Measures (BPMs) should be followed, as detailed within the Ecological Best Practice Measures & Methods of Working (Ecus, 2023) document.	Further Surveys (eDNA survey). BPM is regards to common amphibians	Between mid-April and the end of June During works.
Badger	Potential disturbance to an active badger sett (if present) & foraging badger	Best Practice Measures (BPMs) should be followed, as detailed within the Ecological Best Practice Measures & Methods of Working (Ecus, 2023) document. If an active badger sett is discovered within close proximity of a work area, it is recommended that the area	BPM in regards to badger	During works.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
		is cordoned off (at least a 30m buffer) and an ecologist contacted for advice. If impacts cannot be mitigated it may be necessary to apply for a licence to disturb / destroy a badger sett from Natural England, with a further potential requirement to close the sett if directly within / near the footprint of the works.		
Commuting and foraging bats	Bats may be impacted by any artificial lighting during the works and any long-term/operational lighting additions.	Works should be carried out during daylight hours only, where possible. If not, a Sensitive Lighting Plan (Bat Conservation Trust, 2018) should be implemented for works carried out at night. • If required, additional artificial lighting must be minimised and directed away from dark / semi dark areas. • Tower lighting is not recommended. • Hoods must be fitted to all lights to prevent light spill behind or above the light. • Lights must be turned off when not in use. Best Practice Measures (BPMs) should be followed, as detailed within the Ecological Best Practice Measures & Methods of Working (Ecus 2023) document.	Sensitive Lighting Plan BPM regarding commuting and foraging bats	Prior to works. During works.
Roosting bats	Disturbance or destruction of a bat roost	If works are required on or near any buildings identified with low, moderate or high bat roost potential, (see Table 17 and Figure 3) then a suite of nocturnal bat surveys / ground level inspections (using an endoscope) will be required following best practice guidance (Collins, 2016).	Bat surveys	Between May and August.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
		If a bat roost is confirmed, then an EPS mitigation licence from Natural England will be required before works may commence. If any works are required to or near any semi-mature or mature trees (such as felling, pruning, pollarding, etc) it is recommended that a Ground Level Tree Assessment is undertaken to determine the suitability for roosting bats. Where works are required on or near any trees identified with moderate or high bat roost potential, it is recommended a suite of nocturnal bat surveys / climbed tree inspections will be required following best practice guidance (Collins, 2016). Any trees identified with low suitability will not require further survey but should be “soft felled” which involves cutting limbs and the trunk in section and carefully lowered to the ground using ropes and/or piles of brash to soften the impact. Any cavities or gaps should be left facing upwards for no less than 24 hours to allow bats the chance to escape.	Ground level tree assessment	Any time of year, prior to works commencing.
Birds (nesting)	Trees and scrub provide suitable habitat for nesting birds. The grassland fields also provide limited suitability for ground nesting birds. De-vegetation or removal of these	The main nesting season for birds is generally taken as being between March to August inclusive (weather dependent), however active nests have been recorded during all months of the year. Any works should be planned between September and January to reduce the	Avoidance of nesting bird season.	Completion of works during winter months, if possible.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
	habitats could damage nests and /or cause injury to birds. Noise from works may disturb nesting birds and fledglings.	likelihood of encountering nesting birds. If not possible to complete works outside of nesting bird season, nesting bird checks should be completed within 48 hours prior to works commencing. If an active nest is identified, then works must cease until the nest is no longer active or an exclusion zone established, which should be confirmed by an ecologist.	Nesting bird check	March to August & prior to works commencing, within 48 hours
