

P21 & P22 Allington Lane - North – Preliminary Ecological Appraisal

Eastleigh Borough Council

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Ecus Ltd

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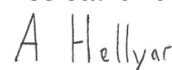


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Executive Summary

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 northwest of Allington Lane, South Bishopstoke, Eastleigh.

Eastleigh borough Council (EBC) has recently acquired 243.23 hectares of agricultural land. Allington Lane North 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.

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 new Environment Act 2021.

From the habitat survey (UKHabs), the baseline habitats within the survey area comprised:

- g3c 11 119 420 - Other neutral grassland – Scattered trees – Seasonally wet – Green access route;
- g3c8 – Holcus juncus neutral grassland;
- w1g6 – Line of trees;
- u1d 17 – Suburban/mosaic of developed/natural surface – ruderal/ephemeral.

One pond (r1 41 – Standing open water – Freshwater) and two moderately sized ditches (r1e - canal or ditch) were also present within the Site. The pond was assessed as being in Moderate condition. Both ditches were assessed as being in Poor condition.

Full botanical species lists are provided in **Appendix 3**.

The calculated BNG baseline for the Site is:

- Total habitat units (HU): 90.88
- Hedgerow units (HeU): 4.52
- River units (RU): 1.76

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.

1. Introduction

1.1 Background

- 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 northwest of Allington Lane, South Bishopstoke, Eastleigh.
- 1.1.2 This report details the results of a desk study, habitat survey and protected species assessment carried out on 4th 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 measures approximately 9.72 ha in area and includes multiple grassland habitats, mixed scrub, ditches, scattered trees and line of trees. The Site is located at National Grid Reference (NGR) SU 48115 16895 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 is situated within a widely rural environment, with agricultural and pastoral land, interspersed with small blocks of woodland and woody hedgerows encompassing much of the wider area surrounding the Site. The city of Southampton is located 2.57 km south west of the site, with the smaller town of Eastleigh located 2.71 km north west.

1.3 Project scope

- 1.3.1 Eastleigh borough Council (EBC) has recently acquired 243.23 hectares of agricultural land. Allington Lane North 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 new Environment Act 2021.

1.4 Quality assurance

- 1.4.1 The habitat survey and protected species assessment was completed by Senior Ecologist Alex Hellyar BSc (Hons) and Assistant Ecologist Nicole Bell MSc BSc (Hons).
- 1.4.2 The associated PEA report was completed by Assistant Ecologist Nicole Bell MSc 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 Ecus Technical Director for Ecology Abel Drewett BA(Hons) MSc Dip MCIEEM CEnv.

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 (EU Exit) 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 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) database (MAGIC, 2023) 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 4th January 2023.
- 3.2.2 Weather conditions and visibility considered suitable for the purpose of the survey (temperature = 13°C, wind = Beaufort 4, cloud = 60% cover, precipitation = intermittent mild to heavy rain). However, some areas were widely inundated with surface water from recent prolonged heavy rainfall, which may represent ground conditions and features (such as temporary waterbodies) that may only be present on a rare basis.
- 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 compiled. Habitat type was categorised using the UKHab methodology.
- 3.2.4 The habitats within the Survey Area were identified to a Level 4 or Level 5 using the UKHab methodology.
- 3.2.5 This survey method aims to characterise broad habitats and communities present and is not intended to provide a complete list of all plants occurring across the Survey Area.

- 3.2.6 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.
- 3.2.7 Any habitats present which are listed under Section 41 of the NERC Act or the Local Biodiversity Action Plan (LBAP) were noted.
- 3.2.8 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).
- 3.2.9 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 Watercourse Units (WaU).
- 3.3.5 The Minimum Mappable Unit (MMU) 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 MMU 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 manual 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 Protected species

3.4.1 Any evidence of, or potential for protected and/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

3.4.2 A desk-based assessment was undertaken using a 1:25,000 scale 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 fast flowing watercourse).

3.4.3 As garden ponds within residential properties are often absent from OS map sources, aerial photography was also used to search for additional ponds.

3.4.4 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.

3.4.5 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

3.4.6 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

3.4.7 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.

3.4.8 Any structures and trees present within the Survey Area were subject to an external visual assessment, undertaken from ground-level using binoculars. This approach enabled a search for the presence of Potential Roosting Features (PRFs) which could be used by roosting bats.

3.4.9 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.

3.4.10 Habitats within the Survey Area were also assessed for their suitability to support foraging and commuting bats.

Birds

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

Fish

3.4.12 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

3.4.13 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

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

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

Otter

3.4.16 Watercourses and waterbodies within the Survey Area were assessed for their suitability to support otter *Lutra lutra*. This involved recording 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).

3.4.17 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.

Widespread Reptiles

3.4.18 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

3.4.19 Watercourses and waterbodies within the Survey Area were assessed for their suitability to support water vole *Arvicola amphibius*. Any 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).

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

Other protected and notable species

3.4.21 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)

3.4.22 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*.

3.4.23 Evidence of invasive non-native animal species was also noted and any relevant recommendations have been made in Section 5.

3.5 Limitations

3.5.1 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.

3.5.2 The survey undertaken was intended to provide a rapid assessment of the broad habitats present within the Survey Area 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.

3.5.3 Surveys of this type provide a snapshot of the Survey Area at the time of the survey.

3.5.4 The survey was completed in January which is outside the optimal habitat 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 Survey Area 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 1**.

Table 1: Statutory Sites of International and/or European level within 10 km of the Site.

Name and Designation	Reason for Designation	Distance and Direction from Site
River Itchen Special Area of Conservation (SAC)	Annex I habitats: 3260 Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. Annex II species: 1044 Southern damselfly and 1163 Bullhead.	463 m north west
Solent Maritime (SAC)	Annex 1 habitats: Estuaries, 1320 <i>Spartina</i> swards <i>Spartinion maritimae</i> and 1330 Atlantic salt meadows <i>Glauco-Puccinellietalia maritimae</i> .	6 km south east
Solent and Southampton Water Special Protection Area (SPA)	Annex 1 species: Mediterranean gull, sandwich tern, common tern, little tern and roseate tern.	6.1 km south
Solent & Southampton Water Ramsar site	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	6.1 km south

	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, and 30% of the UK population.	
Emer Bog (SAC)	Annex 1 habitats: 7140 Transition mires and quaking bogs.	8.9 km north west

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 2**.

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

Name and Designation	Reason for Designation	Distance and Direction from Site
River Itchen Site of Special Scientific Interest (SSSI)	Notified for classic chalk stream and river, fen meadow, flood pasture and swamp habitats, particularly formations of in-channel vegetation dominated by water crowfoot <i>Ranunculus spp</i> , riparian vegetation communities (including wet woodlands) and side channels, runnels and ditches associated with the main river and former water meadows. The site is also notified for significant populations of the nationally-rare southern damselfly <i>Coenagrion mercuriale</i> and assemblages of nationally-rare and scarce freshwater and riparian invertebrates, including the white-clawed crayfish <i>Austropotamobius pallipes</i> . This site is notified for otter <i>Lutra lutra</i> , water vole <i>Arvicola terrestris</i> , freshwater fishes including bullhead <i>Cottius gobbo</i> , brook lamprey <i>Lampetra planeri</i> and Atlantic salmon <i>Salmo salar</i> , and the assemblage of breeding birds including tufted duck <i>Aythya fuligula</i> ,	463 m north west

	pochard <i>A. ferina</i> and shoveler <i>Anas clypeata</i>, the waders lapwing <i>Vanellus vanellus</i>, redshank <i>Tringa totanus</i> and snipe <i>Gallinago gallinago</i> and wetland passerines including sedge warbler <i>Acrocephalus schoenobaenus</i>, reed warbler <i>A. scirpaceus</i> and Cetti's warbler <i>Cettia cettia</i>.	
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4.1.3 There are no opportunities, specific to this land parcel, for local statutory designated sites to be improved as part of this scheme.

