



**Land south of Littlehampton
Academy, Fitzalan Road,
Littlehampton, West Sussex**

August 2020

Land south of Littlehampton Academy, Fitzalan Road, Littlehampton, West Sussex

Preliminary Ecological Appraisal Report

Client:	BoKlok Housing Ltd	
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Abbreviations

CHS	Conservation of Habitats and Species Regulations 2017 (as amended)
EPS	European Protected Species
GCN	Great crested newt
HSI	Habitat Suitability Index
NERC	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
PEA	Preliminary Ecological Assessment
PRF	Potential (bat) Roost Feature
SNCI	Site of Nature Conservation Interest
SxBRC	Sussex Biological Records Centre
TN	Target Note
WCA	Wildlife & Countryside Act 1981 (as amended)

0 Executive Summary

0.1 Introduction

- 0.1.1 A Preliminary Ecological Appraisal was undertaken for the site of a proposed residential development at Land South of Littlehampton Academy, Fitzalan Road, Littlehampton, West Sussex (Grid Reference: 503303, 102623). The report was prepared to establish the site's suitability for development, inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the proposal site.

0.2 Results

- 0.2.1 There are no statutory or non-statutory designated sites within the 1km desk study search area. There are records of a range of protected or notable species in the locality, including amphibians, birds, invertebrates, terrestrial mammals, flowering plants and terrestrial reptiles, together with two priority and other habitats: Intertidal Mudflats and Open Water.
- 0.2.2 The survey area is located in Littlehampton in the Arun District of West Sussex, England. The site comprises c.2.4ha of previously developed land which is comprised predominantly of patchy semi improved grassland, with bramble scrub, tall ruderal vegetation, and young scattered trees. The survey area is bounded to the south, east and west by residential housing and Littlehampton Academy to the north. The wider landscape is characterised by the settlement of Littlehampton and associated urban/suburban greenspaces. Three ponds lie within 500m of the survey area.

0.3 Evaluation

- 0.3.1 Table 0.1 presents a summary of ecological constraints and opportunities identified within the survey area.

Table 0.1: Summary of ecological constraints and opportunities

Feature	Detail
Constraints:	
Designated sites	No wildlife sites, areas of Ancient Woodland or other Priority Habitats are likely to be affected by the proposed development as no designated sites or Ancient Woodland were identified within the desk study search area and the nearest small area of Priority Habitat is approximately 1km from the site.
Priority habitats	There are no priority habitats within or adjacent to the survey area which could be affected by the development proposals.
Other habitats	The proposed development would result in permanent losses of up to c.2.4ha of semi-improved and semi-improved grassland; scrub; tall ruderal vegetation;

Feature	Detail
	ephemeral/short perennial hard standing; and scattered trees depending on the extent and layout of development proposals. These areas are of relatively low ecological value and of importance at the site level only but provide habitats suitable for a number of protected species (e.g. nesting birds, amphibians and reptiles).
Great crested newt	Permanent loss of suitable terrestrial habitats (coarse grassland, tall ruderal, scrub, boundary trees). No impact on aquatic habitats.
Birds (nesting)	Possible permanent loss of nesting habitats (boundary trees, scrub).
Reptiles	Permanent losses of suitable reptile habitats (coarse grassland, tall ruderal, scrub, boundary trees).
Opportunities:	
Habitat enhancement	Habitat creation and enhancement opportunities include wildflower planting, hedgerow creation, habitat piles and bird/bat boxes.

0.4 Recommendations

0.4.1 Recommendations are made for further botanical or protected species surveys, together with preliminary recommendations for the protection of important ecological features to avoid or mitigate ecological impacts, and to deliver biodiversity net gain on site post-construction; these are summarised in Table 0.2. It is intended that these preliminary recommendations should be considered during future changes to the design of development proposals so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

Table 0.2: Summary of recommendations

#	Summary of recommendations
Botanical / protected species surveys	
R1	Presence / absence surveys for reptiles, undertaken between April and September within suitable habitats on site.
Precautionary measures	
R2	Vegetation clearance works will be undertaken during the GCN active season (March to October) and in accordance with a Non-Licensed Method Statement to reduce the risk of killing/injury to GCN. Works under the Method Statement will not take place until the reptile survey and any necessary reptile mitigation has been completed.
R3	Removal of nesting bird habitats (including vegetation and buildings) will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February, but should be planned and implemented in accordance with the findings of the further ecological surveys recommended above.
Ecological protection measures	
R4	Standard site procedures to prevent impacts on trees will be adhered to during construction.
R5	Standard site procedures to prevent impacts on nearby aquatic environments will be adhered to during construction.

#	Summary of recommendations
R6	The use of external lighting will be avoided or minimised to prevent impacts to nocturnal species such as bats. Lighting will not be directed towards the boundaries of the site, especially the southern boundary.
R7	Small access gaps will be provisioned at the base of new fence boundaries to enable continued dispersal of small mammals across the site.
R8	At the end of each working day excavations will be covered over and open pipework capped to prevent entrapment of mammals, amphibians and other fauna.
R9	Where fox dens or rabbit warrens are to be damaged or destroyed as part of the proposed works, this will be done by a registered pest control company.
Biodiversity net gain	
R10	Buffers of less intensively managed vegetation (e.g. coarse grasses and wildflowers) will be created within soft landscaped areas to maintain/enhance ecological connectivity.
R11	Hedgerow creation and/or restoration will use a range of native fruit, seed, nut and nectar-bearing shrub species of local provenance.
R12	The site's landscaping plans will utilise plant species which encourage bats by providing additional food sources or roosting opportunities.
R13	Habitat piles for amphibians, invertebrates and reptiles will be created within areas of retained rough grassland, scrub or woodland.
R14	The value of the site for birds will be enhanced by installing a range of artificial nest boxes onto new buildings and retained trees.
R15	The value of the site for bats will be enhanced by installing a range of artificial roost boxes onto new buildings and retained trees.

0.5 Conclusions

- 0.5.1 The majority of land proposed for development is of low ecological value. Significant constraints to development were identified including the potential presence of nesting birds and reptiles. Further ecological surveys and impact assessment are required prior to submitting a planning application, to determine whether and how the site is being used by protected species and to formulate a suitable mitigation strategy. Precautionary and ecological protection measures are recommended on an interim basis to enable offences under the relevant legislation to be avoided, along with recommendations for biodiversity net gain.

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1 Introduction

1.1 Purpose of this Report

- 1.1.1 This report presents a Preliminary Ecological Appraisal for the site of a proposed residential development at Land South of Littlehampton Academy, Fitzalan Road, Littlehampton, West Sussex (Grid Reference: 503303, 102623). The report has been prepared to establish the site's suitability for development, inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the proposal site.

1.2 Objectives and Approach of the Study

- 1.2.1 The objectives of the Preliminary Ecological Appraisal were to:
- ✧ Identify features present on the site or adjacent which are ecologically significant and which may act as constraints or opportunities to the proposed development;
 - ✧ Consider the need for further ecological surveys which may be necessary; and
 - ✧ Make preliminary recommendations for the protection of important ecological features, to avoid or mitigate ecological impacts, and to enhance the ecology of the site post-construction, with the aim of achieving an overall net gain for biodiversity.
- 1.2.2 The approach to establishing the ecological baseline found within this report has been achieved through:
- ✧ A desk study involving a review of statutory and non-statutory nature conservation sites, and records of habitats and species from the local area (1km radius from the centre of the proposed development site);
 - ✧ An extended Phase 1 habitat survey identifying the main habitats on site and adjacent, and the presence of, or potential for, protected and/or notable species; and
 - ✧ A Preliminary Ecological Appraisal of the effects of development proposals with respect to the nature conservation value of the site.

1.3 Survey Area

- 1.3.1 The survey area is located in Littlehampton in the Arun District of West Sussex, England. The site comprises c.2.4ha of previously developed land which is comprised predominantly of patchy semi improved grassland, with bramble scrub, tall ruderal vegetation, and young scattered trees.
- 1.3.2 The survey area is bounded to the south, east and west by residential housing and Littlehampton Academy to the north. The extent of the survey area is outlined in red on Figure 1.1.

- 1.3.3 The wider landscape is characterised by the settlement of Littlehampton and associated urban/suburban greenspaces. Three ponds lie within 500m of the survey area.

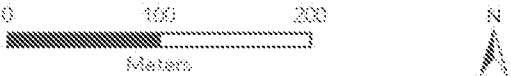
1.4 Proposed Construction Activities

- 1.4.1 Planning consent is being sought for a residential development. The proposals would include construction of 104 units, together with parking, access, landscaping and associated facilities. No indicative or proposed layout plans were available at the time of writing.

Land south of Littlehampton
Academy, Fitzalan Road,
Littlehampton, West Sussex

 Survey area

Figure 1.1: Survey area



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Ordnance Survey 0100031573

Scale: 1:5,000 Created by: AD
Date: June 2020 Reviewed by: NP
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2 Survey Methodology

2.1 Desk Study

2.1.1 A desk-based study was undertaken to examine published information and biological records from within the search area (site centroid plus 1km). The desk study established the presence of designated sites of nature conservation interest, or records of protected/notable habitats/species within the site and its surrounding area. This information was collected from the following sources:

- ✦ The 'MAGIC' (Multi-agency Geographic Information for the Countryside) website: www.magic.gov.uk and,
- ✦ Sussex Biological Records Centre (SxBRC).

2.2 Preliminary Ecological Appraisal

2.2.1 The Preliminary Ecological Appraisal (compliant to British Standard BS42020:2013) is based on a survey of the site undertaken on 16 June 2020 by an experienced ecologist. Weather conditions were warm (c.23°C), with a light north-westerly breeze (Beaufort Scale 2), 10% cloud cover and no precipitation.

2.2.2 Within the survey area every parcel of land was classified, recorded and mapped using standard colour codes, in accordance with a list of ninety habitat types specified within the methodology for Phase 1 habitat survey (Joint Nature Conservation Council, 2010). This allows rapid visual assessment of the extent and distribution of different habitat types. Target notes were used to provide supplementary information on features which were particularly interesting or significant to specific construction proposals, or too small to map, or to provide additional details, for example relating to species composition and structure.

2.2.3 This basic methodology was extended to provide more detail in relation to habitats with potential to support rare or protected fauna, as described by the Chartered Institute of Ecology and Environmental Management's *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017b). The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual* (Gent and Gibson, 2003) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collin (ed.), 2016). Where a species/group is not specifically evaluated, this indicates that no habitat of potential value for the species was identified during the survey.