Fish and aquatic life	The waterbodies within and adjacent to Site have the potential to be affected by the works.	Pollution Prevention Measures to be implemented to maintain the integrity of the waterbody/ watercourse/s.	Pollution Prevention Measures	During works.
Hazel dormouse	If major vegetation clearance works are proposed within woodland (both along the Site boundary and Brick Kiln Copse) or lines of trees with scrub understory and/or hedgerows require severing to facilitate the proposed works, this may result in injury, killing or disturbance to hazel dormouse.	Hazel dormouse surveys undertaken in line with best practice guidance (Bright, P. <i>et al</i>, 2006). This will involve nest tubes being installed in suitable habitat such as woodland, lines of trees (with scrub understory) and hedgerows to be checked for dormouse presence (such as evidence of nest building) during appropriate months of the year. If evidence of hazel dormouse is identified an EPS mitigation licence may be required prior to works commencing, unless impacts on dormice can be avoided during the design phase.	Hazel Dormouse surveys.	Between April and November.
Reptiles	Disturbance of habitats on site could injure or kill reptiles if present.	Presence/likely absence surveys should be conducted in areas likely to be impacted by any destructive works. These surveys should be undertaken in accordance with current best practice guidance for reptiles (Froglife, 2015).	Reptile presence/likely absence surveys.	Seven survey visits between March and October inclusive.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
		Best Practice Measures (BPMs) should be followed throughout all works, as detailed within the Ecological Best Practice Measures & Methods of Working (Ecus 2023) document. Due to the type and scale of the proposals, a reptile translocation will not likely be required.	BPMs regarding reptiles	During works.
Riparian Species	The watercourses within/adjacent to Site have the potential to be affected by the works.	If works likely to cause disturbance are anticipated adjacent to Bow Lake Stream, then it is recommended that further otter and water vole presence/likely absence surveys are undertaken following best practice guidance: otter (Chanin, 2003) and water vole (Dean et al., 2016 & Strachan et al., 2011). Pollution Prevention Measures to be implemented to maintain the integrity of the watercourse/s.	Otter/Water vole surveys. Pollution Prevention Measures	Water vole - two survey visits, one from mid-April to June and one from July to September. Otter – one survey visit at any time of the year During works.
Other Protected and/or Notable Species - Hedgehog Yellow necked mouse	Vegetation clearance works on Site have the potential to injure or kill hedgehog, if present.	'Ecological Best Practice Construction Guidance' should be implemented during construction and any vegetation clearance works to avoid harm to hedgehog and other notable mammals. As a precautionary measure, it is recommended that any excavations left overnight should be covered or have a suitable escape ramp, e.g. a long	BPM regarding hedgehog (and other small mammals).	During works.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
Harvest mouse Water shrew		scaffold board, inserted to allow escape should a protected/notable species fall in. If hibernating hedgehog are found they should be left in place and an ecologist should be contacted for advice.		
INNS				
All species	Spread of INNS across Site and/or wider area	If vegetation clearance is to take place and INNS are identified on Site the following should be undertaken: • INNS should be removed and disposed of appropriately either by uprooting young plants or cutting down larger specimens (undertaken by appropriately qualified personnel). • Roots may be dug out if appropriate and safe to do so. • All INNS waste materials must be removed from site and taken to a licensed waste facility; and, • Biosecurity measures, such as an onsite boot and tyre wash station, may be required, if deemed appropriate.	INNS Management Plan.	In advance of and during works, when required.