4.1 Non-statutory designated sites

4.1.1 There were 27 non-statutory designated sites for nature conservation within 2 km of the Site, all of which are Sites of Importance for Nature Conservation (SINCs). Two SINCs were within or bordered the Site boundary; details are listed in Table 3 below.

Table 3: Non-Statutory Sites for Nature Conservation within or bordering the Site.

Name and Designation	Reasons for Designation	Distance and Direction from Site
Allington Lane Pond	Criteria 5B: Fens, flushes, seepages, springs and inundation grasslands of floodplains that support a flora and fauna of less-improved wet conditions Criteria 6A: Site which supports one or more Hampshire Notable Species	Within the Site
Hog Wood & Gravel Pits	Criteria 1A: Ancient Semi-natural Woodlands Criteria 1Cii: Wet Woodlands Criteria 5A: Areas of Open Fresh Water Criteria 6A: Site which supports one or more Hampshire Notable	33 m west

	Species	
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- 4.1.2 There are opportunities for Allington Lane Pond and Hog Wood & Gravel Pits to be improved as part of this scheme.

4.2 Other important habitats

Ancient woodland

- 4.2.1 MAGIC identified 14 ancient woodland sites from within 2 km of the Site listed within the Ancient Woodland Inventory (AWI).
- 4.2.2 The closest of these records pertained to an unnamed ancient woodland located approximately 241 m south east of the Site.
- 4.2.3 It is understood that there are no habitats or impact pathways such as hedgerows or woodland which connect the Site to nearby ancient woodland, therefore the nearby ancient woodland cannot be improved to generate further credits.

Habitats of Principal Importance

- 4.2.4 Six Habitats of Principal Importance (HPI) were recorded within 2 km of the Site. These pertained to coastal and floodplain grazing marsh, good quality semi-improved grassland, lowland meadows, purple moor grass and rush pastures, deciduous woodland and traditional orchards.
- 4.2.5 These closest of these HPI's pertains to coastal and floodplain grazing marsh located 193 m west of the Site.
- 4.2.6 Given the distance from the Site, it is considered that the Habitats of Principal Importance cannot be improved to generate further credits.

Aquatic habitats

- 4.2.7 Six waterbodies were identified within 250 m of the Site. These pertained to three ponds and three lakes. One of these ponds, Allington Lane Pond is located within the Site boundary.
- 4.2.8 A large network of drainage channels were also present within 250 m of the Site. Two drains run through the Site, along the western and eastern boundaries.
- 4.2.9 A tributary branching off from the River Itchen is located approximately 157 m north west of the Site.
- 4.2.10 There is hydrological connectivity to the Site via a system of agricultural drainage channels, therefore watercourses and waterbodies could be improved to generate further credits.

4.3 Habitat Assessment

- 4.3.1 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**.

g3c Other Neutral Grassland - Secondary codes: Scattered trees 11, Coastal and floodplain grazing marsh 25 Seasonally wet 119, Green Access Route 420

- 4.3.2 Other neutral grassland, covering an area of approximately 8.86 hectares encompassed much of the Site. This habitat was bordered with a line of trees, with smaller areas of mixed scrub. Scattered trees were present within this habitat.
- 4.3.3 Grasses including cock's foot *Dactylis glomerata*, perennial rye grass *Lolium perenne* and fescue *Festuca sp.* were abundant throughout this habitat. Herbs were also typical of this habitat type with frequent to occasional white clover *Trifolium repens*, ragwort *Jacobaea vulgaris*, spear thistle *Cirsium vulgare*, creeping buttercup *Ranunculus repens* and dovesfoot cranesbill *Geranium molle*. Species including bristly oxtongue *Helminthotheca echinoides*, field cranesbill *Geranium pratense*, pendulous sedge *Carex pendula*, teasel *Dipsacus fullonum* and fern species were rare.
- 4.3.4 The grassland was heavily waterlogged throughout, with soft rush *Juncus effusus* abundant along the southern boundary and within the north-eastern field.
- 4.3.5 A full species list is detailed in **Appendix 3**.
- 4.3.6 Historical ariel imagery shows the presence of a track running along the southwestern boundary of the Site, adjacent to the railway. This track is now heavily vegetated, however evidence of horse hair and manure suggests that it may still be used by the public using the Site as a thoroughfare.
- 4.3.7 This habitat was considered to be in **Moderate** condition, due to failing several of the grassland condition criteria. The habitat was found to lack the composition of nine priority grassland habitat and associated indicator species per metre squared. However, the habitat was found to have a varied sward height with limited bare ground coverage (between 1 – 5%).
- 4.3.8 Other neutral grassland is not listed as a habitat under Section 41 of the NERC Act, or within the south Hampshire LBAP. However, the north eastern corner of the Site falls within the Allington Lane Pond SINC, which consists of important floodplain habitat. Therefore, this habitat is considered to have high strategic significance in relation to BNG.
- 4.3.9 Floodplain grazing marsh is defined as periodically inundated pasture or meadow with ditches, which maintain the water levels, containing standing brackish or fresh water. This habitat is identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP).
- 4.3.10 Furthermore, this habitat is recorded under the Hampshire Biodiversity Partnership's (HBP)

Biodiversity Action Plan Habitat list and is located within the Allington Lane Pond SINC. The importance of this habitat is primarily associated with the valuable resources provided for rare invertebrates, wintering and breeding birds. Therefore, this habitat is considered to have high strategic significance within BNG.

g3c8 *Holcus juncus* neutral grassland

- 4.3.11 The survey area comprised of two small parcels (approximately 0.84 ha) of *Holcus-Juncus* neutral grassland located in the north east and along the southern boundary of the Site.
- 4.3.12 Soft rush *Juncus effusus* was the dominant species within this habitat. Other abundant species included perennial ryegrass, sphagnum moss species *Sphagnum sp*, creeping buttercup *Ranunculus repens* and white clover *Trifolium repens*.
- 4.3.13 A full species list is detailed in **Appendix 3**.
- 4.3.14 The condition score for this parcel was **Moderate**, due to failing several of the grassland condition criteria. The habitat was found to lack the composition of nine priority grassland habitat and associated indicator species per metre squared.
- 4.3.15 *Holcus-Juncus* neutral grassland is one of the neutral grassland types typical of poorly-drained permanent pastures in lowland areas. This habitat is not listed under the UKBAP or HBP's Biodiversity Strategy. However, the north eastern corner of the Site falls within the Allington Lane Pond SINC which consists of important floodplain habitat. Therefore, this habitat is considered to have high strategic significance in relation to BNG.

**u1d Suburban/mosaic of developed/natural surface – Secondary codes: 17
ruderal/ephemeral**

- 4.3.16 Located at the eastern entrance of the Site is a small mosaic of developed and natural surface habitat, approximately 0.29 hectares in size.
- 4.3.17 Species present in this habitat include common nettle *Urtica dioica*, bramble *Rubus fruticosus agg.*, common ivy *Hedera helix*, spear thistle *Cirsium vulgare* and dovesfoot cranesbill.
- 4.3.18 The secondary code associated with this habitat was 17 (ruderal/ephemeral) as this vegetation lacks a clearly dominant species and consists of a mixture of low-growing plants including groundsels/ragworts *Senecio sp* and creeping buttercup *Ranunculus repens*.
- 4.3.19 Currently this habitat is not included within the BNG metric, however it can count towards the total baseline habitat units for the Site as **sparsely vegetated land, Ruderal-ephemeral (s 17)**.
- 4.3.20 The condition score for this habitat was **Poor**.