Scope of the survey

2.2.4 The buffer zone for the desk study was set at 1km from the centre of the site – a distance within which any notable ecological features likely to be affected by the proposed scheme would be identified.

- 2.2.5 All habitats within the survey area as indicated on Figure 1.1 were included in order to identify any ecological constraints that would be likely to apply to the scheme from within this zone. Adjacent habitats were also surveyed where appropriate in order to identify constraints falling outside of the proposed development site and to place the survey area in its ecological context.

Evaluation criteria

- 2.2.6 Important ecological features were evaluated to the extent possible under the survey methods used, and in relation to a geographical frame of reference, i.e. international/European value being most important, then national, regional, metropolitan/county/district/borough, and lastly local (based on CIEEM, 2018). Where a feature is of no more than site value, this is stated.
- 2.2.7 Value judgements are based on various characteristics that contribute to the importance of ecological features. These include site designations (such as Sites of Special Scientific Interest, or for undesignated features, the extent, naturalness, conservation status (local or national importance and so on), and quality of the ecological resource. Quality can refer to habitats (for instance if they are particularly diverse, are a good example of a specific habitat type, or provide for the requirements of important species or assemblages), other features (such as connectivity provided by wildlife corridors or mosaics of habitats) or the richness and abundance of species populations or assemblages.

2.3 Preliminary Roost Assessment

- 2.3.1 Trees within/adjacent to the survey area were subject to an external ground level inspection for potential bat roost features. All observable features potentially suitable for bats were noted and the overall suitability of the tree for roosting bats was classified with reference to Box 1 (Collins (ed.), 2016). The objective was to establish whether each feature was of negligible, low, moderate or high roosting bat suitability, or a confirmed roost based on the presence of bats or their droppings.
- 2.3.2 Trees were assessed for PRFs such as woodpecker holes, cavities, cracks or splits in major limbs (e.g. hazard beams, rot holes, frost cracks, knot holes, occlusions, flush cuts, tear-outs, cankers or butt-rots), loose platey bark, aerial deadwood and dense ivy or epicormic growth. The tree inspection was carried out from ground level.

Box 1: Potential suitability of structures/trees for roosting bats (after Collins, 2016)	
Suitability	Roosting habitats
<u>Negligible</u>	Negligible habitat features on site likely to be used by roosting bats
<u>Low</u>	A structure with one or more potential roost features (PRF) that could be used by individual bats opportunistically, but do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats A tree of sufficient size and age to contain PRFs but with none seen from the ground / using ladders or features seen with only very limited roosting potential
<u>Moderate</u>	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to

Box 1: Potential suitability of structures/trees for roosting bats (after Collins, 2016)

	support a roost of high conservation status (for roost type only)
<u>High</u>	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat
<u>Confirmed roost</u>	Bats or unequivocal evidence of bats found, i.e. bat droppings

2.4 Limitations

- 2.4.1 Biological records gathered during the desk study can provide an indication of the likely presence of a species on or adjacent to a site, however, the absence of records for protected species does not equate to evidence of their absence from the locality. Data search accuracy is variable and records are often georeferenced to the nearest 1km grid square.
- 2.4.2 Time of year when the survey was carried out and other variations will influence the results of the survey. Botanical species vary considerably in their flowering, seeding and fruiting periods, and surveys outside of these periods can confound accurate species identification. Where this is the case plants have been identified to lowest possible taxonomic group, normally genus. The possibility nonetheless exists for other species to be present on the site which were not recorded or otherwise indicated by the survey. Ornamental species are not included in botanical listings.
- 2.4.3 The survey reported herein was carried out in mid-summer, during the flowering period for many botanical species, and the timing of the survey is not considered to be a significant limitation to meeting the objectives of the survey.
- 2.4.4 There were no difficulties in gaining access to survey the site's habitats and assess protected species suitability. Adjacent habitats were surveyed where appropriate in order to identify constraints falling outside of the proposed development site and to place the survey area in its ecological context. However, the adjacent residential gardens to the south east and west could not be surveyed for signs of species such as badger due to access restrictions. In addition, two of the off-site ponds were not assessed for amphibian suitability
- 2.4.5 This report aims to provide general advice on the ecological constraints associated with development proposals for the site and includes recommendations for further survey where appropriate. Where impacts are likely or further ecological surveys are recommended, a more detailed Ecological Impact Assessment (EclA) of the effects of the proposed development should be carried out based on the results of recommended surveys. The EclA will include detailed advice on ecological avoidance, mitigation, enhancement and/or compensation measures. This is in line with the latest guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017a, 2017b, 2018).
- 2.4.6 See Appendix V for general Legal and Technical Limitations which apply to this document.

2.5 Personnel

- 2.5.1 The site survey was carried out by Anna Douglas BSc(Hons) MSc GradCIEEM, an Ecologist with four years' professional consultancy experience. Anna holds Natural England Class Licences to survey for great crested newt (WML-CL09) and bats (WML-CL17). The report was reviewed by Dr Richard Bickers BSc(Hons) PhD MCIEEM, a Senior Ecologist with thirteen years' ecological consultancy experience. Richard holds a Natural England Class Licence to survey for great crested newt (WML-CL09). The report was further reviewed by Nick Pincombe BA(Hons) MSc CEnv MIEMA MCIEEM, Director of Urban Edge Environmental Consulting, who has fifteen years' experience in leading survey and impact assessment teams for a wide range of ecology and environmental planning projects. Nick holds Natural England Class Licences to survey for bats (WML-CL18) and great crested newt (WML-CL08).

3 Results

3.1 Desk Study

Statutory and non-statutory site designations

- 3.1.1 There are no statutory or non-statutory designated sites within the 1km desk study search area.

Priority habitats

- 3.1.2 Priority habitats include those listed on local Biodiversity Action Plans and habitats of principal importance listed under section 41 of the Natural Environment and Rural Communities Act 2006. SxBRC and a search of the MAGIC database returned the following data on priority and other habitats within the desk study search area, Intertidal Mudflats and Open Water. None of these are shown as present within the survey area; see **Figure 3.1**.

Records of protected, rare and notable species

- 3.1.3 Biological records were obtained from SxBRC for the desk study search area and are summarised in Table 3.1.

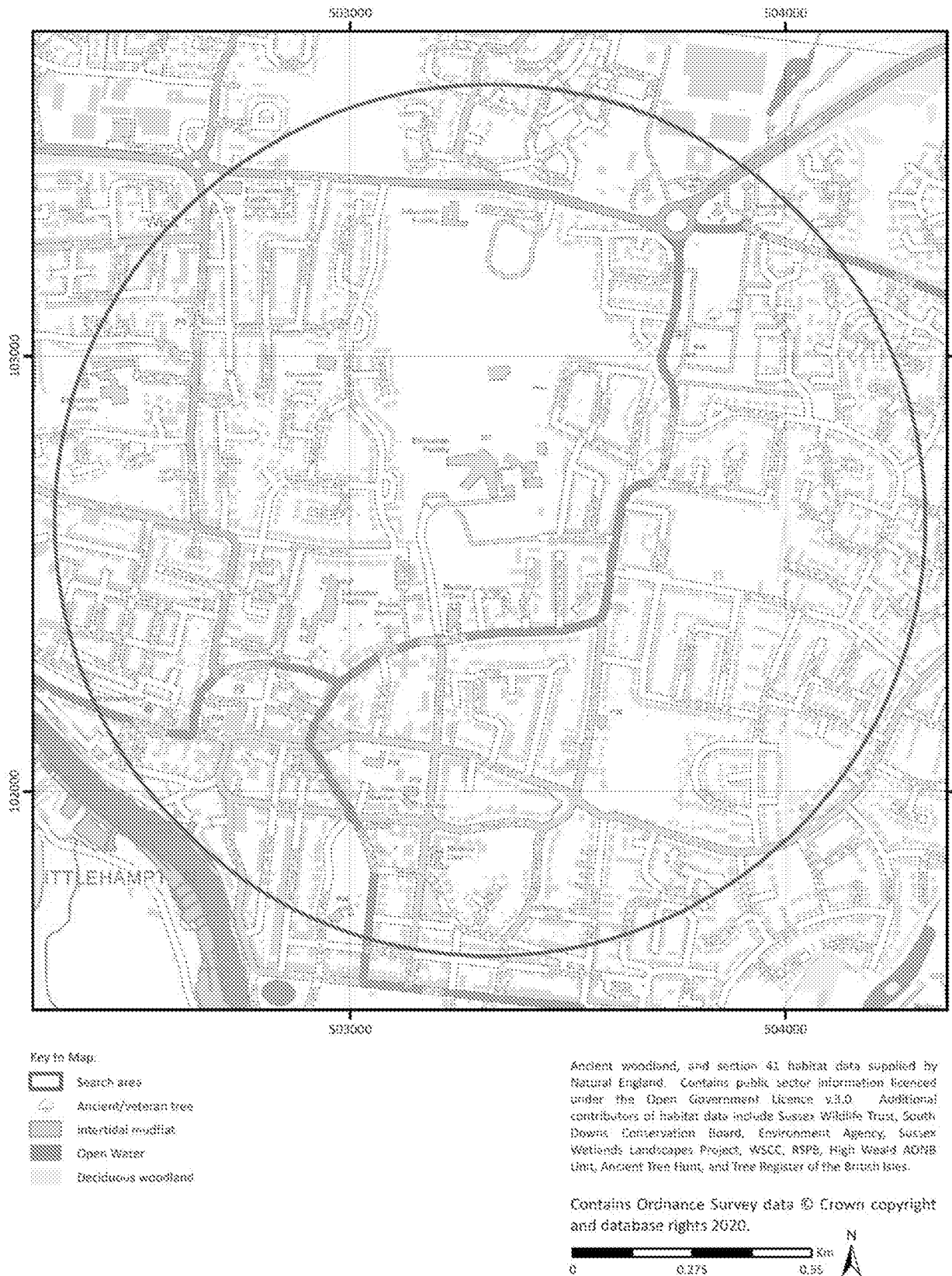


Figure 3.1: Priority and other habitats within the desk study search zone

Table 3.1: Records of protected, rare & notable species within the desk study search area