5.2 Conclusions

- 5.2.1 The Site is dominated by modified grassland (previously used as pasture) with blocks of woodland (wet, lowland mixed deciduous and other broadleaved) with lines of trees and hedgerows bordering the various land parcels.
- 5.2.2 Further survey or actions have been recommended for a number of species and species groups to establish presence/likely absence. These further actions are recommended to inform any further constraints.
- 5.2.3 The Site provides a good opportunity for biodiversity enhancement. The proposed works will need to balance the requirements for quantitative biodiversity net gain against the needs of the current assemblage of species potentially present, in particular reptiles, amphibians, dormice, bats, riparian species and nesting birds.
- 5.2.4 Ecological opportunities for the Site are discussed below.

5.3 Ecological Opportunities

- 5.3.1 Site specific ecological enhancement opportunities (such as habitat creation and enhancement) to generate BNG credits and provide contributions towards Eastleigh Borough Council's pledge of planting 160,000 across the borough will be detailed within the BNG Post-intervention and Costed Management Plan documents provided by Ecus, in-line with the overarching project brief.

6. References

- Bat Conservation Trust (2018) Guidance Note 08/18 – Bats and artificial lightings in the UK. Available at: <https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349> [Accessed: February 2023]
- Bright, P., Morris, P. & Mitchell-Jones, T. (2006). The dormouse conservation handbook (2nd ed.n). English Nature.
- Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at <http://www.ukhab.org/>
- Chanin, P. 2003. Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.
- CIEEM (2017). Guidelines for Preliminary Ecological Appraisal, (2nd ed.) Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2019). Advice note on the lifespan of ecological reports and surveys. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.). The Bat Conservation Trust, London.
- Dean, M., Strachan, R., Gow, D. and Andrews, R. 2016. The Water Vole Mitigation Handbook (The Mammal Society Guidance Series). Eds. Fiona Mathews and Paul Chanin. The Mammal Society, London.
- Froglife (2015) Surveying for Reptiles. Available at: <https://www.froglife.org/wp-content/uploads/2013/06/Reptile-survey-booklet-3mm-bleed.pdf>
- Harris, S., Cresswell, P. and Jefferies, D. (1989). Surveying Badgers. The Mammal Society, London.
- Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth.
- MAGIC (2023). Multi-Agency Geographical Information for the Countryside website. Available online: <https://magic.defra.gov.uk/>
- Natural England. (2022). The Biodiversity Metric 3.1: auditing and accounting for biodiversity value. User Guide (JP039). Natural England.
- Natural England. (2022). The Biodiversity Metric 3.1: auditing and accounting for biodiversity value.

Technical Supplement (JP039). Natural England.

Natural England. (2022). The Biodiversity Metric 3.1: auditing and accounting for biodiversity value. Calculator Tool. Natural England.

Peoples Trust for Endangered Species (2022). 'Hazel dormice range and distribution in the UK' [Available at: <https://ptes.org/campaigns/dormice/about-hazel-dormice/hazel-dormice-rangeanddistribution-in-the-uk/>] [Accessed: January 2023].

QGIS.org, 2022. QGIS Geographic Information System. QGIS Association.

Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. and Win, I. et al. (2021) Birds of Conservation Concern 5: the status of all regularly occurring birds in the United Kingdom, Channel Islands and Isle of Man. British Birds. 114, 12. pp 723 - 747.

Strachan, R, et al. 2011. *Water Vole Conservation Handbook* 3rd Ed. WildCru, Oxford.

Figure 1: Site Location Map

Legend

 Site Boundary



Eastleigh Borough Council Parcel 35 Stoke Park Farm Preliminary Ecological Appraisal

Figure 1
Site Location Map

• Unit 1 Woodlands Business Village • Coronation Road •
Basingstoke • RG21 4JX •
• tel: 01256 224 588 • www.ecusltd.co.uk •

Figure 2: UKHab Map

Legend



Eastleigh Borough Council

Parcel 35 Stoke Park Farm

Preliminary Ecological Appraisal

Figure 2
UKHab Map

▪ Unit 1 Woodlands Business Village ▪ Coronation Road ▪
Basingstoke ▪ RG21 4JX ▪
▪ tel: 01256 224 588 ▪ www.ecusltd.co.uk ▪

