PRELIMINARY ECOLOGICAL APPRAISAL

RELATING TO LAND AT FIR LODGE, STAKENBRIDGE LANE, CHURCHILL, KIDDERMINSTER

APPLICATION FOR PLANNING PERMISSION

For

JULIAN WILLIAMS OF BB PARTNERSHIP LTD

DECEMBER 2017

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PEA SURVEY
ON LAND AT FIR LODGE,
STAKENBRIDGE LANE,
CHURCHILL,
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Drawings

Appendices

1.0 INTRODUCTION

Background and Proposals

1.1 Pleydell Smithyman Limited (PSL) was instructed by Julian Williams of BB Partnership Ltd on behalf of Mark Neale to undertake a Preliminary Ecological Appraisal of land at/on/adjacent to Fir Lodge (hereafter referred to as the site).

1.2 The surveys were required to inform the preparation and submission of a planning application for the demolition and replacement of the existing buildings to better respond to the location. The survey was also required to help ensure compliance with National and European legislation and inform mitigation and enhancement proposals (where necessary and appropriate).

Site Location

1.3 The site is located off a track which is situated on Stakenbridge Lane in Churchill. The site is located approximately 7km to the north-east of the centre of Kidderminster, Worcestershire. The site is centred at Grid Reference: SO889799.

Site Description

1.4 The site comprises a large detached residential property with a garage, as well as a detached pool house building and an outbuilding used as a garden store. The site also includes a large number of mature and semi-mature trees and areas of hard standing, grassed areas and a pond. The surrounding areas comprise improved grassland and woodland with the town of Hagley further to the east.

Aims and Objectives of the Survey

1.5 The key objective of the preliminary ecological appraisal was to classify the habitats present on the site according to the Phase 1 habitat survey methodology and establish the potential of the site to support protected and notable species, of which account must be taken prior to and during the planned works in accordance with the wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 and the Protection of Badgers Act 1992.

1.6 Where necessary, further species specific surveys and mitigation measures are recommended to safeguard any significant existing ecological interest within the site and

where appropriate opportunities for ecological enhancement are proposed with reference to national and local Biodiversity Action Plans (BAPS).

1.7 The 'UK' Post-2010 Biodiversity Framework' (JNCC & DEFRA, 2012), published in July 2012, also sets out a framework of priorities for UK-level work for the Convention on Biological Diversity, to which the UK is a signatory. Covering the period 2011-2020, this framework replaces the original UK Biodiversity Action Plan (UK BAP, 2004) system and now the work is focussed on the separate countries (England, Scotland, Northern Ireland and Wales). The overall aim remains to protected a number of rare species and habitats, and reverse the declines of more widespread but declining species and habitats, and so currently many of the species and habitats in the UK BAP still form the basis of the biodiversity work carried out in the developed countries.

1.8 Furthermore, Local Biodiversity Action Plans (LBAPs) are still in place under this framework to manage and conserve species and habitats of priority at a local level. Where necessary, further species specific surveys and mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site and where appropriate, opportunities for ecological enhancement are proposed with reference to national and local Biodiversity Action Plans (BAPs).

1.9 Furthermore, the survey assessment recommendations are guided by the National Planning Policy Framework (NPPF), where the policies in paragraphs 18 to 219, taken as a whole, constitute the government's view of what sustainable development in England means in practice for the planning system. The following paragraphs of the NPPPF are of particular relevance:

- With regard to paragraph 117, in order to minimise impacts on biodiversity and geodiversity, planning policies should:
  - plan for biodiversity at a landscape-scale across local authority boundaries;
  - promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations , linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan;
  - where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these areas.

1.10 With reference to paragraph 118, when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- if significant harm resulting from a development cannot be avoided (through locating on a alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, the planning permission should be refused;
- proposed development on land within or outside a Site of Special Scientific Interest (SSSI) likely to have an adverse effect on a SSSI (either individually or in combination with other developments) should not normally be permitted;
- development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
- opportunities to incorporate biodiversity in and around developments should be encouraged;
- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland , unless the need for, and benefits of, the development in that location clearly outweigh the loss;
- and the following wildlife sites should be given the same protection as European sites; potential Special Protection Areas (SPA), possible Special Areas of Conservation (SAC); listed or proposed Ramsar sites and sites identified, or required, as compensatory measures for adverse effects on European Sites, potential SPA, possible SAC, and listed or proposed Ramsar sites.

1.11 The site visit also focussed on assessing the potential of the site to support populations of priority species, whose protection and recovery is promoted in paragraph 117, especially those given protection under British or European wildlife legislation as stated above.

1.12 The survey assessment recommendations are also guided by the relevant legislation:

- The Natural Environmental and Rural Communities (NERC) Act, 2006 states: “Every public authority must, in exercising its functions, have regard, so far is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”.

1.13 The preliminary ecological appraisal also aims to identify key constraints of the project and make recommendations for design options, where appropriate, to avoid significant effects on important ecological features/resources at an early stage. The appraisal also aims to identify any mitigation measures that may be required and to identify any enhancement opportunities that are possible.