Group	Species	Protection
Amphibians	Common Toad <i>Bufo bufo</i>	WCA Sch.5 partial, NERC s41
	Smooth Newt <i>Lissotriton vulgaris</i> , Common Frog <i>Rana temporaria</i>	WCA Sch.5 partial
Birds (note: species may appear more than once)	Kingfisher <i>Alcedo atthis</i> , Short-eared Owl <i>Asio flammeus</i> , Barnacle goose <i>Branta leucopsis</i> , Nightjar <i>Caprimulgus europaeus</i> , Corncrake <i>Crex crex</i> , Bewick's swan <i>Cygnus columbianus</i> , Little Egret <i>Egretta garzetta</i> , Merlin <i>Falco columbarius</i> , Black-throated diver <i>Gavia arctica</i> , Great northern diver <i>Gavia immer</i> , Red-throated Diver <i>Gavia stellata</i> , Mediterranean Gull <i>Larus melanocephalus</i> , Red Kite <i>Milvus milvus</i> , Osprey <i>Pandion haliaetus</i> , Red-necked Phalarope <i>Phalaropus lobatus</i> , Slavonian Grebe <i>Podiceps auritus</i> , Pied Avocet <i>Recurvirostra avosetta</i> , Dartford Warbler <i>Sylvia undata</i>	Birds Dir.Ax.1
	Kingfisher <i>Alcedo atthis</i> , Short-eared Owl <i>Asio flammeus</i> , Scaup <i>Aythya marila</i> , Cetti's Warbler <i>Cettia cetti</i> , Black Tern <i>Chlidonias niger</i> , Corncrake <i>Crex crex</i> , Merlin <i>Falco columbarius</i> , Red-throated Diver <i>Gavia stellata</i> , Mediterranean Gull <i>Larus melanocephalus</i> , Black-Tailed Godwit <i>Limosa limosa</i> , Common Crossbill <i>Loxia curvirostra</i> , Hobby <i>Falco subbuteo</i> , Common Scoter <i>Melanitta nigra</i> , Bee-eater <i>Merops apiaster</i> , Red Kite <i>Milvus milvus</i> , Osprey <i>Pandion haliaetus</i> , Black Redstart <i>Phoenicurus ochruros</i> , Spoonbill <i>Platalea leucorodia</i> , Slavonian Grebe <i>Podiceps auritus</i> , Fiercest <i>Regulus ignicapilla</i> , Pied Avocet <i>Recurvirostra avosetta</i> , Serin <i>Serinus serinus</i> , Dartford Warbler <i>Sylvia undata</i> , Barn Owl <i>Tyto alba</i>	WCA Sch.1
	Lesser Redpoll <i>Acanthis cabaret</i> , Skylark <i>Alauda arvensis</i> , Tree Pipit <i>Anthus trivialis</i> , Scaup <i>Aythya marila</i> , Nightjar <i>Caprimulgus europaeus</i> , Corncrake <i>Crex crex</i> , Cuckoo <i>Cuculus canorus</i> , Yellowhammer <i>Emberiza citrinella</i> , Reed Bunting <i>Emberiza schoeniclus</i> , Corn Bunting <i>Emberiza calandra</i> , Lesser Spotted Woodpecker <i>Dendrocopos minor</i> , Dunnock <i>Prunella modularis</i> , Herring Gull <i>Larus argentatus</i> , Black-Tailed Godwit <i>Limosa limosa</i> , Linnet <i>Linaria cannabina</i> , Grasshopper Warbler <i>Locustella naevia</i> , Common Scoter <i>Melanitta nigra</i> , Yellow Wagtail <i>Motacilla flava</i> , Spotted Flycatcher <i>Muscicapa striata</i> , Curlew <i>Numenius arquata</i> , House Sparrow <i>Passer domesticus</i> , Tree Sparrow <i>Passer montanus</i> , Grey Partridge <i>Perdix perdix</i> , Wood Warbler <i>Phylloscopus sibilatrix</i> , Bullfinch <i>Pyrrhula pyrrhula</i> , European Turtle Dove <i>Streptopelia turtur</i> , Starling <i>Sturnus vulgaris</i> , Song Thrush <i>Turdus philomelos</i> , Ring Ouzel <i>Turdus torquatus</i> , Lapwing <i>Vanellus vanellus</i>	NERC s41
	Lesser Redpoll <i>Acanthis cabaret</i> , Skylark <i>Alauda arvensis</i> , Tree Pipit <i>Anthus trivialis</i> , Scaup <i>Aythya marila</i> , Cuckoo <i>Cuculus canorus</i> , Ringed plover <i>Charadrius hiaticula</i> , Corncrake <i>Crex crex</i> , Lesser Spotted Woodpecker <i>Dendrocopos minor</i> , Corn Bunting <i>Emberiza calandra</i> , Yellowhammer <i>Emberiza citrinella</i> , Merlin <i>Falco columbarius</i> , Pied	RL

Group	Species	Protection
	Flycatcher <i>Ficedula hypoleuca</i> , Herring Gull <i>Larus argentatus</i> , Black-tailed godwit <i>Limosa limosa</i> , Linnet <i>Linaria cannabina</i> , Grasshopper Warbler <i>Locustella naevia</i> , Common Scoter <i>Melanitta nigra</i> , Yellow Wagtail <i>Motacilla flava</i> , Spotted Flycatcher <i>Muscicapa striata</i> , Curlew <i>Numenius arquata</i> , House Sparrow <i>Passer domesticus</i> , Tree Sparrow <i>Passer montanus</i> , Black Redstart <i>Phoenicurus ochruros</i> , Grey Partridge <i>Perdix perdix</i> , Wood Warbler <i>Phylloscopus sibilatrix</i> , Slavonian Grebe <i>Podiceps auritus</i> , Whinchat <i>Saxicola rubetra</i> , Woodcock <i>Scolopax rusticola</i> , Turtle Dove <i>Streptopelia turtur</i> , Starling <i>Sturnus vulgaris</i> , Ring Ouzel <i>Turdus torquatus</i> , Song Thrush <i>Turdus philomelos</i> , Lapwing <i>Vanellus vanellus</i>	
	Common Sandpiper <i>Actitis hypoleucos</i> , Kingfisher <i>Alcedo atthis</i> , Mallard <i>Anas platyrhynchos</i> , Meadow Pipit <i>Anthus pratensis</i> , Swift <i>Apus apus</i> , Short-eared Owl <i>Asio flammeus</i> , Barnacle goose <i>Branta leucopsis</i> , Nightjar <i>Caprimulgus europaeus</i> , Black-headed Gull <i>Chroicocephalus ridibundus</i> , Stock Dove <i>Columba oenas</i> , Bewick's swan <i>Cygnus bewickii</i> , Mute Swan <i>Cygnus olor</i> , House Martin <i>Delichon urbicum</i> , Reed Bunting <i>Emberiza schoeniclus</i> , Kestrel <i>Falco tinnunculus</i> , Snipe <i>Gallinago gallinago</i> , Black-throated diver <i>Gavia arctica</i> , Great northern diver <i>Gavia immer</i> , Oystercatcher <i>Haematopus ostralegus</i> , Common Gull <i>Larus canus</i> , Lesser Black-backed Gull <i>Larus fuscus</i> , Black-backed Gull <i>Larus marinus</i> , Mediterranean Gull <i>Larus melanocephalus</i> , Osprey <i>Pandion haliaetus</i> , Redstart <i>Phoenicurus phoenicurus</i> , Spoonbill <i>Platalea leucorodia</i> , Dunnock <i>Prunella modularis</i> , Bullfinch <i>Pyrrhula pyrrhula</i> , Pied Avocet <i>Recurvirostra avosetta</i> , Tawny Owl <i>Strix aluco</i> , Dartford Warbler <i>Sylvia undata</i> , Redshank <i>Tringa totanus</i>	AL
Invertebrates	White-letter Hairstreak <i>satyrium w-album</i>	WCA Sch.5 partial
	Knot Grass <i>Acronicta rumicis</i> , Grey Dagger <i>Acronicta psi</i> , Beaded Chestnut <i>Agrochola lychnidis</i> , Ear Moth <i>Amphipoea oculatea</i> , Dusky Brocade <i>Apamea remissa</i> , Centre-barred Sallow <i>Atethmia centrargo</i> , Minor Shoulder-knot <i>Brachylomia viminalis</i> , Mottled Rustic <i>Caradrina Morpheus</i> , Small Heath <i>Coenonympha pamphilus</i> , Small Square-spot <i>Diarsia rubi</i> , September Thorn <i>Ennomos erosaria</i> , Dusky Thorn <i>Ennomos fuscantaria</i> , August Thorn <i>Ennomos quercinaria</i> , Galium Carpet <i>Epirrhoe galiata</i> , Spinach <i>Eulithis mellinata</i> , Crescent <i>Helotropha leucostigma</i> , Rustic <i>Hoplodrina blanda</i> , Rosy Rustic <i>Hydraecia micacea</i> , Shoulder-striped Wainscot <i>Leucania comma</i> , Dot Moth <i>Melanchra persicariae</i> , Pretty Chalk Carpet <i>Melantheria procellata</i> , Lunar Yellow Underwing <i>Noctua orbona</i> , Large Wainscot <i>Rhizodra lutosus</i> , White-letter Hairstreak <i>Satyrium w-album</i> , White Ermine <i>Spilosoma lubricipeda</i> , Buff Ermine <i>Spilosoma lutea</i> , Blood-Vein <i>Timandra comae</i> , Cinnabar <i>Tyria jacobaeae</i>	NERC s41

Group	Species	Protection
Mammals (terrestrial)	Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full, NERC s41
	Serotine Bat <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> ,	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
	West European Hedgehog <i>Erinaceus europaeus</i>	NERC s41
Plants	Bluebell <i>Hyacinthoides non-scripta</i>	WCA Sch.8
Reptiles (terrestrial)	Slow Worm <i>Anguis fragilis</i> , Common Lizard <i>Zootoca vivipara</i>	WCA Sch.5 part, NERC s41

Habs.Dir.2/4/5	Habitats Directive 92/43/EEC Annex 2, 4 or 5
CHS Sch.2	Conservation of Habitats & Species Regulations 2017 Schedules 2 (EPS animals)
WCA s1/Sch.5/8	Wildlife and Countryside Act 1981 Section 1 / Schedules 5 (fully or partially protected), 6 or 8
NERC s41	Natural Environment & Rural Communities Act 2006 Section 41 Species of Principal Importance

3.2 Phase 1 Habitats

3.2.1 The following Phase 1 habitats were identified within or adjacent to the survey area and are shown on the Phase 1 habitats map at Appendix I. The habitats are described below broadly in the order of their extent.

- ✧ Semi-improved grassland;
- ✧ Scrub;
- ✧ Tall ruderal vegetation;
- ✧ Ephemeral/short perennial
- ✧ Hard standing; and
- ✧ Scattered trees

Semi-improved grassland

3.2.2 The site is comprised predominately of a semi-improved grassland field with some boundary features. The grassland sward was relatively coarse but variable, with some areas above 0.5m in height and tussocky in places.