Figure 3: Buildings with Bat Roost Potential

Legend

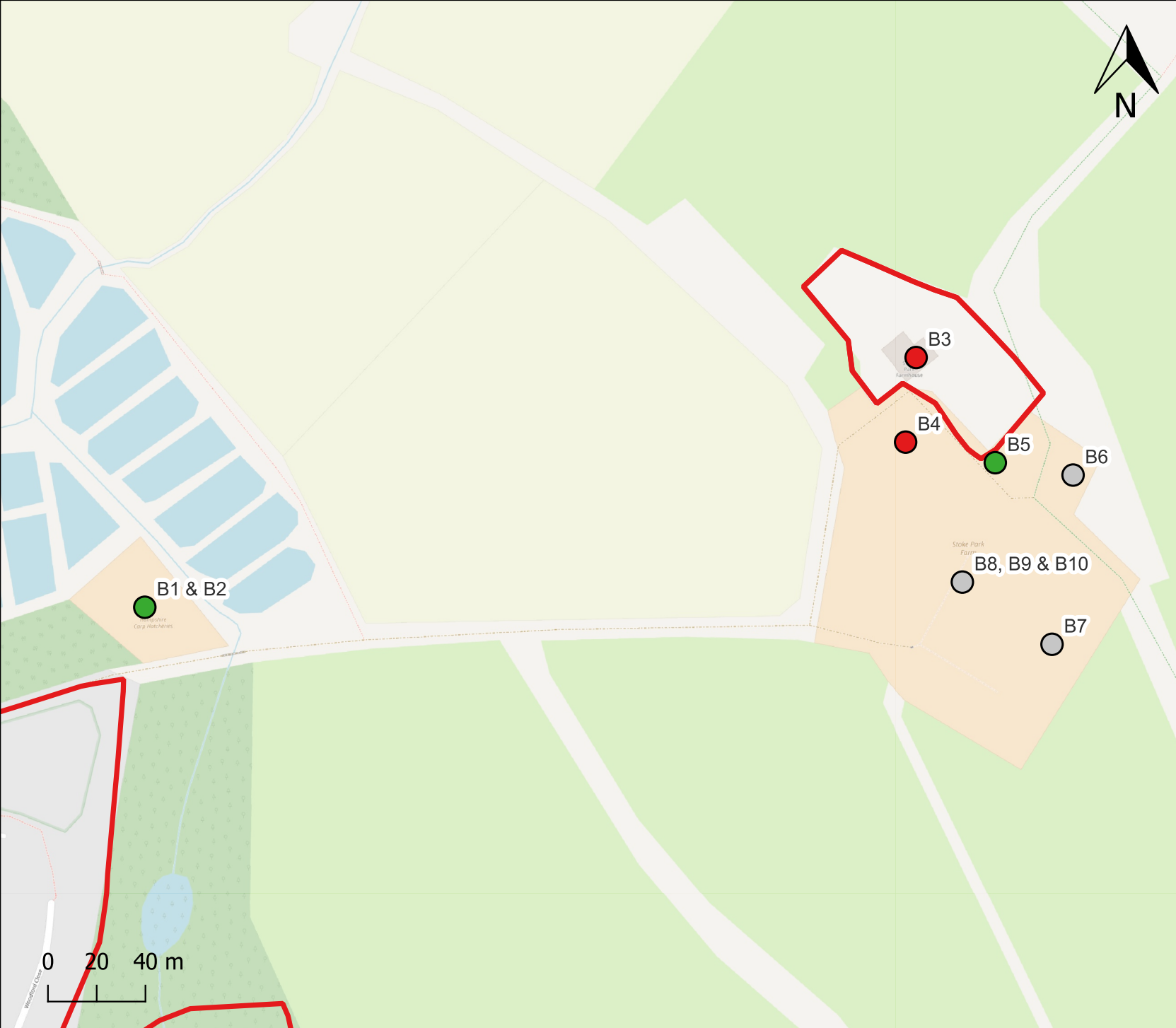
 Site Boundary

Bat Roost Suitability

 High

 Low

 Negligible



Eastleigh Borough Council
Parcel 35 Stoke Park Farm
Preliminary Ecological Appraisal

Figure 3
Buildings with Bat Roost Potential

• Unit 1 Woodlands Business Village • Coronation Road •
Basingstoke • RG21 4JX •
• tel: 01256 224 588 • www.ecusltd.co.uk •

Appendix 1: Site Habitat Photographs

Appendix 2: Legislation

This Appendix is intended as a brief guide to some of the relevant offences associated with protected species which are common constraints associated with development projects.