4.3.21 A full species list is detailed in **Appendix 3**.

4.3.22 This habitat is not listed as a habitat under Section 41 of the NERC Act, or within the south Hampshire LBAP.

4.3.23 Furthermore, given the habitat is not located within or in close proximity to a designated biodiversity opportunity area (BOA) this habitat is considered to have low strategic significance in relation to BNG.

w1d - Wet woodland

4.3.24 A small section of wet woodland was located at the north eastern aspect of the Site (approximately 0.17 ha). This woodland was dominated by willow species interspersed with occasional semi-mature oak trees.

4.3.25 The condition score for this habitat was Moderate. This habitat was found to lack a recognisable NVC community and few age classes of trees were present.

4.3.26 A full species list is detailed in Appendix 3.

4.3.27 Wet woodland is defined as a woodland type which occurs on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species, but sometimes including ash *Fraxinus excelsior*, oak *Quercus robur*, pine *Pinus* sp. and beech *Fagus sylvatica* on the drier riparian areas. It is found on floodplains as successional habitat on fens, mires and bogs, along streams and hill-side flushes and is an important habitat for many taxa, particularly that of invertebrates.

4.3.28 Wet woodland is a UK BAP priority habitat. Furthermore, the north eastern corner of the Site falls within the Allington Lane Pond SINC which consists of important floodplain habitat. Therefore, this habitat is considered to have high strategic significance in relation to BNG.

f2e – Reedbeds

4.3.29 A small strip of reedbed (approximately 0.12 ha) was located on either side of the ditch that ran through the centre of the site and connected to the pond on the eastern side of the Site.

4.3.30 Common reed *Phragmites australis* was the dominant species with willow species being occasional.

4.3.31 A full species list is detailed in **Appendix 3**.

4.3.32 The condition score for this habitat was **Moderate**.

4.3.33 Reedbeds are a UK BAP priority habitat and are listed within the south Hampshire LBAP.

Therefore, this habitat is considered to have high strategic significance in relation to BNG.

4.3.34 Furthermore, given the habitat is not located within or in close proximity to a designated biodiversity opportunity area (BOA) this habitat is considered to have low strategic significance in relation to BNG.

h3h - Mixed scrub

4.3.35 A small patch of mixed scrub was located towards the southwestern and northern areas of the Site and were approximately 0.04 and 0.02 hectares in size, respectively. These habitats predominantly comprised of bramble, elder *Sambucus nigra*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and willow *Salix sp.*

4.3.36 A full species list is detailed in **Appendix 3**.

4.3.37 The condition score for these habitats was **Poor**.

4.3.38 Mixed scrub is not listed as a habitat under Section 41 of the NERC Act, or within the south Hampshire LBAP.

w1g6 - Lines of trees

4.3.39 Numerous lines of trees were located along the boundary of the Site. The trees were deciduous broadleaved species with an understorey consisting primarily of bramble, hawthorn and blackthorn scrub.

4.3.40 A condition assessment and full species list were completed on all of the line of trees present on the Site, as discussed below.

4.3.41 Tree group 1 (eastern boundary of Site) was assessed as having **Moderate** condition. This tree group failed to achieve a good condition score as there was not an undisturbed naturally vegetated strip of at least 6m on both sides of the trees and there were substantially large gaps within the tree canopy.

4.3.42 Tree group 2 (southern boundary of Site) was assessed as having **Moderate** condition. This tree group failed to achieve a good condition score as there was not an undisturbed naturally vegetated strip of at least 6m on both sides of the trees.

4.3.43 Tree group 3 (lower western boundary of Site) was assessed as having **Moderate** condition. This tree group failed to achieve a good condition score as there was not an undisturbed naturally vegetated strip of at least 6m on both sides of the trees.

4.3.44 Tree group 4 (centre of Site) was assessed as having **Poor** condition.

4.3.45 Tree group 5 (northern western boundary of Site) was assessed as having **Poor** condition.

4.3.46 Species that were visible included elder, ash, oak and field maple. A full species list is provided in **Appendix 3**.

4.3.47 Lines of trees is not listed as a habitat under Section 41 of the NERC Act, or within the south Hampshire LBAP.

4.3.48 If vegetation management is required up to the boundary line of the Site, or the removal of the habitat is required, lines of trees will be a constraint to the proposed works.

r2b 191- Other rivers and streams, Ditches

4.3.49 Two moderately sized drainage ditches were located within the Site, see details below:

- Ditch 1 (approximately 0.24 km in length): This ditch runs along the western boundary of the Site. A good fringe of marginal vegetation was present along the length of the ditch and there was no evident signs of physical damage, i.e. by cattle poaching. There was an absence of non-native species. However, sufficient water levels were not maintained throughout the ditch and very few emergent/submerged plants were present. Overall, the condition score for this ditch was **Poor**.
- Ditch 2 (approximately 0.20 km in length): This ditch runs through the middle of the Site, flowing into Allington Lane Pond. This ditch contained good quality water with no signs of pollution. There were no signs of physical damage along the length of the ditch and there was an absence of non-native species. However, more than 10% of the ditch was heavily shaded and sufficient water levels were not maintained throughout the ditch with some areas significantly shallower than others. Overall, the condition score for this ditch was **Poor**.

4.3.50 Ditches are currently not listed under the UKBAP or HBP's Biodiversity Strategy.

r1 – Standing open water and canals (Priority pond) – Secondary codes: 19 Ponds (Priority Habitat), 41 Freshwater – natural

4.3.51 A large pond (approximately 0.12 ha) was located towards the eastern side of the Site. The pond was surrounded by good terrestrial habitat, with an absence of non-native species. Waterfowl were present at the pond at the time of the survey. Fish appeared absent from the pond.

4.3.52 The condition score for this habitat was **Moderate**.

4.3.53 This habitat is located within the Allington Lane Pond SINC which is designated under criteria 6A (supports notable Hampshire species) and therefore passes criteria 2 of the UKHab priority pond metric.

4.3.54 Priority ponds are both a UK BAP habitat and Hampshire LBAP priority habitat and therefore, this habitat is considered to have high strategic significance in relation to BNG.

4.4 Baseline Biodiversity Value

4.4.1 Baseline habitats within the Survey Area comprised g3c - Other neutral grassland, g3c8 - *Holcus-Juncus* neutral grassland, w1d – wet woodland, h3h - Mixed scrub, f2e -Reedbeds, u1d – Suburban/mosaic of developed/natural surface, w1g6 – line of trees, r2b – Other rivers and streams, ditches r1 – Standing open water and canals (priority pond).

4.4.2 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**).

4.4.3 The area of the Survey Area has been calculated at 9.72 ha. The habitat type, condition, areas, and Habitat Units (HU), Hedgerow Units (HrU) and River Units (RU) are provided within Tables 4, 5 & 6 below. Baseline habitats have produced an overall biodiversity value of 90.88 HU, 4.52 HrU and 2.12 RU for the Site.