3.2.3 The grassland comprised common and widespread species including abundant Yorkshire fog *Holcus lanatus*, perennial rye grass *Lolium Perenne*, barren brome *Bromus Sterilis*, pendulous sedge *Carex Pendula*, frequent ribwort plantain *Plantago lanceolata*, white clover *Trifolium Repens*, broad leaf dock *Rumex Obtusifolius*, mallow *malva sp*, creeping buttercup *Ranunculus Repens*, occasional spear thistle *Cirsium vulgare*, bristly ox tongue *Picris echioides* and fennel *Foeniculum vulgare*.



Grassland to the east of the site



Tussocky grassland to the southern boundary

Scrub

- 3.2.4 Scrub vegetation bordered the site to the south. Significant areas of scrub were also present to the west of the site. The scrub sections were predominantly found on banked areas in the south and west. The scrub to the south was very dense and impenetrable and contained a number of young trees. These were being used by a roosting flock of starlings at the time of survey. The scrub consisted of bramble *Rubus fruticosus*, elder *Sambucus nigra*, buddleia *Buddleja davidii*, hawthorn *Crataegus monogyna* and ivy *Hedera helix*.



Scrub section north west



Scrub to the south (trees in distance are not within survey area)



Banked scrub to the south west



Scrub to the southern border

Tall ruderal vegetation

- 3.2.5 Tall ruderal was scattered throughout the site, with the largest sections located on banked areas to the south and west, adjacent to the scrub. The dominant species were nettle *Urtica dioica*, spear thistle *Cirsium vulgare*, broad leaf dock *Rumex obtusifolius* spear thistle, field bindweed *Convolvulus arvensis* and cleavers *Galium aparine*.



Tall ruderal vegetation on the banked area in the west

Ephemeral/short perennial

- 3.2.6 The centre of the site consisted of an area of ephemeral short perennial vegetation, including broad leaved dock, common vetch *Vicia sativa* and bristly ox tongue. A hard standing trackway ran along the south of the site, and up through its middle section, to a larger area in the north west. Some ephemeral short perennial species were located on and adjacent to the hard standing.



Hard standing and ephemeral short perennial species to the north west

Scattered trees

- 3.2.7 Scattered trees were present throughout the site, predominantly towards the southern boundary, forming a mixed tree line, combined with dense scrub. Species included elder *Sambucus nigra*, hawthorn, poplar *Populus* sp. oak, *Quercus robur* and silver birch *Betula*

Pendula. The trees were young or semi mature, no potential for roosting bat species was noted.



Oak tree, centre of site



Young trees to southern boundary

4 Evaluation

4.1 Introduction

- 4.1.1 This section evaluates the survey area in terms of the habitats and species present or potentially present on site or its immediate vicinity, in the context of relevant legislation and planning policy. See Appendix V for a review of the legislation and planning context.

4.2 Designated Sites

- 4.2.1 No wildlife sites, areas of Ancient Woodland or other Priority Habitats are likely to be affected by the proposed development as no designated sites or Ancient Woodland were identified within the desk study search area and the nearest small area of Priority Habitat is approximately 1km from the site.

4.3 Habitats

Evaluation

- 4.3.1 Table 4.1 presents a preliminary evaluation of the habitats recorded within or adjacent to the survey area, with reference to the criteria defined at section 2.2.6. It is important to note that these preliminary evaluations may be updated following completion of more detailed botanical or protected species surveys.

Table 4.1: Preliminary evaluation of habitats within the survey area

Habitat	Evaluation	Rationale
Semi-improved grassland	Site	Common and widespread species and habitat. Main value lies in potential to support protected species (e.g. amphibians, reptiles).
Tall ruderal vegetation	Site	
Ephemeral/ short perennial	Site	
Hard standing	Site	n/a
Scattered trees and scrub	Site	Small number and extent. Main value lies in potential to support protected species, such as amphibians, breeding birds and reptiles

Priority habitats

- 4.3.2 There are no priority habitats within or adjacent to the survey area which could be affected by the development proposals.

Other habitats

- 4.3.3 The proposed development would result in permanent losses of up to c.2.4ha of semi-improved and semi-improved grassland; scrub; tall ruderal vegetation; ephemeral/short perennial hard standing; and scattered trees depending on the extent and layout of development proposals. These areas are of relatively low ecological value and of importance at the site level only but provide habitats suitable for a number of protected species (e.g. nesting birds, amphibians and reptiles).

4.4 Species

Amphibians (excluding great crested newt)

- 4.4.1 SxBRC returned 30 records of common amphibian species, including common frog *Rana temporaria*, common toad *Bufo bufo* and smooth newt *Lissotriton vulgaris* from within the desk-study search zone, during the period 1992-2015. There are no ponds within the site, one pond lies to the west of the survey area and a further two ponds lie within 500m of the site.
- 4.4.2 Most of the site, but particularly the areas of tall ruderal and scrub provide potentially suitable terrestrial habitats for common amphibian species. Further, habitats of similar suitability are widely available in the surrounding area. Common amphibians are therefore not considered to present a constraint to the development proposals.

Great crested newt

- 4.4.3 SxBRC returned no records of great crested newt (GCN) *Triturus cristatus* from within the desk-study search zone.
- 4.4.4 The survey area contains good quality terrestrial habitats for GCN, dominated by grassland and tall ruderal of varying heights and structures which are suitable for foraging. Boundary treelines and scrub provide shelter and dispersal habitat.
- 4.4.5 There are no ponds within the survey area, but analysis of Ordnance Survey maps and aerial photography indicated that there are three ponds present within 500m of the site, with the closest pond P1 adjacent to the site to the west.
- 4.4.6 Pond P1 is a balancing pond <10m to the west of the site, and was dry at the time of survey. It comprises a moderate sized pond, surrounded by moderate suitability habitat.
- 4.4.7 HSI assessments of ponds P2 and P3 were not carried out as they were separated from the site by substantial areas of hard standing and moderately busy roads.
- 4.4.8 P2 is 180m south west and P3 is 480m north east of the survey area. Research undertaken by Natural England (Cresswell & Whitworth, 2004) suggests GCN will rarely move further than 200-250m from a breeding pond, with much reduced distances recorded where adjacent habitats are of good quality. Jehle (2000) also determined a terrestrial zone of 63m, within which 95% of

summer GCN refuges were located. In addition, following the breeding season, Jehle and Arntzen (2000) recorded 64% of newts within 20m of the pond edge.

- 4.4.9 Due to their distance from the site, as well as the unsuitable habitats that lie between them, it is considered unlikely that any great crested newts that may be present in P2 and P3 would use terrestrial habitats present within the survey area.
- 4.4.10 In conclusion, although terrestrial habitat suitable for GCN is present within the survey area, the absence of potentially suitable breeding ponds connected to the site means that GCN is unlikely to use the site. Site preparation works will be undertaken in accordance with a Non-Licensed Method Statement to reduce the residual risk of killing/injury to GCN, as recommended at section 5.3.

Birds (nesting)

- 4.4.11 SxBRC returned 625 records of notable bird species from within the desk-study search zone during a date range of 1981 to 2018. There is potential for the scrub and trees to be used by nesting birds. The grassland is considered unlikely to support ground-nesting species such as skylark *Alauda arvensis* (BoCC4 Red-listed) or meadow pipit *Anthus pratensis* (BoCC4 Amber-listed) due to the relatively small field size. Furthermore, no ground nesting birds were recorded during the survey, despite this taking place during the breeding season. Precautionary measures for nesting birds are recommended at section 5.3.

Invertebrates

- 4.4.12 SxBRC returned 172 records of notable and protected invertebrate from within the desk-study search zone, during a date range of 1990 to 2019.
- 4.4.13 The grassland, tall ruderal, and scrub provide some limited opportunities for a range of common and widespread invertebrates. These habitats are abundant within the wider landscape, and thus the limited losses within the site resulting from development are not considered likely to significantly affect invertebrate communities. Invertebrates are not considered to present a constraint to the development proposals and no further surveys for this group are required

Mammals (terrestrial)

Badger

- 4.4.14 SxBRC does not supply badger *Meles meles* records for animal welfare reasons.
- 4.4.15 The survey area provides suitable foraging habitat for badger but limited sett creation potential. A search for badger setts and signs of their presence was undertaken within and immediately adjacent to the site, and no setts or other signs of badgers were observed. Badger is not considered to present a constraint to the development proposals and no further surveys for this species are required. General ecological protection measures for badgers and other mammals are advised in section 5.4

Bats

- 4.4.16 SxBRC returned 22 records of four species of bat from within 1km of the survey area, during a date range of 2006 to 2016, including serotine *Eptesicus serotinus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus* as well as *Myotis* sp. bats. Most of these records were of bats in flight but included eight roost sites.
- 4.4.17 No potential roost features were observed in any trees during a ground-level assessment. There are no buildings or structures on site.
- 4.4.18 The grassland, tall ruderal, and scrub habitats within the survey area provide a small area of low to moderate suitability foraging habitat for bats. Given the scale of development proposed, the small area (c.2.4ha) of suitable habitat to be affected, significant impacts to foraging/commuting bats are unlikely. Further bat activity surveys are not considered necessary. General ecological protection measures for foraging and commuting bats are advised in section 5.4

Hazel dormouse

- 4.4.19 SxBRC returned no records of hazel dormouse *Muscardinus avellanarius* within the desk study search area
- 4.4.20 The scrub and boundary treeline, although having some potential to support dormice in terms of structure, have very limited connectivity to other areas of suitable habitat in the wider landscape. It is therefore considered unlikely that dormice are present within the site. Hazel dormouse is not considered to present a constraint to the development proposals and no further surveys are necessary.

Otter and water vole

- 4.4.21 SxBRC returned no records of otter *Lutra lutra* or water vole *Arvicola amphibius* from within the desk study search area.
- 4.4.22 There are no riparian habitats running through or adjacent to the site, nor in the wider landscape, making it unlikely that either species would be present. Neither otter nor water vole is considered to present a constraint to development proposals and further surveys are not required.

Plants, native

- 4.4.23 SxBRC returned 59 records of protected or notable plant species from within the desk-study search zone during a date range of 1986 to 2018.
- 4.4.24 No rare or protected species of flora were recorded within the survey area and, based on the habitats present it is considered unlikely that these are present. Plant species are not considered to present a constraint to the development proposals and no further surveys for this group are required.