For full details of legislation relating to all habitats and species discussed within this report visit <http://www.legislation.gov.uk>.

Amphibians including great crested newt

Great crested newt *Triturus cristatus* (GCN) is protected under the Wildlife & Countryside Act 1981 (as amended) (“the WCA 1981”) and the Conservation of Habitats and Species Regulations 2017 (as amended) (“the Habitats Regulations”), and is therefore a European Protected Species (EPS).

It is illegal to kill, injure, capture, handle or disturb GCN, and the places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed.

Natterjack toad *Epidalea calamita* is also an EPS and is afforded the same protection.

GCN, natterjack toad and common toad *Bufo bufo* are Priority Species under the Natural Environment and Rural Communities Act 2006 (“the NERC Act”).

The four widespread species of amphibian: the smooth and palmate newts, the common frog and common toad, are protected by Section 9 (5) of the WCA 1981 which prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy.

Badger

Badgers *Meles meles* and their setts are protected under the Protection of Badgers Act 1992 (“the PBA 1992”). It is an offence to kill, injure or take a badger from the wild. It is also an offence to destroy, damage or obstruct an active badger sett, or to disturb badgers within the sett.

Bats

All species of bat occurring within the UK are included in Schedule 2 of the Habitats Regulations. Under Regulation 43, bats are protected from deliberate capture, injury or killing, from deliberate disturbance and from damage or destruction of a breeding site or resting place (roost).

All UK bats are also included on Schedule 5 of the WCA 1981. It is an offence to intentionally or recklessly disturb bats while they are occupying a structure or place used for shelter or protection, or to obstruct access to any such place.

Bats are also listed as Priority Species under Section 41 of the NERC Act and certain species are Priority Species under the NERC Act.

Birds

All wild birds are protected under the WCA 1981 against destruction of the active nest.

It is illegal to kill, injure or 'take' any wild bird, take or damage the nest of any wild bird whilst in use or being built. The eggs of all wild birds are also protected.

The birds listed in Schedule 1 of the WCA 1981 are protected against disturbance whilst actively nesting.

Competent authorities must have regard for all bird species listed under Section 41 of the NERC Act which have potential to be impacted by proposed works.

In 2021, a re-assessment of Birds of Conservation Concern (BoCC) was published by Stanbury *et al.* (2021), which defined rare and threatened bird species on two lists (Red and Amber) describing the level of threat to each species of concern.

'Red' is the highest conservation priority, with species needing urgent action due to either a historical decline in breeding population, severe (>50%) decline in breeding or non-breeding population, or severe decline in breeding range over 50 years or more.

'Amber' is the next most critical group, with species qualifying for this status as a result of either recovery from red list criterion, being classed as rare breeders in the UK, moderate (>25%) decline in breeding or non-breeding population or moderate decline in breeding range over 25 years or more.

These categories are followed by 'Green', indicating that the species is not experiencing population declines. A species can be green-listed but can also be listed under Schedule 1 of the WCA 1981 due to risk of persecution.

Freshwater and migratory fish

Various freshwater and migratory fish species and their habitats are afforded legal protection under the WCA 1981, Salmon and Freshwater Fisheries Act 1975 and Eels (England and Wales) Regulations 2009.

The following fish receive various levels of protection under the WCA 1981: allis shad *Alosa alosa*, twaite shad *Alosa fallax*, vendace *Coregonus albula*, whitefish *Coregonus lavaretus* and Atlantic sturgeon *Acipenser sturio*. Atlantic sturgeon are also EPS.