4.4.4 The raw BNG data is provided in **Appendix 4**.

Table 4. Baseline area-based habitats, condition and Habitat Units

Habitat Type	Condition	Area (ha)	Habitat Units (HU)
Grassland 1 g3c - Other neutral grassland	Moderate	6.16	49.28
Grassland 2 (North-eastern section) g3c - Other neutral grassland Floodplain Wetland Mosaic Coastal and floodplain grazing marsh (CFGM)	Moderate	1.86	25.67
Grassland 3 (Southern boundary) g3c8 - <i>Holcus-Juncus</i> neutral grassland	Moderate	0.55	4.40
Grassland 3 (North-east field) g3c8 - <i>Holcus-Juncus</i>	Moderate	0.29	4.00

Habitat Type	Condition	Area (ha)	Habitat Units (HU)
neutral grassland Floodplain Wetland Mosaic (CFGM)			
u1d – Suburban / mosaic of developed / natural surface (Not currently in BNG metric – inputted as sparsely vegetated land, Ruderal-ephemeral s 17).	Poor	0.29	0.58
r1 – Standing open water and canals (41 Freshwater – natural) (Not currently in BNG metric – inputted as Lakes – Ponds (Priority Habitat))	Moderate	0.24	3.31
h3h - Mixed scrub	Poor	0.04	0.16
W1d – Wet woodland	Moderate	0.17	2.04
f2e - Reedbeds	Moderate	0.12	1.44
Total Habitat Units (HU)			90.88

Table 5. Baseline Hedgerow Habitats, Condition and Hedgerow Units (HrU)

Habitat Type		Condition	Length (km)	Hedgerow Units (HrU)
W1g6 – Lines of trees	G1 – Eastern Boundary	Moderate	0.35	1.40
	G2 – Southern Boundary	Moderate	0.31	1.24
W1g6 – Lines of trees – Associated with bank or ditch	G3 – Lower Western Boundary	Moderate	0.14	1.12
	G4 –	Poor	0.18	0.36

Habitat Type		Condition	Length (km)	Hedgerow Units (HrU)
	Central			
	G5 – Upper Western Boundary	Poor	0.20	0.40
Total Hedgerow Units (HrU)				4.52

Table 6. Baseline River Habitats, Condition and River Units (RU)

Habitat Type		Condition	Length (km)	River Units (RU)
r1e - canal or ditch	Ditch 1 – Western Boundary	Poor	0.24	0.96
	Ditch 2 - Central	Poor	0.20	0.80
Total River Units (RU)				1.76

4.5 Protected Species

Amphibians, including Great Crested Newt (GCN)

- 4.5.1 HBIC returned three records with a maximum count of 21 individuals of great crested newt *Triturus cristatus* from within 2 km of the Site. The closest of these records pertained to an individual located 88 m west of the Site at Willow Farm, Eastleigh, dated 2015.
- 4.5.2 Four recent records of two species of common amphibian were also returned from within 2 km of the Site. These records pertained to slow worm *Anguis fragilis* and common toad *Bufo bufo*, with the closest of each records located 1.7 km north east of the Site in 2014 and 619 m south west of the Site in 2013 respectively.
- 4.5.3 MAGIC returned eleven recently granted European Protected Species (EPS) mitigation licences for GCN; these are detailed in **Table 7**.

Table 7: EPSM Licences relating to GCN within 2 km of the Site.

Licence Number	Date	Details	Distance and Direction from Site
2015-14283-EPS-MIT	20/08/2015 - 30/04/2016	Licence to allow the damage of a resting place.	100 m west
2015-14283-EPS-MIT-1	22/04/2016 - 31/07/2019	Licence to allow the damage and destruction of a resting place.	100 m west
2020-44604-EPS-MIT-1	01/05/2020 - 31/07/2028	Licence to allow the damage and destruction of a resting place.	827 m north east
2020-44604-EPS-MIT-2	22/10/2020 - 31/07/2028	Licence to allow the damage and destruction of a resting place.	827 m north east
2020-44604-EPS-MIT-3	04/02/2021 - 31/07/2028	Licence to allow the damage and destruction of a resting place.	827 m north east
2020-46989-EPS-MIT	01/05/2020 - 29/04/2022	Licence to allow the damage and destruction of a resting place.	827 m north east
2020-46989-EPS-MIT-1	04/02/2021 - 29/04/2022	Licence to allow the damage and destruction of a resting place.	827 m north east
2019-40025-EPS-MIT	25/04/2019 - 01/07/2026	Licence to allow the damage and destruction of a resting place.	1.12 km north east
2018-35734-EPS-MIT	16/08/2018 – 31/12/2025	Licence to allow the damage and destruction of a resting place.	1.38 km north east
2019-35734-EPS-MIT-1	01/11/2018 – 31/12/2025	Licence to allow the damage and destruction of a resting place.	1.38 km north east

2018-35734-EPS-MIT-2	1107/2010 – 31/12/2025	Licence to allow the damage and destruction of a resting place.	1.38 km north east
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4.5.4 MAGIC returned 34 GCN class licence survey returns within 2 km of the Site. These were dated between 19/04/2014 and 19/06/2016. The nearest class licence survey return was located 200 m west of the Site in 2015.

4.5.5 MAGIC also returned two pond survey results from within 2 km of the Site. See **Table 8** below.

Table 8: Pond Survey Results from MAGIC

Pond Survey Number	NGR	Suitability Index Score	Suitability Index Score Category	GCN Occurrence	Distance and Direction from Site
1	SU4630617431	0.65	Average	Absent	1.3 km north west
2	SU4617015880	0.74	Good	Absent	1.7 km south west

4.5.6 Two potentially suitable waterbodies were identified within 250 m of the Site using MAGIC and aerial imagery. One pond was present within the site boundary. Waterbodies outside of the Site boundary were not visited during the survey. Locations of these waterbodies are provided in **Table 9** below.

Table 9. Waterbodies within 250 m

Waterbody No.	Location	Description
1	SU4772916984, within	A medium sized pond within an area of wet woodland that connected to a small stream that ran across the centre of the site through a line of trees. The pond and stream was bordered by a thin riparian zone dominated by common reed <i>Phragmites australis</i> .
2	SU 47243 16997, closest of which was located 150 m west	A large complex of connected waterbodies and wetland habitat within Hogwood

4.5.7 A large network of drainage channels was also present within 250 m of the Site. A large drain also runs through the Site, along the eastern and western boundaries.

4.5.8 A tributary branching off from the River Itchen is located approximately 157 m north west of the Site.

4.5.9 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. **Table 10** below presents the results of the HSI Assessment.

Table 10: Habitat Suitability Index Assessment Results

Waterbody Survey Number	NGR	Suitability Index Score	Suitability Index Score Category
Pond 1	SU4772916984	0.74	Good

4.5.10 Hampshire does not currently lie within the new Natural England GCN District Level Licencing (DLL) zone.

4.5.11 The Site provides suitable terrestrial habitat for GCN sheltering (including hibernation) within dense mixed scrub and treeline bases as well as within the neutral grassland (within tall grassland and tussocks as well as the potential within small mammal burrows within the grassland). These habitats also provide potential to support foraging and dispersing amphibians, including GCN.

4.5.12 Man-made structures including a pile of old concrete fence posts, a pile of refuse and old wooden panels provides further suitable hibernacula for amphibians.

4.5.13 The Site is likely to support common amphibian species due to the presence of ditches and suitable terrestrial habitat.

4.5.14 Due to the distance of nearby records and number of suitable waterbodies located within close proximity to each other, it is considered likely that GCN have the potential to be found on the Site.

Badger

4.5.15 HBIC returned two recent records of badger *Meles meles* from within 2 km of the Site. The closest of these records pertained to an individual located 1.8 km south west of the Site in 2019.

4.5.16 The grassland and scrub habitats provided good foraging habitat for badger and it is possible that badger may use the boundary features for commuting across the wider landscape. The southwestern side of the Site is adjacent to a railway, which also may be used as a thoroughfare for badger.

4.5.17 No evidence of badger, including setts or fields signs such as snuffle holes, latrines or hairs, were

recorded during the survey. However, due to the transient nature of the species, it is possible for a new sett to become established within suitable habitats (such as the woodland, scrub and boundary features) at any given time.