Plants – invasive non-native species and injurious weeds

- 4.4.25 No invasive plant species (i.e. species listed on Schedule 9 of the Wildlife and Countryside Act) were located during this survey. No significant stands of injurious weed species were noted (ragwort *Senecio jacobea*, spear thistle *Cirsium vulgare*, creeping thistle *Cirsium arvense*, curled dock *Rumex crispus*, and broad-leaved dock *Rumex obtusifolius*). Invasive plant species and injurious weeds are not considered to present a constraint to the development proposals and no further action for this group is required.

Reptiles (terrestrial)

- 4.4.26 SxBRC returned 50 records of two terrestrial reptile species from within the desk-study search area, during a date range of 1993 to 2011. All four widespread species have been recorded in the vicinity; common lizard *Zootoca vivipara*, slow worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus*. These include records of slow worm and grass snake from within or adjacent to the site.
- 4.4.27 All of the survey area supports suitable habitats for reptiles, including coarse grassland with variable sward height and structure, tall ruderal, and scrub. Construction works would involve site clearance, creation of access tracks and materials storage compounds, vehicle movements and groundworks, which together could present a risk of killing or injury for reptiles if present within the survey area. Further surveys for reptiles are recommended at section 5.2.

Other protected, rare or notable species

- 4.4.28 SxBRC returned 30 records of hedgehog *Erinaceus europaeus* from within the desk-study search zone, during a date range of 1997 to 2018. The survey area contains habitats suitable for this species, including grassland, tall ruderal, and scrub. Hedgehog is listed as a species of principal importance under the NERC Act 2006 and is undergoing a significant population decline. Measures should be taken to continue accommodating this species on the site post-development (see section 5.4).

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5 Recommendations

5.1 Introduction

- 5.1.1 With regard to the objectives of this Preliminary Ecological Appraisal, recommendations are made below for further botanical and/or protected species survey where necessary. Preliminary recommendations are also made for the protection of important ecological features, and/or to avoid or mitigate ecological impacts, and to enhance the ecology of the site post-construction with the aim of achieving an overall net gain for biodiversity. It is intended that these preliminary recommendations should be considered during future changes to the design of development proposals so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

5.2 Botanical or Protected Species Surveys

- 5.2.1 The following species / groups (Table 5.1) will require additional surveys prior to refining development designs and formulating a suitable avoidance and mitigation strategy (if required).

Table 5.1: Recommendations for further ecological surveys

#	Recommendations for further ecological survey
R1	Presence / absence surveys for reptiles, undertaken between April and September within suitable habitats on site.

Reptiles

- 5.2.2 The survey area contains habitats suitable for reptiles including grassland, tall ruderal and scrub. There is hence a risk of killing or injury to reptiles and further surveys by an experienced herpetologist are required to establish their presence or likely absence within the proposed construction footprint. The survey should involve a minimum of seven visits to the site in suitable weather conditions during the active season (broadly April to September), following current guidelines (Froglife, 1999; Gent & Gibson, 2003). Methods include visual encounter surveys (i.e. targeted transects) and searches of artificial and natural refuges.

5.3 Precautionary Measures

- 5.3.1 The following species/groups (Table 5.2) require specific precautionary measures to be adhered to prior to and during construction to ensure that an offence under the relevant legislation is avoided. These measures may need to be added to or amended following completion of the protected species surveys described above.

Table 5.2: Recommended precautionary measures

#	Recommended precautionary measures
R2	Vegetation clearance works in the construction footprint will be undertaken in accordance with a Non-Licensed Method Statement to reduce the risk of killing/injury to great crested newt. The Method Statement will specify reasonable avoidance measures including timing restrictions (works to be carried out during the GCN active season, March to October), progressive reduction of vegetation height to displace any newts present into suitable surrounding areas of retained habitat, and will be carried out under the supervision of a suitably qualified ecologist. Once vegetation removal is complete, the site will be maintained in unsuitable condition to prevent recolonisation. Works under the Method Statement will not take place until the reptile survey and any necessary reptile mitigation has been completed.
R3	Removal of nesting bird habitats (including vegetation and buildings) will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February, but should be planned and implemented in accordance with the findings of the further ecological surveys recommended above, as other protected species may still be present outside of the bird breeding season. Any construction works undertaken within the bird breeding season where suitable bird breeding habitat exists will require a site check for nesting birds by a suitably qualified ecologist. This will take place no more than two days prior to works commencing. This is to ensure that no disturbance to active bird nests occurs. If a nest is found it must be cordoned off and works adjacent to the nest must be delayed until such time that the chicks have fledged from the nest. This will be supervised by a suitably qualified ecologist.

5.4 Ecological Protection Measures

- 5.4.1 The following protection measures (Table 5.3) will be carried out as part of the proposed scheme, alongside any specific measures that are recommended following the protected species surveys described above.

Table 5.3: Recommended ecological protection measures

#	Recommended ecological protection measures
R4	British Standard BS 5837:2012 and/or National Joint Utilities Group Guidelines (NJUG, 1995) will be followed at all times during construction when working in close proximity to trees or shrubs which are to be retained. According to NJUG Guidelines the root protection zone or precautionary area is 4x the circumference of the trunk (circumference is measured around the trunk at a height of 1.5m above ground level). The distance is measured from the centre of the trunk to the nearest part of any excavation or other work. If a separate tree survey is carried out for the proposed development, works will be undertaken in accordance with the recommendations therein.
R5	Standard site procedures, as recommended by NetRegs GPP5 (<i>Works and Maintenance in or Near Water</i> ; 2017), will be required to ensure that no contaminants or effluent are released into nearby aquatic environments.
R6	The use of external lighting will be avoided or reduced to the minimum required for its intended purpose, during both construction and operation. This will be of benefit to

#	Recommended ecological protection measures
	nocturnal species e.g. bats. Where external lighting is to be provided, it will be low-level, directional lighting with minimal spill and glare, and consideration will be given to reduced hours of operation and/or a movement responsive system of control. Use narrow-spectrum bulbs and light sources that emit minimal UV light, avoiding white and blue wavelengths of the spectrum. Use glass lantern covers instead of plastic to filter UV light. Lighting will not be directed towards the boundaries of the site, especially the southern boundary.
R7	To enable continued dispersal of hedgehogs (which require large territory sizes) and other small mammals across the site and within the local area following development, small access gaps to measure c.13x13cm are recommended to be provisioned at the base of all new fence boundaries. These will allow easy passage for small mammals to continue foraging in the area while still being small enough to contain pets.
R8	All excavations left overnight will either be covered over, or provided with a ramp to enable easy escape of badgers, hedgehogs, small mammals, amphibians and other fauna, and inspected each morning prior to recommencement. Open pipework greater than 150mm outside diameter will be blanked off at the end of each working day.
R9	Where fox dens or rabbit warrens are to be damaged or destroyed as part of the proposed works, this will be done in accordance with the Mammals Act 1996 by a registered pest control company.

5.5 Recommendations for Biodiversity Net Gain

- 5.5.1 The following ecological enhancements (Table 5.4) should be considered for the site to achieve an overall net gain for biodiversity in line with the requirements of local and national policy and guidance, but should be reviewed and specified further following the completion of recommended protected species surveys.

Table 5.4: Preliminary recommendations for biodiversity net gain

#	Preliminary recommendations for biodiversity net gain
R10	Buffers of less intensively managed vegetation (e.g. coarse grasses and wildflowers, including the use of tussock-forming grass species such as cock's foot <i>Dactylis glomerata</i> , Yorkshire fog <i>Holcus lanatus</i> , tufted hair-grass <i>Deschampsia cespitosa</i> and false oat-grass <i>Arrhenatherum elatius</i>) will be created within soft landscaped areas within the development, towards the site boundaries. This will help to maintain/enhance ecological connectivity through the site for reptiles, amphibians and small mammals, and provide forage for invertebrates.
R11	Hedgerow creation and/or restoration as part of the landscaping plan for the site will use a range of native shrub species of local provenance. Fruit, seed, nut and nectar-bearing species will be used preferentially when selecting species for landscape planting, so that food sources are available throughout the year (e.g. hazel <i>Corylus avellana</i> , hawthorn <i>Crataegus monogyna</i> , blackthorn <i>Prunus spinosa</i> , rowan <i>Sorbus aucuparia</i> and honeysuckle <i>Lonicera periclymenum</i>). If an evergreen hedge is required for landscape screening, suitable native species include holly <i>Ilex aquifolium</i> , holm oak <i>Quercus ilex</i> although both can be rather slow growing, ivy <i>Hedera helix</i> and privet <i>Ligustrum vulgare</i> . Beech <i>Fagus sylvatica</i> and hornbeam <i>Carpinus betulus</i> are also widely used as hedging plants and, although not evergreen, these will keep their brown leaves through winter if trimmed in late summer.
R12	The site's landscaping plans will utilise plant species which encourage bats. The table at Appendix IV lists species of plants that can provide benefit for bats either by providing a food

#	Preliminary recommendations for biodiversity net gain
	source for insects on which bats feed, or providing additional roosting opportunities (Gunnell <i>et al.</i> , 2012). The plant species are predominantly native to Britain, but not all species will be suitable in all situations. The aim is to encourage a diverse range of invertebrate food sources and increased bat roost potential.
R13	Habitat piles will be created within areas of retained rough grassland or marginal vegetation, at the edges of the site close to site boundaries. These will provide additional hibernation and shelter resources for amphibians, invertebrates, reptiles, and a range of other wildlife, and egg-laying substrate for grass snakes. Hibernacula can be created by partially burying logs and stones in sheltered areas away from flood risk, and covering over with earth or turf. Breeding habitats can be created by collecting grass clippings and other prunings arising from landscape management of the site, and composting them in a secluded corner of the site. Deadwood piles can be created using arisings from site clearance to provide shelter and breeding opportunities for invertebrates, particularly saproxylic species which are dependent on deadwood.
R14	The value of the site for birds will be enhanced by installing a range of artificial nest boxes. These will be placed on retained mature trees within the development or at the site boundaries, or incorporated within building facades. For instance: ▪ New buildings: nest boxes can be installed under the eaves for birds that utilise buildings for nesting, e.g. house martin <i>Delichon urbica</i>, house sparrow <i>Passer domesticus</i>, swallow <i>Hirundo rustica</i> and swift <i>Apus apus</i>. ▪ Trees: nest boxes with entrance holes suitable for tit species, woodpeckers and nuthatches, and open-fronted boxes suitable for spotted flycatcher <i>Muscicapa striata</i> or song thrush <i>Turdus philomelos</i>, and treecreeper <i>Certhia familiaris</i> boxes.
R15	The value of the site for bats will be enhanced by installing a range of artificial roost boxes. These will be placed on retained mature trees within the development or at the site boundaries, or incorporated within building facades. Boxes suitable for a range of species should be used, for instance: ▪ New buildings: integral bat tubes can be installed within buildings which face vegetated areas, particularly towards the north and west of the development. Bat tubes can be incorporated into the design of the building so that only the access holes are visible from the exterior of the building. The Schwegler 1FR or 2FR Bat Tube is designed to meet the characteristic requirements of the types of bats that inhabit buildings such as pipistrelles <i>Pipistrellus spp.</i> or serotines <i>Eptesicus serotinus</i>. It is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface. ▪ Pipistrelles: bat boxes suitable to install on mature trees either within or at the edges of the development include the Schwegler 1FF Flat Bat Box, or other manufacturer's equivalent. ▪ Noctules <i>Nyctalus spp.</i> and brown long eared bats <i>Plecotus auritus</i>: bat boxes suitable to install on mature trees either within or at the edges of the development include the Schwegler 2F General Purpose Bat Box or the 2FN Woodland Bat Box, or other manufacturer's equivalent. Bat boxes should ideally be located south-facing (between south-east and south-west) and above 4m from ground level. They should be installed facing vegetation features such as mature hedgerows or trees, but with a clear line of flight for bats exiting the roost, and away from sources of artificial light.