Special areas of conservation (SACs), sites of special scientific interest (SSSIs) or Ramsar sites have features of special interest for freshwater or migratory fish, such as: Atlantic salmon *Salmo salar*, bullhead *Cottus gobio*, lamprey (brook, river and sea) (*Petromyzontiformes*), spined loach *Cobitis taenia*, European eel *Anguilla anguilla*.

Atlantic salmon, brown/sea trout *Salmo trutta*, river lamprey and European eel are listed as priority species under Section 41 of the NERC Act.

Eels are also protected by the Eels (England and Wales) Regulations 2009.

Hazel dormouse

Hazel dormouse *Muscardinus avellanarius* is protected under Schedule 5 of the WCA 1981, and under Schedule 2 of the Habitats Regulations, giving this species the same protection as GCN and bats.

Hazel dormouse is also listed as a Priority Species under the Section 41 of the NERC Act / Section 7 of the EWA.

Otter

Otter *Lutra lutra* is protected under Schedule 5 of the WCA 1981, and under Schedule 2 of the Habitats Regulations, giving this species the same protection as GCN and bats.

Otter are listed as Priority Species under the Section 41 of the NERC Act.

Reptiles

All UK reptile species are protected under Schedule 5 of the WCA 1981 against intentional killing or injuring.

Sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* are further protected under Schedule 2 of the Habitats Regulations.

Slow worm *Anguis fragilis*, sand lizard, common lizard *Zootoca vivipara*, grass snake *Natrix helvetica* and adder *Vipera berus* are also listed as Priority Species under the Section 41 of the NERC Act.

Water vole

Water vole *Arvicola amphibius* is fully protected under Schedule 5 of the WCA 1981 making it an offence to intentionally kill, injure or take a water vole, intentionally or recklessly damage or destroy a place of shelter or protection, intentionally or recklessly disturb a water vole when it is occupying such a place, or intentionally or recklessly obstruct such a place.

Water vole are listed as Priority Species under the Section 41 of the NERC Act.

White-clawed crayfish

White-clawed crayfish *Austropotamobius pallipes* are partially protected under Schedule 5 of the WCA 1981, which makes it illegal to intentionally take them.

White-clawed crayfish are listed as Priority Species under the Section 41 of the NERC Act.

Invasive non-native species

Certain species of plants and animals that do not naturally occur in the UK have become established in the wild and represent a threat to the natural fauna and flora.

The WCA 1981 is the principal piece of legislation in the UK regarding invasive non-native species. It is an offence under Section 14 (2) to plant or otherwise cause to grow in the wild any species listed on Schedule 9, Part II of the Act. Schedule 9, Part II includes knotweed species *Fallopia* spp., Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, cotoneaster species *Cotoneaster* spp., montbretia *Crocasmia* × *crocosmiiflora* and Rhododendron species *Rhododendron* spp. Section 14 also controls the spread of various animal species.

In accordance with Section 33 and 34 of the Environmental Protection Act 1990, if taken from their place of origin, any plant listed on Schedule 9, Part II of the WCA 1981 and their associated material (e.g. soil and ash) are classed as controlled waste.