Bats

4.5.18 HBIC returned 58 records of at least five bat species present within 2 km of the Site.

4.5.19 These include, Myotis bat species *Myotis spp.*, Natterer's bat *Myotis nattereri*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auratus*, unidentified pipistrelle bat species *Pipistrellus spp.*, and unidentified long-eared bat species *Plecotus spp.*

4.5.20 The closest of these records pertained to common pipistrelle located 555 m south west of the Site in 2019.

4.5.21 The closest bat roost records pertained to brown long-eared bat, soprano pipistrelle and natterer's bat recorded immediately adjacent to the Site.

4.5.22 MAGIC returned six granted European Protected Species (EPS) mitigation licences for bats; these are detailed in **Table 11**.

Table 11: EPSM Licences relating to bats within 2 km of the Site.

Licence Number	Date	Details	Distance and Direction from Site
2015-16719-EPS-MIT	02/11/2015 - 31/10/2020	Licence to allow the destruction of a resting place of common pipistrelle.	132 m south
2016-22386-EPS-MIT	11/04/2016 - 30/04/2020	Licence to allow the destruction of a resting place of common pipistrelle, soprano pipistrelle and brown long-eared bats.	1.1 km south
2019-39527-EPS-MIT	27/02/2019 - 22/02/2024	Licence to allow the destruction of a resting place and breeding ground of common pipistrelle, natterer's bats and brown long-eared bats.	1.3 km east

2019-39954-EPS-MIT	20/03/2019 - 31/12/2024	Licence to allow the destruction of a resting place of common pipistrelle and soprano pipistrelle.	1.3 km north east
2020-48450-EPS-MIT	01/08/2020 - 31/12/2026	Licence to allow the destruction of a resting place of soprano pipistrelle.	1.4 km north east
2019-42509-EPS-MIT	05/09/2019 - 04/09/2029	Licence to allow the destruction of a resting place of common pipistrelle and serotine bats.	1.8 km south

4.5.23 These licences pertained to Natterer's, common pipistrelle, soprano pipistrelle *Pipistellus pygmaeus*, brown long-eared and serotine *Eptesicus serotinus*.

4.5.24 It is possible that multiple bat species may use the grassland, woodland and line of trees / scrub on-Site as linear commuting corridors and for foraging purposes. Bats may also use the adjacent railway, located southwest of the Site as a linear corridor.

4.5.25 During the survey, all trees were assessed for their potential to support roosting bats. Five trees were identified, containing a number of potential roost features (PRFs). The details of these PRFs are detailed within **Table 12** below. The location of trees with PRFs are shown on **Figure 3**.

Table 12: Potential Bat Roost Features present in Trees on Site.

Tree/Group ID	Tree Species	NGR	PRFs	Suitability	Overall Tree Suitability
1	English Oak	SU 47540 17062	Ref 1 - Broken limb with minor void going into stem. 5 m high, facing south west.	Moderate	Moderate
			Ref 2 – Knothole, 10 m high facing north west.	Moderate	

2	White willow	SU 47604 17088	Ref 3 – Woodpecker hole 2 m high, facing south.	Moderate	Moderate
3	English oak	SU 47621 17059	Ref 4 – Large limb split, 3 m high facing south west. Ref 5 – Woodpecker hole, 3.5 m high, facing south. Ref 6 – Trunk cavity, 2.5 m high, facing south east.	Moderate High Mod	High
4	English oak	SU 47664 17071	Ref 7 – Trunk cavity and missing limb, 2 m high, facing south east. Ref 8 – Split limb, 4 m high, facing south west. Ref 9 – Large limb cavity, 4 m high, facing west. Ref 10- Large trunk cavity, 2.5 m high, facing south. Ref 11 – Trunk cavity, 2.5 m high, facing west. Ref 12 – Limb cavity, 4 m high, facing north west. Ref 13 - Trunk cavity, 4 m high, facing North.	High Moderate High High High High	High
5	English oak	SU 47800 17064	Ref 14 – Trunk cavity, 3.5 m high facing west. Ref 15 – Woodpecker hole 5 m high facing south. Ref 16 – Trunk cavity 2.5 m	High Moderate	High

			high facing south east. Ref 17 – Broken limb 3 m high facing east	High Low	
6	English oak	SU 47800 17061	Multiple knot holes and woodpecker holes within trunk and large limbs (specific details not recorded due to period of very heavy rainfall)	High	High

4.5.26 Due to the abundance of nearby records and suitable habitat on-Site, it is considered that a good population of bats will likely use the site for commuting, foraging and roosting purposes.

4.5.27 In line with current guidance (Collins, 2016); Site habitats are considered to display overall moderate suitability for foraging and commuting bats. Given the relatively small size of the Site and the availability of larger areas of similar habitat adjacent the Site, habitats at the Site are considered to be of no greater than site level importance and for foraging, commuting and roosting bats.

Birds

4.5.28 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.

4.5.29 “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 nonbreeding population or moderate decline in breeding range over 25 years or more. These categories are followed by “Green”, indicating that the species are relatively unthreatened.

4.5.30 HBIC returned 2241 records of 72 bird species from within 2 km of the Site. These included 26 species that are protected under Schedule 1 of the WCA 1981, 20 species listed as Species of Principal Importance (SPI) under Section 41 of the NERC Act, 52 species listed as Red or Amber in the Birds of Conservation Concern (BoCC) as detailed in **Appendix 5**.

4.5.31 A wood pigeon *Columba palumbus*, magpie *Pica pica* and a pair of mallards *Anas platyrhynchos* were recorded on Site during the survey. The mixed scrub and line of trees on Site offer suitable foraging and nesting habitat for a range of common bird species. The neutral grassland offers some foraging potential, but limited potential for ground nesting species due to the levels of disturbance

recorded (i.e.. signs of horse presence on Site in the form of manure and tufts of hair in wire fencing).

4.5.32 Due to the abundance of nearby records and suitable habitat on-Site and in the surrounding areas, bird species are deemed likely to be found on the Site throughout the year.

Fish

4.5.33 HBIC returned no recent records of notable fish species from within 2 km of the Site.

4.5.34 No fish were identified in the pond or ditches present on the Site. Both the pond and ditches on Site were relatively shallow and therefore unlikely to support larger species of common fish.

4.5.35 Due to the lack of records and condition of the waterbodies/watercourses on Site, it is considered that fish may not be present on the Site.

Hazel dormouse

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

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

4.5.38 Dormice prefer dense hedgerows or woodland understorey with a broad range of associated native flowering and fruiting species to provide sufficient foraging opportunities throughout the dormouse active season.

4.5.39 The line of trees and scrub provides some habitat connectivity to more suitable habitats (i.e. blocks of woodland) in the wider area. However, the adjacent railway and road located along the southern and eastern sides of the Site respectively, may act as a dispersal barrier for dormice travelling to and from these wider areas.

4.5.40 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).

4.5.41 It is considered unlikely that hazel dormouse would be present on the Site due to the disturbed and low suitability of habitats, however, they cannot be ruled out as they may use the Site to disperse to more suitable habitats in the wider landscape.