6 Summary and Conclusions

6.1 Introduction

- 6.1.1 A Preliminary Ecological Appraisal was undertaken for the site of a proposed residential development at Land South of Littlehampton Academy, Fitzalan Road, Littlehampton, West Sussex. The report was prepared to establish the site's suitability for development, inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the proposal site.

6.2 Results

- 6.2.1 There are no statutory or non-statutory designated sites within the 1km desk study search area. There are records of a range of protected or notable species in the locality, including amphibians, birds, invertebrates, terrestrial mammals, flowering plants and terrestrial reptiles, together with two priority and other habitats: Intertidal Mudflats and Open Water.
- 6.2.2 The survey area is located in Littlehampton in the Arun District of West Sussex, England. The site comprises c.2.4ha of previously developed land which is comprised predominantly of patchy semi improved grassland, with bramble scrub, tall ruderal vegetation, and young scattered trees. The survey area is bounded to the south, east and west by residential housing and Littlehampton Academy to the north. The wider landscape is characterised by the settlement of Littlehampton and associated urban/suburban greenspaces. Three ponds lie within 500m of the survey area.

6.3 Evaluation

- 6.3.1 Table 6.1 presents a summary of ecological constraints and opportunities identified within the survey area.

Table 6.1: Summary of ecological constraints and opportunities

Feature	Detail
Constraints:	
Designated sites	No wildlife sites, areas of Ancient Woodland or other Priority Habitats are likely to be affected by the proposed development as no designated sites or Ancient Woodland were identified within the desk study search area and the nearest small area of Priority Habitat is approximately 1km from the site.
Priority habitats	There are no priority habitats within or adjacent to the survey area which could be affected by the development proposals.
Other habitats	The proposed development would result in permanent losses of up to c.2.4ha of semi-improved and semi-improved grassland; scrub; tall ruderal vegetation;

Feature	Detail
	ephemeral/short perennial hard standing; and scattered trees depending on the extent and layout of development proposals. These areas are of relatively low ecological value and of importance at the site level only but provide habitats suitable for a number of protected species (e.g. nesting birds, amphibians and reptiles).
Great crested newt	Permanent loss of suitable terrestrial habitats (coarse grassland, tall ruderal, scrub, boundary trees). No impact on aquatic habitats.
Birds (nesting)	Possible permanent loss of nesting habitats (boundary trees, scrub).
Reptiles	Permanent losses of suitable reptile habitats (coarse grassland, tall ruderal, scrub, boundary trees).
Opportunities:	
Habitat enhancement	Habitat creation and enhancement opportunities include wildflower planting, hedgerow creation, habitat piles and bird/bat boxes.

6.4 Recommendations

- 6.4.1 Recommendations are made for further botanical or protected species surveys, together with preliminary recommendations for the protection of important ecological features to avoid or mitigate ecological impacts, and to deliver biodiversity net gain on site post-construction; these are summarised in Table 6.2. It is intended that these preliminary recommendations should be considered during future changes to the design of development proposals so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

Table 6.2: Summary of recommendations

#	Summary of recommendations
Botanical / protected species surveys	
R1	Presence / absence surveys for reptiles, undertaken between April and September within suitable habitats on site.
Precautionary measures	
R2	Vegetation clearance works will be undertaken during the GCN active season (March to October) and in accordance with a Non-Licensed Method Statement to reduce the risk of killing/injury to GCN. Works under the Method Statement will not take place until the reptile survey and any necessary reptile mitigation has been completed.
R3	Removal of nesting bird habitats (including vegetation and buildings) will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February, but should be planned and implemented in accordance with the findings of the further ecological surveys recommended above.
Ecological protection measures	
R4	Standard site procedures to prevent impacts on trees will be adhered to during construction.
R5	Standard site procedures to prevent impacts on nearby aquatic environments will be adhered to during construction.

#	Summary of recommendations
R6	The use of external lighting will be avoided or minimised to prevent impacts to nocturnal species such as bats. Lighting will not be directed towards the boundaries of the site, especially the southern boundary.
R7	Small access gaps will be provisioned at the base of new fence boundaries to enable continued dispersal of small mammals across the site.
R8	At the end of each working day excavations will be covered over and open pipework capped to prevent entrapment of mammals, amphibians and other fauna.
R9	Where fox dens or rabbit warrens are to be damaged or destroyed as part of the proposed works, this will be done by a registered pest control company.
Biodiversity net gain	
R10	Buffers of less intensively managed vegetation (e.g. coarse grasses and wildflowers) will be created within soft landscaped areas to maintain/enhance ecological connectivity.
R11	Hedgerow creation and/or restoration will use a range of native fruit, seed, nut and nectar-bearing shrub species of local provenance.
R12	The site's landscaping plans will utilise plant species which encourage bats by providing additional food sources or roosting opportunities.
R13	Habitat piles for amphibians, invertebrates and reptiles will be created within areas of retained rough grassland, scrub or woodland.
R14	The value of the site for birds will be enhanced by installing a range of artificial nest boxes onto new buildings and retained trees.
R15	The value of the site for bats will be enhanced by installing a range of artificial roost boxes onto new buildings and retained trees.

6.5 Conclusions

- 6.5.1 The majority of land proposed for development is of low ecological value. Significant constraints to development were identified including the potential presence of nesting birds and reptiles. Further ecological surveys and impact assessment are required prior to submitting a planning application, to determine whether and how the site is being used by protected species and to formulate a suitable mitigation strategy. Precautionary and ecological protection measures are recommended on an interim basis to enable offences under the relevant legislation to be avoided, along with recommendations for biodiversity net gain.

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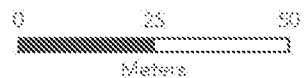
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Appendix I: Phase 1 Habitats Map

Please see insert.

Land south of Littlehampton Academy, Fitzalan Road, Littlehampton, West Sussex

-  Survey area
-  Hard standing
-  Dense scrub
-  Semi improved grassland
-  Tall ruderal vegetation
-  Ephemeral/short perennial
-  Scattered tree



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Scale: 1:1,400 Created by: ADJ
Date: June 2020 Reviewed by: NP
Drawing number:
UE00183ECC-Phase1_202013

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CONSULTING Web: www.ueec.co.uk

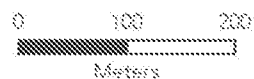


Appendix II: Pond Map

Please see insert.

Land south of Littlehampton Academy, Fitzalan Road, Littlehampton, West Sussex

-  Survey area
-  100m buffer
-  250m buffer
-  500m buffer
-  PondNos



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Appendix III: Plant Species which encourage Bats

Please see following pages which are drawn from Gunnell *et al.* (2012).

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Plant Species	Common name	Native	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain Gardens	Hedges/trees	Beds/borders
<i>Acer campestre</i>	Field maple	N	T/S	C	Any	Sun / shade				Y	
<i>Acer platanoides</i>	Norway maple		T	S	Well drained / alkaline	Sun / shade				Y	
<i>Acer saccharum</i>	Sugar maple		T	S	Any	Sun / shade				Y	
<i>Achillea millefolium</i>	Yarrow	N	HP	C,F	Well drained	Sun	Y				
<i>Aluga reptans</i>	Bugle	N	HP	C,F	Any	Sun / shade	Y				
<i>Anthyllus vulneraria</i>	Kidney vetch	N	HP	F	Well drained	Sun	Y				
<i>Aubrieta deltoidea</i>	Aubrieta		H	F	Well drained	Sun / shade		Y			
<i>Betula pendula</i>	Silver birch	N	T	C	Sandy / Acid	Sun				Y	
<i>Cardamine pratensis</i>	Cuckoo-flower	N	HP	F	Moist	Sun / shade					Y
<i>Carpinus betulus</i>	Hornbeam	N	T	C	Clay	Sun				Y	
<i>Centaurea nigra</i>	Common knapweed	N	HP	C,F	Dry, not acid	Sun	Y				Y
<i>Centranthus ruber</i>	Red valerian		HP	F	Well drained / alkaline	Sun	Y				Y
<i>Clematis vitalba</i>	Old man's beard	N	C	F	Well drained / alkaline	Sun				Y	
<i>Corylus avellana</i>	Hazel	N	S	C	Any dry	Sun / shade		Y		Y	
<i>Crataegus monogyna</i>	Hawthorn	N	S	S,C	Any	Sun / shade				Y	
<i>Daucus carota</i>	Wild carrot	N	Bi	S,C,F	Any	Sun	Y				Y
<i>Dianthus spp.</i>	Pinks	N	A,Bi	F	Well drained	Sun	Y	Y			Y
<i>Digitalis purpurea</i>	Foxglove	N	Bi	C	Well drained	Shade / partial shade				Y	Y
<i>Erica cinerea</i>	Bell heather	N	S	F	Sandy	Full sun					Y
<i>Erysimum cheiri</i>	Wallflower		Bi,F	F	Well drained	Sun		Y			
<i>Eupatorium cannabinum</i>	Hemp agrimony	N	H	F	Moist	Sun / shade					Y
<i>Fagus sylvatica</i>	Beech	N	T	C,R	Well drained / alkaline	Sun / shade				Y	
<i>Foeniculum vulgare</i>	Fennel		H	F	Well drained	Sun					Y
<i>Fraxinus excelsior</i>	Common ash	N	T	C,R	Any	Sun / shade				Y	
<i>Hebe spp.</i>	Hebe species		S	F	Well drained	Sun / shade				Y	Y
<i>Hedera helix</i>	Ivy	N	C	F,C	Any	Sun / shade		Y		Y	Y
<i>Hesperis matronalis</i>	Sweet rocket		H	F	Well drained / dry	Sun / shade					Y
<i>Hyacinthoides non-scripta</i>	Bluebell	N	B	F	Loam	Shade / partial shade		Y		Y	Y
<i>Ilex aquifolium</i>	Holly	N	T	C	Any	Sun / shade				Y	
<i>Jasminum officinale</i>	Common jasmine		C	F	Well drained	Sun		Y			Y
<i>Lavandula spp.</i>	Lavender species		S	F	Well drained / sandy	Sun		Y			Y
<i>Linaria vulgaris</i>	Toadflax	N	HP	C	Well drained / alkaline	Sun	Y				Y
<i>Lonicera periclymenum</i>	Honeysuckle	N	C	F	Well drained	Sun		Y		Y	
<i>Lotus corniculatus</i>	Bird's foot trefoil	N	HP	F	Well drained / dry	Sun	Y				Y
<i>Lunaria annua</i>	Honesty		Bi	F	Any	Sun / partial shade	Y				
<i>Malus spp.</i>	Apple		T	C	Any	Sun				Y	
<i>Matthiola longipetala</i>	Night-scented stock		A	F	Well drained/ moist	Sun			Y		
<i>Mysotis spp.</i>	forget-me-not	N	A	F	Any	Sun	Y	Y			
<i>Nicotiana glauca</i>	Ornamental tobacco		A	F	Well drained/ moist	Sun / partial shade			Y		
<i>Oenothera spp.</i>	Evening primrose species		Ei	F	Well drained/ dry	Sun	Y				
<i>Origanum vulgare</i>	Marjoram	N	HP	F	Well drained/ dry	Sun	Y	Y			
<i>Populus alba</i>	White poplar	N	T	C	Clay loam	Sun				Y	
<i>Primula vera</i>	Coxslop	N	HP	F	Well drained/moist	Sun / partial shade	Y				
<i>Primula vulgaris</i>	Primrose	N	HP	F	Moist	Partial shade	Y	Y		Y	
<i>Prunus avium</i>	Wild cherry	N	T	C	Any	Sun				Y	