Appendix 3: Notable Bird Species within 2 km of the Site

Common Name	Scientific Name	Designation
Arctic Tern	<i>Sterna paradisaea</i>	Amber
Barn Owl	<i>Tyto alba</i>	Schedule 1 Part 1
Bearded Tit	<i>Panurus biarmicus</i>	
Black Kite	<i>Milvus migrans</i>	
Black Redstart	<i>Phoenicurus ochruros</i>	Amber, Schedule 1 Part 1
Black Tern	<i>Chlidonias niger</i>	
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Amber
Brambling	<i>Fringilla montifringilla</i>	Schedule 1 Part 1
Cetti's Warbler	<i>Cettia cetti</i>	Schedule 1 Part 1
Common Tern	<i>Sterna hirundo</i>	Amber
Crane	<i>Grus grus</i>	Amber, Schedule 9
Crossbill	<i>Loxia curvirostra</i>	Schedule 1 Part 1
Cuckoo	<i>Cuculus canorus</i>	Red, S41 NERC
Curlew	<i>Numenius arquata</i>	Red, S41 NERC
Dark-bellied Brent Goose	<i>Branta bernicla bernicla</i>	Amber, S41 NERC
Dartford Warbler	<i>Sylvia undata</i>	Amber, Schedule 1 Part 1
Fieldfare	<i>Turdus pilaris</i>	Red, Schedule 1 Part 1
Firecrest	<i>Regulus ignicapillus</i>	Schedule 1 Part 1
Golden Plover	<i>Pluvialis apricaria</i>	-
Goosander	<i>Mergus merganser</i>	-
Goshawk	<i>Accipiter gentilis</i>	Schedule 1 Part 1
Grasshopper Warbler	<i>Locustella naevia</i>	Red, S41 NERC
Great Black-backed Gull	<i>Larus marinus</i>	Amber
Great Crested Grebe	<i>Podiceps cristatus</i>	-
Green Sandpiper	<i>Tringa ochropus</i>	Amber, Schedule 1 Part 1
Greenshank	<i>Tringa nebularia</i>	Amber, Schedule 1 Part 1
Grey Heron	<i>Ardea cinerea</i>	-
Grey Partridge	<i>Perdix perdix</i>	Red, S41 NERC

Common Name	Scientific Name	Designation
Grey Plover	<i>Pluvialis squatarola</i>	Amber
Grey Wagtail	<i>Motacilla cinerea</i>	Amber
Hawfinch	<i>Coccothraustes coccothraustes</i>	Red, S41 NERC
Herring Gull	<i>Larus argentatus</i>	Red, S41 NERC
Hobby	<i>Falco subbuteo</i>	Schedule 1 Part 1
Hoopoe	<i>Upupa epops</i>	Schedule 1 Part 1
House Sparrow	<i>Passer domesticus</i>	Red, S41 NERC
Kingfisher	<i>Alcedo atthis</i>	Schedule 1 Part 1
Lapwing	<i>Vanellus vanellus</i>	Red, S41 NERC
Lesser Black-backed Gull	<i>Larus fuscus</i>	Amber
Lesser Redpoll	<i>Carduelis cabaret</i>	Red, S41 NERC
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	Red, S41 NERC
Linnet	<i>Linaria cannabina</i>	Red, S41 NERC
Little Egret	<i>Egretta garzetta</i>	-
Little Ringed Plover	<i>Charadrius dubius</i>	Schedule 1 Part 1
Little Tern	<i>Sternula albifrons</i>	Amber
Marsh Harrier	<i>Circus aeruginosus</i>	Amber, Schedule 1 Part 1
Marsh Tit	<i>Poecile palustris</i>	Red, S41 NERC
Mediterranean Gull	<i>Larus melanocephalus</i>	Schedule 1 Part 1
Merlin	<i>Falco columbarius</i>	Red, Schedule 1 Part 1
Mistle Thrush	<i>Turdus viscivorus</i>	Red
Nightingale	<i>Luscinia megarhynchos</i>	Red
Osprey	<i>Pandion haliaetus</i>	Amber, Schedule 1 Part 1
Oystercatcher	<i>Haematopus ostralegus</i>	Amber
Peregrine	<i>Falco peregrinus</i>	Schedule 1 Part 1
Pied Flycatcher	<i>Ficedula hypoleuca</i>	Amber
Pochard	<i>Aythya ferina</i>	Red
Red Kite	<i>Milvus milvus</i>	Schedule 1 Part 1