Reptiles

4.5.42 HBIC returned no recent records of reptiles from within 2 km of the Site.

4.5.43 There were no reptile sightings recorded during the survey visit.

- 4.5.44 The Site contains suitable terrestrial habitat which could provide opportunities (foraging and sheltering) for widespread reptiles such as grass snake, common lizard and slow worm within the neutral grassland, scrub and treeline bases. Some hibernation potential also exists beneath fallen trees, below hollows around tree roots and in more dense areas of scrub.
- 4.5.45 Man-made structures including piles of concrete rubble, refuse and old wooden panels provided further suitable hibernacula for reptiles. The lines of trees and scrub within the Site offered suitable habitat connectivity to the wider area.
- 4.5.46 Due to the presence of suitable habitat, it is considered widespread reptiles are likely to be present within the Site. The suitability of the Site habitats for 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

- 4.5.47 HBIC returned one recent record of European otter *Lutra lutra*, from within 2 km of the Site. This record pertained to an individual located 1.3 km west of the Site in 2013.
- 4.5.48 A search on MAGIC returned no granted EPS mitigation licences relating to otter from within 2 km of the Site.
- 4.5.49 The Site does not support any suitable aquatic habitat for this species and limited suitable foraging/commuting/resting habitat.
- 4.5.50 The closest substantial running watercourse recorded is the River Itchen at 856 m to the north-west of the Site which has suitability to support otter.
- 4.5.51 Although otters have a large home range of up to 20-40 km (depending if female or male), based on the lack of aquatic habitat on Site or in close proximity to the Site and the limited value of terrestrial habitats on Site, together with the availability of more suitable habitat associated with the River Itchen in the wider area; otter are considered unlikely to be encountered on Site.
- 4.5.52 General safeguards with regards to any future potential works on Site outlined for other species such as badger, will safeguard otter in the unlikely event that they are found on Site at the time of the works.

Other protected and/or otherwise notable species

- 4.5.53 HBIC returned one recent record of a Water Shrew *Neomys foediens* from within 2 km of the Site.
- 4.5.54 HBIC returned two recent records of Harvest Mouse *Micromys minutus* from within 2 km of the Site.
- 4.5.55 HBIC returned one recent record of a Yellow-necked Mouse *Apodemus flavicollis* from within 2 km of the Site.
- 4.5.56 HBIC returned one recent record of a Western European Hedgehog *Erinaceus europaeus* from

within 2 km of the Site. This record was located 1.6 km east of the Site in 2017.

- 4.5.57 The habitats on Site provide potential foraging and sheltering (including hibernation potential) habitat for species such as hedgehog within the grassland, mixed scrub and line of trees.
- 4.5.58 A number of large gaps present within the base of single standing tree trunks present on Site may provide suitable refugia for small mammal species.
- 4.5.59 Mammal tracks leading into the line of trees were present along the southern boundary of the Site, which suggests that mammal species may be using the Site for commuting/foraging.
- 4.5.60 Due to the abundance of nearby records and suitability of habitats, it is considered the notable species listed above have the potential to be found on the Site.

Invasive non-native species (INNS)

- 4.5.61 HBIC returned no recent records of schedule 9 invasive non-native species (INNS) from within 2 km of the Site.
- 4.5.62 No INNS were identified on the Site.
- 4.5.63 Butterfly bush *Buddleia davidii* was present only on the south western corner of the Site. This shrub is an invasive species in certain environments, but is not listed on Schedule 9 of the Wildlife and Countryside Act (1981) (as amended).

5. Ecological Constraints, Opportunities and Recommendations

5.1 Constraints and Mitigation Measures

- 5.1.1 The ecological constraints identified in this report and recommended mitigation required to address them are detailed in **Table 13** on the following pages. **This table should be read in conjunction with Ecological Best Practice Measures & Methods of Working (Ecus 2023).**
- 5.1.2 Further surveys and actions have been recommended for land parcels P21 & P22 where disturbance (i.e. construction/destructive works) are likely to occur.
- 5.1.3 At land parcels where only habitat enhancements are planned, it is unlikely for further surveys to be required, as impacts are considered unlikely to cause disturbance and/or harm to protected or notable species, if best practice working methods are followed.
- 5.1.4 The information contained within this report is valid for a period of 18 months from the date of the survey visit (CIEEM, 2019).
- 5.1.5 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 13: 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 on all suitable waterbodies within 250m of the Site (see Table 9). 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 following best practice guidance (Langton <i>et al</i>, 2001), to assess the status of the GCN populations. If an EPS mitigation licence is required, the presence of GCN licensed 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.	BPM in regard to badger	During works.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
		If an active badger sett is discovered within close proximity of a work area, it is recommended that the area 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 trees identified with moderate or high bat roost potential (see Table	Bat surveys	Between May and August.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
		12 & Figure 3), then a suite of nocturnal bat surveys / climbed tree inspections will be required required following best practice guidance (Collins, 2016). If a bat roost is confirmed, then an EPS mitigation licence from Natural England will be required before works may commence. 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.		
Birds (nesting)	Trees and dense scrub provide suitable habitat for nesting birds. De-vegetation or removal of these could damage nests and /or cause injury to birds. Noise from works may disturb nesting birds and fledglings.	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 likelihood of encountering nesting birds. Nesting bird checks should also be completed within 48 hours prior to works commencing. If an active nest is identified, the works must cease until the nest is no longer active or an exclusion zone established, which should be confirmed by an ecologist.	Avoidance of nesting bird season. Nesting bird check.	Completion of works during winter months, if possible. March to August & prior to works commencing, within 48 hours

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
Fish if present and aquatic life	The waterbody/watercourses within/adjacent to Site have the potential to be affected by the works.	Pollution Prevention Measures to be implemented to maintain the integrity of the watercourse/s.	Pollution Prevention Measures	During works.
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). 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.	Reptile presence/likely absence surveys. BPMs regarding reptiles	Seven survey visits between March and October inclusive. During works.
Other Protected and Notable Species - Hedgehog	Vegetation clearance works on Site have the potential to injure or kill hedgehog and other small mammal species 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 species. 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 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.	Ecological Best Practice Construction Guidance to be implemented during the works.	During works.

Feature/Constraint	Potential Impact and Effect	Action Required	Deliverable	Timing
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. • 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, must be in place to ensure footwear and machinery does not spread seeds/plant material beyond the site.	INNS Management Plan	In advance of and during works, when required.

5.2 Conclusions

- 5.2.1 The Site is dominated by neutral grassland which is bordered by a line of mixed deciduous trees and mixed scrub. Waterbodies including a pond and small ditch is present within the grassland, along with scattered trees and a small area of hardstanding.
- 5.2.2 The Site provides a good opportunity for biodiversity enhancement via Ecological Opportunities,. 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 amphibians, badger, reptiles, hedgehog (and other small mammals), bats and nesting birds.
- 5.2.3 Ecological Opportunities for the Site have been identified as part of the PEA process and are discussed below.

5.3 Ecological Opportunities

- 5.3.1 Site specific ecological opportunities to generate further credits are detailed in **Table 14** on the following pages.

Table 14: Ecological Opportunities

Site Feature	Recommended Enhancements
Line of Trees	Gap up/bolster line of trees along southern boundary to provide visual shielding from the adjacent railway by planting native tree and shrub species. Take care to avoid planting too near to the railway corridor to prevent encroachment on the boundary fence.
Other neutral Grassland	- Improve the grassland to a 'good' condition. - Introduce new species to incorporate target species for the specific grassland habitat type (e.g., crested dog's-tail <i>Cynosurus cristatus</i>). - Minimise nutrient input by avoiding the use of fertilisers. - Reduce any damaging activities (i.e., excessive poaching or damaging levels of access/footfall). - Control the level of undesirable or invasive species (e.g., creeping buttercup, nettles and creeping thistle). - Any areas of scattered scrub within the neutral grassland should be replaced with larger areas of mixed scrub or a higher distinctiveness habitat. - Inclusion of small log piles within the grassland areas (although out of the way of any management activities such as cutting/grazing) will provide shelter and foraging opportunities for invertebrates and small mammals.
Mixed Scrub	- Gap up mixed scrub with fruit bearing native species. - Replace scrub with new planting using more desirable species; such as hawthorn <i>Crataegus monogyna</i>, hazel <i>Corylus avellana</i> and blackthorn with a range of heights and ages. - Tall grasses and wild flowers could also be grown to add diversity in and around the scrub, if feasible.
Ditch	- Enhance drainage ditch. - Where there is none, strips of vegetation should be planted either side of the ditch to slow surface water run off and trap pollutants from entering the water network. - Ensure wildlife friendly bank management by providing structurally diverse and undisturbed vegetation next to the watercourse.