Plant Species	Common name	Native	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain Gardens	Hedges/trees	Beds/borders
<i>Prunus domestica</i>	Plum		T	C	Well drained/ moist	Sun				Y	
<i>Prunus spinosa</i>	Blackthorn	N	S	C	Any	Sun / partial shade				Y	
<i>Quercus petraea</i>	Scots oak	N	T	C, R	Sandy loam	Sun / shade				Y	
<i>Quercus robur</i>	Common oak	N	T	C, R	Clay loam	Sun / shade				Y	
<i>Rosa canina</i>	Dog rose	N	S	C	Any	Sun			Y	Y	
<i>Salix</i> spp.	Willow species	N	S	S, C	Moist	Sun / shade			Y	Y	
<i>Sambucus nigra</i>	Elder	N	T	C	Clay loam	Sun				Y	
<i>Saponaria officinalis</i>	Soapwort	N	HP	F	Any	Sun					
<i>Saxifraga oppositifolia</i>	Saxifrage	N	HP	C	Well drained	Sun	Y	Y			
<i>Scabiosa columbiana</i>	Small scabious	N	HP	F	Well drained/ alkaline	Sun	Y				
<i>Sedum spectabile</i>	Ice plant		HP	F	Well drained/ dry	Sun	Y				
<i>Siene dioica</i>	Red campion	N	HP	F	Any	Shade / partial shade		Y	Y	Y	
<i>Sorbus aucuparia</i>	Rowan	N	T	C	Well drained	Sun				Y	
<i>Stachys lanata</i>	Lamb's ears		HP	F	Well drained/dry	Sun	Y				
<i>Symotrichum</i> spp.	Michaelmas daisies		HP	F	Any	Sun					
<i>Tegetes patula</i>	French marigold		A	F	Well drained/moist	Sun					
<i>Thymus serpyllum</i>	Creeping thyme	N	HP/S	F	Well drained/dry	Sun	Y	Y			
<i>Tilia x europaea</i>	Common lime		Type	C	Any	Sun / shade				Y	
<i>Trifolium</i> spp.	Clover species	N	HP	F	Any	Sun	Y				
<i>Valeriana</i> spp.	Valerian species	N	HP	F	Moist	Sun / partial shade			Y		
<i>Verbascum</i> spp.	Mulleins	N	Bi, HP	C	Well drained	Sun	Y				
<i>Verbena bonariensis</i>	Verbena		HP	F	Well drained/moist	Sun					
<i>Viburnum lantana</i>	Wayfaring tree	N	S	C	Any	Sun / shade				Y	
<i>Viburnum opulus</i>	Guelder rose	N	S	C	Moist	Sun / shade			Y	Y	
<i>Viola tricolor</i>	Pansy	N	A	F	Well drained/moist		Y	Y			

The table above is derived from the BCT publication Landscape and Urban Design for Bats and Biodiversity (Gunnell et al., 2012) and lists suggested plant species that can provide benefit for bats either by providing a food source for insects or roost potential. The plants listed are predominately native to Britain. The small group of non-native plants is included for their documented value for wildlife. This list has been checked against Natural England's list of invasive non-native plants.

HP: Herbaceous perennial

T: Tree

A: Annual

Benefit:

Bi: Biennial

S: Shrub

B: Bulb

C: Moth caterpillar food plant

F: Flowers attract adult moths

BiP: Biennial perennial

H: Herb

C: Creeper/climber

S: Sap sucking insects (e.g. whiteflies)

R: Good roost potential



Appendix IV: Legislation and Planning Context

Legislation

General

The main legislative instruments for ecological protection in England and Wales are the Wildlife and Countryside Act 1981 (WCA; as amended), Countryside and Rights of Way Act 2000 (CROW; as amended), Natural Environment and Rural Communities Act 2006 (NERC) and the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations; as amended). The Environment Bill (reintroduced to parliament in 2020) is expected to make significant changes to the legislative provisions when enacted.

WCA 1981 consolidated and amended pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Habitats Regulations, offering protection to a wider range of species than the latter. The Act also provided for the designation and protection of nationally important conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSI). Schedules of the act list protected species of flora and fauna, as well as invasive species, and detail the possible offences that apply to these species.

The CROW Act 2000 amended and strengthened existing wildlife legislation detailed in the WCA. It placed a duty on government departments & the National Assembly for Wales to have regard for biodiversity, provided increased powers for the protection and maintenance of SSSI, and created a right of access to parts of the countryside. The Act contained lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The NERC Act 2006 consolidated and replaced aspects of earlier legislation. Section 40 of the Act places a duty upon all local authorities and public bodies in England and Wales to have regard to the purpose of conserving biodiversity in exercising all of their functions, including by restoring or enhancing habitats and species populations. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity (otherwise known as priority habitats/species as listed in the now superseded UK Biodiversity Action Plan). These lists supersede Section 74 of the CROW Act 2000. These species and habitats are a material consideration in the planning process.

The Habitats Regulations 2017 consolidate and update the Conservation of Habitats and Species Regulations 2010 and all its various amendments. The Regulations are the principal means by which Council Directive 92/43/EEC (The Habitats Directive) is transposed into English and Welsh law, and place a duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states.

The Habitats Regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of Council Directive 2009/147/EC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known



as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Habitats Regulations also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively (European Protected Species (EPS)). Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade in these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations. Under the Habitats Regulations disturbance includes any activity which is likely to: impair the ability of a EPS to survive, breed, reproduce, or rear/nurture its young; impair the ability of a EPS to migrate or hibernate; or significantly affect the local distribution or abundance of the species.

When enacted, the Environment Bill is expected, among other things, to: establish an Office for Environmental Protection; require all new development requiring planning permission to achieve a net gain for biodiversity (expected to be at least 10%); amend the NERC Act duty to conserve biodiversity by explicitly adding a duty to enhance; and require local authorities to produce local nature recovery strategies.

Badgers (Meles meles)

Badgers are listed under Schedule 6 of the Wildlife and Countryside Act which grants them partial protection. This protection is extended by the Protection of Badgers Act 1992 (Badger Act) which makes it an offence to take, injure or kill a badger, interfere with a sett, sell or possess a live badger, or mark or ring a badger without a licence. Under the Act disturbance is illegal without a licence. Natural England has published guidelines to be adopted when determining whether an activity is 'disturbing' i.e. a licence is required when, for example, using heavy machinery (generally tracked vehicles) within 30m of any entrance to an active sett. Licences are not normally issued during the badger breeding season (December – June inclusive).

Bats (Chiroptera)

Bats and their roosts are fully protected by protected by the WCA and the Habitats Regulations, and seven species of bats are species of principal importance. The legislation makes it an offence, *inter alia*, to:

- ✧ Intentionally kill, injure or take a bat.
- ✧ Possess or control a live or dead bat, any part of a bat, or anything derived from a bat.
- ✧ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a bat uses for shelter or protection. This is taken to mean all bat roosts whether bats are present or not.
- ✧ Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- ✧ Make a false statement in order to obtain a licence for bat work.

Birds

Birds are protected by the Wildlife and Countryside Act, 1981 (as amended). This legislation makes it an offence to intentionally kill, injure or take away any wild bird. It is also an offence to take, damage or destroy the nest of any wild bird while it is in use or being built or to take or destroy the egg of any wild bird. In addition, certain species are listed on Schedule 1 of the WCA (such as kingfisher *Alcedo atthis*). This makes it an additional offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly

disturb their dependent young. Such species are considered to be in greater need of legal protection or of high nature conservation priority.

Birds of Conservation Concern ("BoCC4) are included on Red and Amber lists (Eaton *et al.*, 2015). Birds on the Red list are those of highest conservation priority due significant and sustained population decreases and/or range contractions (e.g. house sparrow *Passer domesticus* and starling *Sturnus vulgaris*). Birds on the Amber list are the next most critical group and include species whose population/range have shown moderate declines, or which have recovered to some extent from historical decline, such as dunnoek *Prunella modularis*.

Dormouse (Muscardinus avellanarius)

Dormouse is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*:

- ✧ Intentionally kill, injure or take a dormouse.
- ✧ Possess or control a live or dead dormouse, any part of, or anything derived from a dormouse.
- ✧ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a dormouse uses for shelter or protection.
- ✧ Intentionally or recklessly disturb a dormouse while it is occupying a structure or place that it uses for shelter or protection.