Common Name	Scientific Name	Designation
Redstart	<i>Phoenicurus ochruros</i>	Amber, Schedule 1 Part 1
Redwing	<i>Turdus iliacus</i>	Amber, Schedule 1 Part 1
Reed Bunting	<i>Emberiza schoeniclus</i>	Amber, S41 NERC
Ring Ouzel	<i>Turdus torquatus</i>	Red, S41 NERC
Sand Martin	<i>Riparia riparia</i>	-
Shelduck	<i>Tadorna tadorna</i>	Amber
Short-eared Owl	<i>Asio flammeus</i>	Amber
Shoveler	<i>Anas clypeata</i>	Amber
Siskin	<i>Carduelis spinus</i>	-
Skylark	<i>Alauda arvensis</i>	Red, S41 NERC
Snipe	<i>Gallinago gallinago</i>	Amber
Song Thrush	<i>Turdus philomelos</i>	Red, S41 NERC
Spoonbill	<i>Platalea leucorodia</i>	Amber
Spotted Flycatcher	<i>Muscicapa striata</i>	Red, S41 NERC
Starling	<i>Sturnus vulgaris</i>	Red, S41 NERC
Tree Pipit	<i>Anthus trivialis</i>	Red, S41 NERC
Water Pipit	<i>Anthus spinoletta</i>	Amber
Water Rail	<i>Rallus aquaticus</i>	-
Wheatear	<i>Oenanthe oenanthe</i>	Amber
Whimbrel	<i>Numenius phaeopus</i>	Red, Schedule 1 Part 1
Whinchat	<i>Saxicola rubetra</i>	Red
White Stork	<i>Ciconia ciconia</i>	
Wood Sandpiper	<i>Tringa glareola</i>	Amber, Schedule 1 Part 1
Wood Warbler	<i>Phylloscopus sibilatrix</i>	Red, S41 NERC
Woodcock	<i>Scolopax rusticola</i>	Red
Woodlark	<i>Lullula arborea</i>	Schedule 1 Part 1, S41 NERC
Yellow Wagtail	<i>Motacilla flava</i>	Red, S41 NERC
Yellowhammer	<i>Emberiza citrinella</i>	Red, S41 NERC

Appendix 4: BNG Baseline Raw Data

Ref	Habitats and areas			Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units
1	Grassland	Modified grassland	89.972	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	179.94
2	Woodland and forest	Wet woodland	3.605	High	6	Moderate	2	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same habitat required =	47.59
3	Woodland and forest	Lowland mixed deciduous woodland	1.571	High	6	Good	3	Formally identified in local strategy	High strategic	1.15	Same habitat required =	32.52
4	Woodland and forest	Other woodland; broadleaved	1.467	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	11.74
5	Lakes	Ponds (Non- Priority Habitat)	0.064	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.51
6	Lakes	Ponds (Non- Priority Habitat)	2.88	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	11.52
7	Urban	Developed land; sealed surface	1.791	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
8	Urban	Vegetated garden	0.369	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	0.74
9	Urban	Artificial unvegetated, unsealed surface	1.757	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
10												
11												
12												
13												
14												
	Total habitat area		103.48									284.56

	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total hedgerow units	
14	G7	Line of Trees	0.358	Low	2	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	2.15	
15	G8	Line of Trees	0.71	Low	2	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	4.26	
16	G9	Line of Trees	0.317	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.27	
17	G10	Line of Trees	0.341	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.36	
18	G11	Line of Trees	0.538	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	2.15	
19	G15	Line of Trees	0.553	Low	2	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	3.32	
20													
21													
22													
23													
24													
			5.74										28.20

Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Watercourse encroachment		Riparian encroachment		Suggested action	Ecological baseline Total river units
Baseline ref	River type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier	Extent of encroachment	Multiplier	Extent of encroachment	Multiplier		
1	Other Rivers and Streams	1.128	High	6	Moderate	2	Within Catchment Plans	High strategic significance	1.15	No Encroachment	1	Major	0.75	Restore	11.67
2															
3															
4															
5															
		1.13													11.67