Site Feature	Recommended Enhancements
	• Maintain a variety of ditch habitats by cleaning ditch in rotation only. • Any cut vegetation should be left to create 'wildlife piles' for protected species e.g. grass snake.
Pond	• Remove low value trees from the perimeter of the pond. It is recommended that a buffer of around 15 m should be left unplanted, especially on the south side of the pond to ensure minimum shading. • Create more distinct banks with varied height ledges around the edge of the pond. • Enhance the drainage ditch which is connected to the pond.
Amphibians	• Enhance the pond already present on Site. • Any felled materials should be retained and used on Site to create new log piles and hibernacula away from any footpaths. • Ensure connectivity between the pond and grassland habitats on Site (good cover such as long grass, rushes, hedgerows, treelines and scrub provide suitable dispersal habitats for GCN moving between ponds and hibernacula). • Clear out fallen logs/debris from the bottom of the pond to create open areas for displaying males.
Badger	• Plant fruit bearing trees within line of trees and mixed scrub.
Bats	• Maintain trees on Site. • Bat boxes to be installed on retained trees or any new buildings to be placed on the Site.
Birds	• Retain mature trees, scrub, hedgerows and a good mix of habitats across the Site. • Plant fruit bearing trees within line of trees and mixed scrub. • Increase the diversity of seed providing plants across the Site in suitable habitats, such as plants from the thistle families.

Site Feature	Recommended Enhancements
	Bird boxes to be installed on retained trees or any new buildings to be placed on the Site.
Reptiles	Any felled materials should be retained and used on Site to create new log piles and hibernacula away from any footpaths and any other disturbing activities.
Other protected and/or otherwise notable species, .e.g. European hedgehog, Water shrew, Harvest Mouse, Yellow necked mouse.	- Retain existing line of trees around the perimeter of the Site. - Gap up the defunct hedgerow/fencing on Site (i.e., establish hedgerows by planting a mixture of native species) to promote connectivity and provide a diverse food source for a range of fauna. - Any felled materials should be retained and used on Site to create new log piles and hibernacula away from any footpaths. - Maintain waterlogged grassland around the perimeter of woodland.

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Figure 1: Site Location Map

Legend

 Site Boundary



0 200 400 m

Eastleigh Borough Council P21 & P22 Allington Lane - North Preliminary Ecological Appraisal

Figure 1
Site Location Plan

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

Figure 2: Habitat Map

Legend

-  Site Boundary
-  w1g6 - line of trees
-  r1e - canal or ditch
-  g3c - Other neutral grassland
-  g3c8 - Holcus-Juncus neutral grassland
-  w1d - Wet woodland
-  h3h - Mixed scrub
-  f2 - Fen, marsh and swamp
-  f2e - Reedbeds
-  u1b6 - Other developed land
-  u1d - Suburban mosaic of developed/natural surface
-  r1 - Standing open water and canals

Secondary codes:

- 11: Scattered Trees
- 15: Rushes Dominant
- 17: Ruderal/ ephemeral
- 19: Ponds (Priority Habitat)
- 25: Coastal and Floodplain Grazing Marsh
- 41: Freshwater - Natural
- 119: Seasonally Wet
- 191: Ditch
- 420: Green Access Route

Eastleigh Borough Council P21 & P22 Allington Lane - North Preliminary Ecological Appraisal

Figure 2 Habitat Map

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

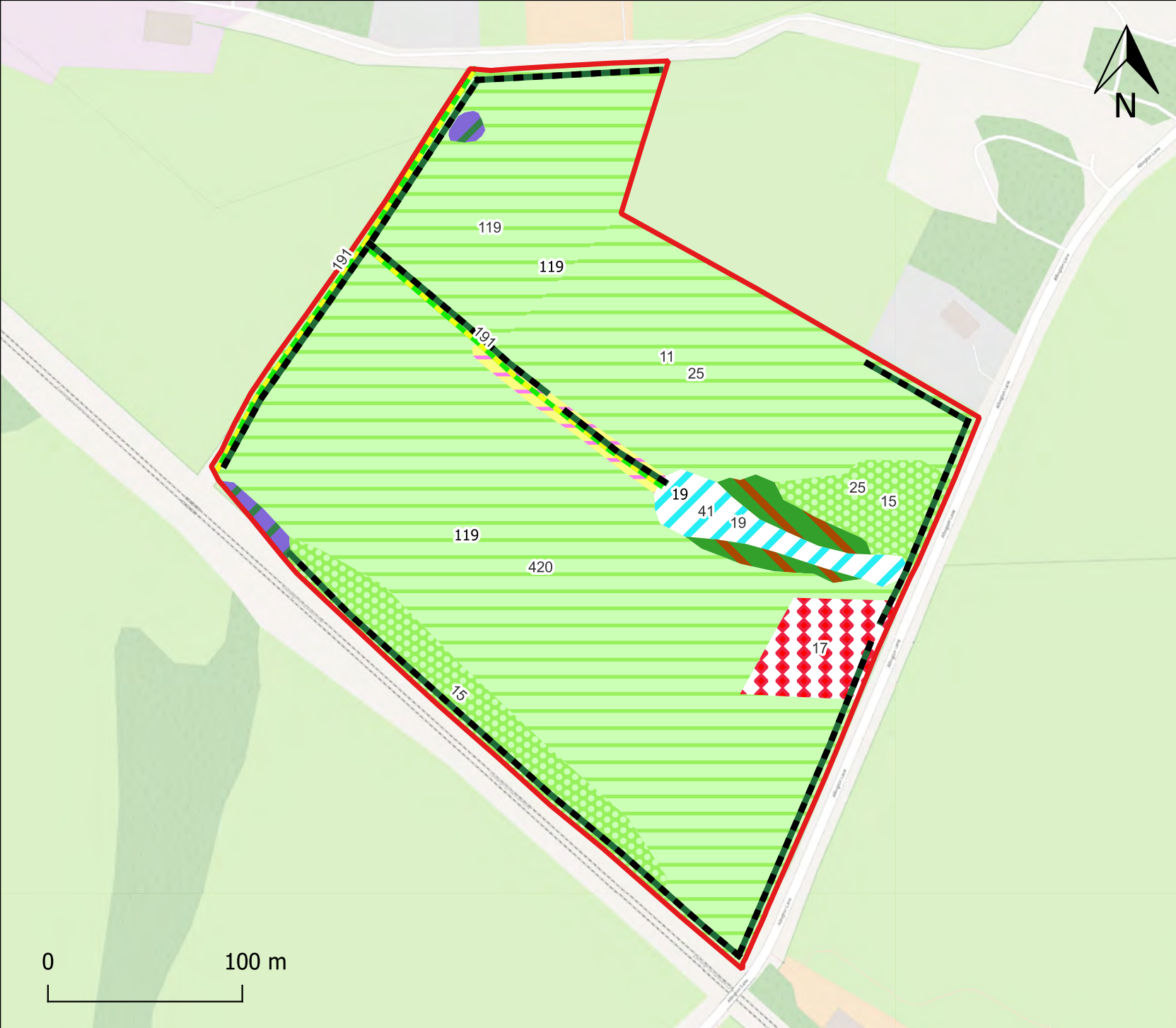


Figure 3: Trees with Bat Roost Potential

Legend

 Site Boundary

Bat Roost Suitability

 High

 Moderate



Eastleigh Borough Council
P21 & P22 Allington Lane - North
Preliminary Ecological Appraisal