Great crested newt (Triturus cristatus; GCN) (and natterjack toad Bufo calamita)

GCN is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*, to:

- ✧ Intentionally kill, injure or take a GCN (including its eggs).
- ✧ Possess or control a live or dead GCN, any part of, or anything derived from a GCN.
- ✧ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a GCN uses for shelter or protection.
- ✧ Intentionally or recklessly disturb a GCN while it is occupying a structure or place that it uses for shelter or protection.

Otter (Lutra lutra)

Otter is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*, to:

- ✧ Intentionally kill, injure or take an otter.
- ✧ Possess or control a live or dead otter, any part of, or anything derived from an otter.
- ✧ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that an otter uses for shelter or protection.
- ✧ Intentionally or recklessly disturb an otter while it is occupying a structure or place that it uses for shelter or protection.

Reptiles

The four common species (slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, adder *Vipera berus* and grass snake *Natrix natrix*) are partially protected under the WCA. They are protected, *inter alia*, against intentional killing and injuring. The handling and translocation of these reptiles does not require a licence.

Smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* are fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*, to:

- ✧ Intentionally kill, injure or take a smooth snake or sand lizard.
- ✧ Possess or control a live or dead smooth snake or sand lizard, any part of, or anything derived from a smooth snake or sand lizard.
- ✧ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a smooth snake or sand lizard uses for shelter or protection.
- ✧ Intentionally or recklessly disturb a smooth snake or sand lizard while it is occupying a structure or place that it uses for shelter or protection.

Water vole (Arvicola amphibious)

Water vole is fully protected by the WCA. The legislation makes it an offence, *inter alia*, to:

- ✧ Intentionally kill, injure or take a water vole.
- ✧ Possess or control a live or dead water vole, any part of, or anything derived from a water vole.
- ✧ Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a water vole uses for shelter or protection.
- ✧ Intentionally or recklessly disturb a water vole while it is occupying a structure or place that it uses for shelter or protection.

Weeds Act 1959 / Ragwort Control Act 2003

This legislation provides for orders to be made for control where notifiable weed species such as ragwort are said to be a problem. The act does not make it illegal to have ragwort (or other weed species) on your land, make it illegal to allow ragwort to spread, or force landowners automatically to control it. However, if DEFRA is satisfied that there are injurious weeds to which this Act applies growing upon any land it may serve upon the occupier of the land a notice in writing requiring them, within the time specified in the notice, to take such action as may be necessary to prevent the weeds from spreading.

Planning context

National Planning Policy Framework (Section 15: Conserving and enhancing the natural environment)

The National Planning Policy Framework (NPPF), published in February 2019, outlines the Government's commitment to the conservation of wildlife and natural features. It is concerned with:

- ✧ Protecting and enhancing valued landscapes, sites of biodiversity or geological conservation value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- ✧ Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- ✧ Maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- ✧ Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current & future pressures;

- ✧ Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- ✧ Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

The NPPF requires that local plans should “distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value...; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries”.

To protect and enhance biodiversity and geodiversity, the NPPF states that planning policies should:

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

When determining planning applications, local planning authorities should aim to protect and enhance biodiversity by applying the following principles:

- ✧ if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- ✧ development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- ✧ development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- ✧ development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

The following wildlife sites should be given the same protection as habitats sites:

- ✧ potential Special Protection Areas and possible Special Areas of Conservation;
- ✧ listed or proposed Ramsar sites; and
- ✧ sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site. The policies within the NPPF (and additional guidance contained within Circular 06/2005) are a material planning consideration.

UK/Local Biodiversity Action Plan Designations and Birds of Conservation Concern and Red Data Book Listings

Note that BAP designations and status as RSPB Birds of Conservation Concern or Red Data Book species does not offer any further legal protection, but planning authorities are required to prevent these species from being adversely affected by development in accordance with National Planning Policy and the CROW and NERC Acts. The United Kingdom Biodiversity Action Plan (UKBAP), first published in 1994 and updated in 2007, was a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UKBAP contained a list of priority habitats and species of conservation concern in the UK, and outlined biodiversity initiatives designed to enhance their conservation status.

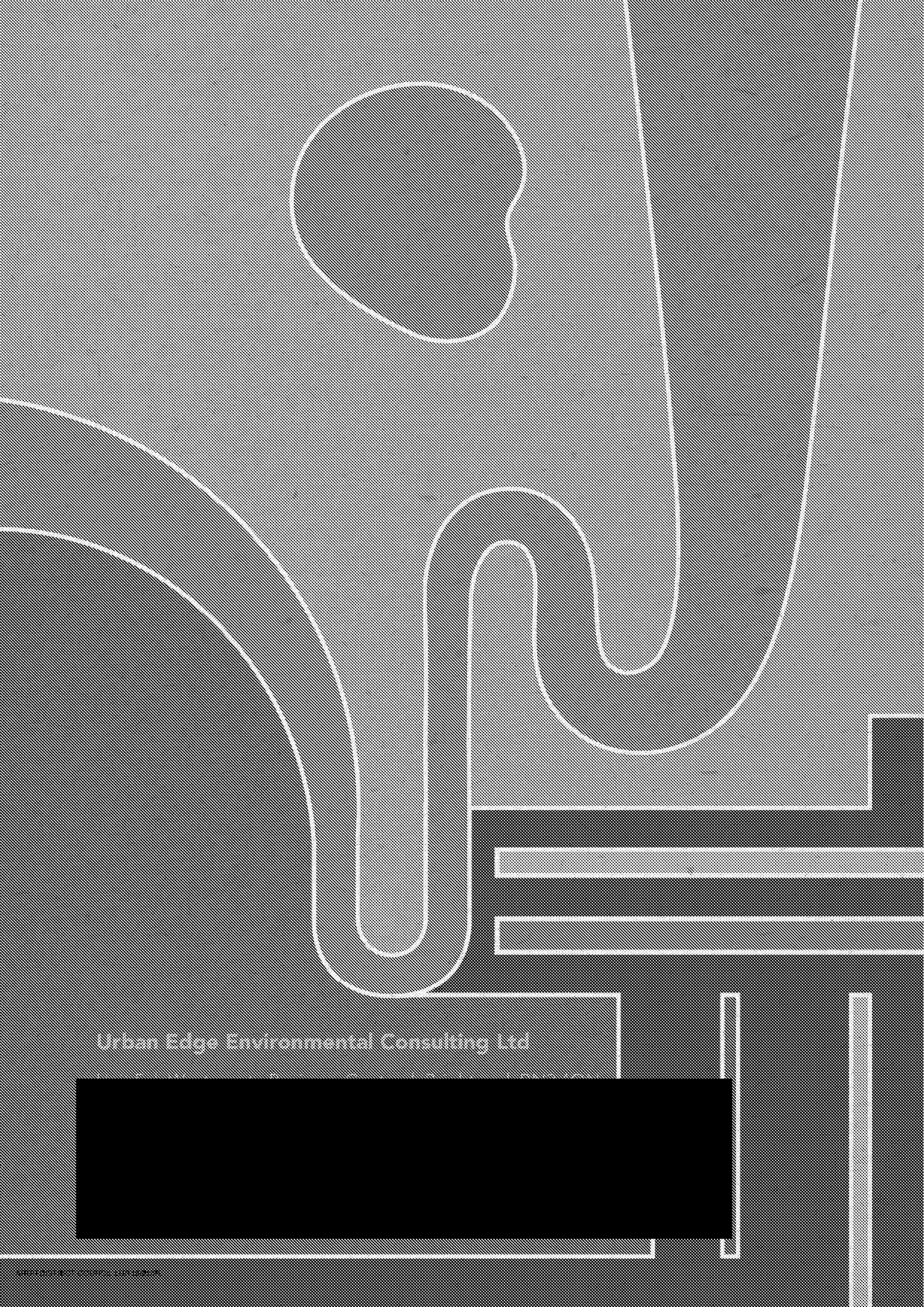
However, as a result of devolution, and new country-level and international drivers and requirements, much of the work previously carried out by the UK BAP is now focussed at a country-level rather than a UK-level, and the UK BAP was succeeded by the 'UK Post-2010 Biodiversity Framework' in July 2012. The UK lists of priority habitats and species nonetheless remain an important reference source and were used to draw up statutory lists of priority habitats and species in England, Northern Ireland, Scotland and Wales. The priority habitats and species correlate with those listed on Section 41 and 42 of the NERC Act.

The UKBAP required that conservation of biodiversity be addressed at a County level through the production of Local BAPs. These are targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs. Where they exist, Local BAP targets with regard to species and habitats are a material consideration in the planning process.

Appendix V: Legal and Technical Limitations

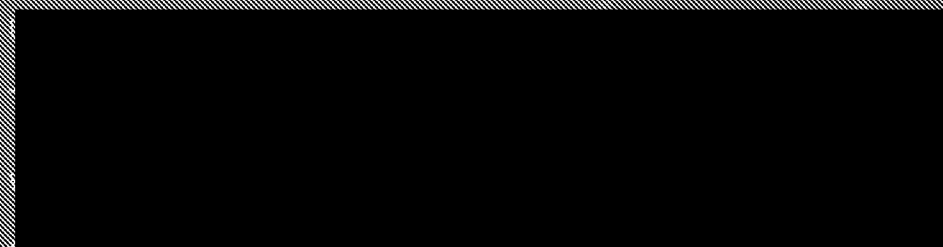
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- Where this report presents or relies upon the findings of ecological field surveys (including habitat, botanical or protected/notable species surveys), its conclusions should not be relied upon for longer than a maximum period of two years from the date of the original field surveys. Ecological change (e.g. colonisation of a site by a protected species) can occur rapidly and this limitation is not intended to imply that a likely absence of, for instance, a protected species will persist for any period of time;
- This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by UEEC Ltd for the accuracy of such information;
- Every effort has been made to accurately represent the location of mapped features, however, the precise locations of features should not be relied upon;
- Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out, weather conditions and other variables will influence the results of an ecological survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). Every effort has been made to accurately note indicators of presence of protected, rare and notable species within and adjacent to the site but the possibility nonetheless exists for other species to be present which were not recorded or otherwise indicated by the survey;
- Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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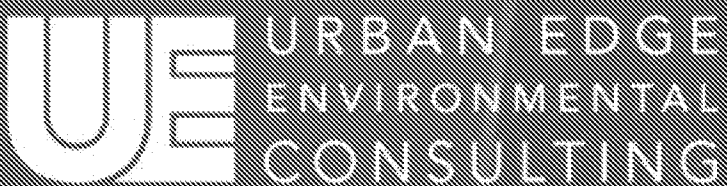


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