Figure 3
Trees 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



- Plate 1 Area of hardstanding
- Plate 2 Suitable hibernacula within wooden panels
- Plate 3 Line of trees along eastern boundary of Site
- Plate 4 Suitable hibernacula within pile of old concrete fence posts

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Appendix 1: Site Habitat
Photographs



Plate 5 Small area of standing water adjacent to railway

Plate 6 Large gaps in line of trees and scrub

Plate 7 Drainage ditch

Plate 8 Grassland inundated with water, dominated by rushes



Plate 9 Fallen tree with signs of damage and decay

Plate 10 Stock fencing

Plate 11 Ditch within treeline

Plate 12 Hibernacula within the pile of refuse



Plate 13 Potential riparian zone

Plate 14 Dense scrub

Plate 15 Wet grassland

Plate 16 Allington Lane pond located within line of trees

Appendix 2: Wildlife 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 *Crocsmia* × *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: Botanical Species Lists per Habitat Type

Other neutral grassland

Common Name	Scientific Name	DAFOR Scale
Bristly oxtongue	<i>Helminthotheca echioides</i>	R
Common fleabane	<i>Pulicaria dysenterica</i>	LA
Creeping buttercup	<i>Ranunculus repens</i>	O
Dovesfoot cranesbill	<i>Geranium molle</i>	O
False oat grass	<i>Arrhenatherum elatius</i>	O
Fern species	-	R
Field cranesbill	<i>Geranium pratense</i>	R
Goat willow	<i>Salix caprea</i>	F
Pendulous sedge	<i>Carex pendula</i>	R
Ragwort	<i>Jacobaea vulgaris</i>	O
Spear thistle	<i>Cirsium vulgare</i>	O
Teasel	<i>Dipsacus fullonum</i>	R
Vetch species	<i>Vicia sp.</i>	R
White clover	<i>Trifolium repens</i>	O

Juncus neutral grassland

Common Name	Scientific Name	DAFOR Scale
Common sedge	<i>Carex nigra</i>	O
Creeping buttercup	<i>Ranunculus repens</i>	F
Meadow foxtail	<i>Alopecurus pratensis</i>	O
Soft rush	<i>Juncus effusus</i>	D
Spaghnum moss	<i>Sphagnum sp.</i>	LA
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	O
White clover	<i>Trifolium repens</i>	F

Line of trees 1

Common Name	Scientific Name	DAFOR Scale
Blackthorn	<i>Prunus spinosa</i>	F
Hawthorn	<i>Crataegus monogyna</i>	F
Oak	<i>Quercus robur</i>	F

Line of trees 2

Common Name	Scientific Name	DAFOR Scale
Common ivy	<i>Hedera helix</i>	F
Dogwood	<i>Cornus sanguinea</i>	R
Elder	<i>Sambucus nigra</i>	O
Goat willow	<i>Salix caprea</i>	O
Oak	<i>Quercus robur</i>	O

Line of trees 3

Common Name	Scientific Name	DAFOR Scale
Goat willow	<i>Salix caprea</i>	O
Hazel	<i>Corylus avellana</i>	F
Oak	<i>Quercus robur</i>	O

Line of trees 4

Common Name	Scientific Name	DAFOR Scale
Goat willow	<i>Salix caprea</i>	O
Hazel	<i>Corylus avellana</i>	F
Oak	<i>Quercus robur</i>	O

Line of trees 5

Common Name	Scientific Name	DAFOR Scale
Bramble	<i>Rubus fruticosus</i>	D
Goat willow	<i>Salix caprea</i>	O
Oak	<i>Quercus robur</i>	F

Mixed scrub

Common Name	Scientific Name	DAFOR Scale
Bramble	<i>Rubus fruticosus</i>	D
Pussy willow	<i>Salix discolor</i>	O
Teasel	<i>Dipsacus fullonum</i>	R
White willow	<i>Salix alba</i>	A

Reedbed

Common Name	Scientific Name	DAFOR Scale
Common reed	<i>Phragmites australis</i>	D
Willow species	<i>Salix sp</i>	O

Appendix 4: BNG Baseline Raw Data

A-1 Site Habitat Baseline

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		
1	Grassland	Other neutral grassland	6.16	Medium	4	Moderate	2	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (a)	49.28
2	Grassland	Floodplain Wetland Mosaic (CFGM)	1.86	High	6	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	Same habitat required =	25.67
3	Grassland	Other neutral grassland	0.55	Medium	4	Moderate	2	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (a)	4.40
4	Grassland	Floodplain Wetland Mosaic (CFGM)	0.29	High	6	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	Same habitat required =	4.00
5	Sparsely vegetated land	Ruderal/Ephemeral	0.29	Low	2	Poor	1	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required (a)	0.58
6	Lakes	Ponds (Priority Habitat)	0.24	High	6	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	Same habitat required =	3.31
7	Heathland and shrub	Mixed scrub	0.04	Medium	4	Poor	1	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (a)	0.16
8	Woodland and forest	Wet woodland	0.17	High	6	Moderate	2	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	2.04
9	Wetland	Reedbeds	0.12	High	6	Moderate	2	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	1.44
10												
11												
12												
Total habitat area			9.72									90.88

B-1 Site Hedgerow Baseline

Baseline ref	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		
1	G1	Line of Trees	0.35	Low	2	Moderate	2	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.40
2	G2	Line of Trees	0.31	Low	2	Moderate	2	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.24
3	G3	Native Hedgerow - Associated with bank or ditch	0.14	Medium	4	Moderate	2	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	1.12
4	G4	Line of Trees - Associated with bank or ditch	0.18	Low	2	Poor	1	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.36
5	G5	Line of Trees - Associated with bank or ditch	0.2	Low	2	Poor	1	Area/correspondence not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.40
			1.18									4.52

C-1 Site River Baseline

Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Watercourse encroachment		Riparian encroachment		Suggested action	Ecological baseline	
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		Total river units	
1	Ditches	0.24	Medium	4	Poor	1	Low potential/action not identified in any plan	Low Strategic Significance	1	No Encroachment	1	No Encroachment	1	Restore	0.96	
2	Ditches	0.2	Medium	4	Poor	1	Low potential/action not identified in any plan	Low Strategic Significance	1	No Encroachment	1	No Encroachment	1	Restore	0.80	
3																
4																
5																
6																
7																
		0.44														1.76

Headline Results

On-site baseline	<i>Habitat units</i>	90.88
	<i>Hedgerow units</i>	4.52
	<i>River units</i>	1.76

Appendix 5: Notable Bird Species Records within 2 km of the Site

Common Name	Scientific Name	Legal Protection/Conservation Status
Barn Owl	<i>Tyto alba</i>	Schedule 1 Part 1
Black Kite	<i>Milvus migrans</i>	-
Black Redstart	<i>Phoenicurus ochruros</i>	Amber, Schedule 1 Part 1
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
Corncrake	<i>Crex crex</i>	Red, Schedule 1 Part 1
Common 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>	-
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 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
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
Montagu's Harrier	<i>Circus pygargus</i>	Red, Schedule 1 Part 1
Nightingale	<i>Luscinia megarhynchos</i>	Red
Osprey	<i>Pandion haliaetus</i>	Amber, Schedule 1 Part 1
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
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
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
Wood Sandpiper	<i>Tringa glareola</i>	Amber, Schedule 1 Part 1
Woodcock	<i>Scolopax rusticola</i>	Red
Yellow Wagtail	<i>Motacilla flava</i>	Red, S41 NERC