2.0 SURVEY METHODOLOGY

2.1 The preliminary ecological appraisal was undertaken on 6th December 2017 by Steven Pagett of Pleydell Smithyman Limited. The weather on the day of the assessment was generally cloudy, with a moderate breeze (Beaufort Scale 4) and 80% cloud cover.

2.2 The preliminary ecological appraisal was completed following the guidance within the document produced by CIEEM titled 'Guidelines for Preliminary Ecological Appraisals' produced in April 2013. The survey methodology used can split into three main areas: a desk study, Phase 1 habitat survey and a faunal survey. These are discussed in more detail below.

Desk Study

2.3 In order to obtain information on sites of nature conservation interest in the area, the Multi-Agency Geographic Information for the Countryside (MAGIC) website was searched for ecological statutory and non-statutory designated sites and ancient woodland within a 2km radius around the central point of the site. European Protected Species (EPS) Licences were also searched for within a 2km radius from the central point of the site.

2.4 Where relevant, the National Biodiversity Network (NBN) Database was also searched for relevant protected species records within a 5km radius of the site.

2.5 In addition, reference was made to Ordnance Survey maps and aerial photography, which were used to determine the presence of open water and ponds in the area and to provide information on land use and habitat connectivity throughout the area.

Habitat Survey

2.6 The Phase 1 habitat survey of the site was carried out in order to assess the current ecological value of the land contained within the boundaries of the site. This involved identifying the main habitats and associated plant species present at the time of the survey.

2.7 The site was surveyed using the Phase 1 Habitat Survey Methodology outlined in the 'The Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit' (JNCC, 2010). This involves identifying the species present within each habitat and classifying the habitat types accordingly, following the Phase 1 habitat survey methodology. This technique provides an inventory of the basic habitat types present and enables areas of

greater botanical interest which may require further, more detailed surveys to be identified.

2.8 Habitats are mapped and 'target notes' are made, where relevant, to describe characteristic habitats, features of ecological interest, or any other features which cannot be otherwise classified or, may present a potential constraint to the proposed development.

2.9 Whilst not a full protected species or botanical survey, the extended Phase 1 method enables a suitably experienced ecologist to undertake a baseline ecological appraisal of the site that:

- Provides a preliminary evaluation of the nature conservation significance of the site and survey area assess the potential for impacts on habitats/species likely to represent a material consideration in planning terms; and,
- Determines the scope of further specialised surveys that may be required.

2.10 Higher plant species nomenclature follows that provided in Stace (2010) for vascular plants and Atherton, Bosanquet and Lawley (2010) for bryophytes.

Faunal Surveys

2.11 General faunal activity, such as birds or mammals observed or noted by call or, evidence of a species' activity such as prints, droppings, burrows or similar, was also recorded within specific attention paid to the potential presence of any protected, rare and notable species, including species listed on local or national BAP lists. This involved assessing the suitability of the habitats present on the site for these species as well as the connectivity of the site to other areas of potentially suitable habitat nearby. In addition, specific survey work was undertaken for bats and is outlined below.

<u>Bats</u>

2.12 All trees within the site were assessed from the ground for potential features that may be used by bats for roosting (e.g. splits, cracks, rot holes or lifted bark) along with any direct evidence of bats (e.g. droppings and urine staining). The potential for the trees to support bat roosts was ranked in accordance with the criteria set out in the Bat Conservation Trust's 'Bat Surveys for Professional Ecologist: Good Survey Guidelines' (Collins,2016):

- Negligible Suitability – Negligible habitat features on site likely to be used by roosting bats.
- Low Suitability – A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites 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 (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRF's (Potential Roosting Features) but with none seen from the ground or features seen with only very limited roosting potential.
- Moderate Suitability – 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 support a roost of high conservation status (with respect to roost type only – the assessments are made irrespective of species conservation status, which is established after presence is confirmed).
- High Suitability – A structure or tree with one or more potential roost sites that are obviously suitable for use by a large number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

2.13 All buildings within the site were also inspected from the ground for potential features that may be used by bats for roosting along with any direct evidence of bats (e.g. droppings and urine staining). An internal inspection was also conducted wherever access allowed, to inspect for signs of bats from the inside of the building. The potential for the buildings to support bat roosts was ranked in accordance with the criteria set out in the guidelines detailed above.

Survey Constraints and Limitations

2.14 Species that may be present on the site would not necessarily be detectable during the survey assessment, since different species are apparent during different seasons and detailed species-specific survey work is often required to identify the presence or likely absence of particular species or species groups. However, the extended Phase1 habitat survey is considered to provide a robust assessment of the likelihood of various protected

species to be present and to subsequently identify the need for further, more detailed, surveys to be undertaken at the correct time of year.

2.15 Extended Phase 1 habitat surveys can be undertaken at the correct time of the year; however, the optimum time of year for these surveys to be undertaken is between April and mid-July (inclusive) to enable the majority of botanical species to be detected. The survey was undertaken outside this optimum period and therefore it is possible that some annually occurring species may be been missed during the survey.

3.0 RESULTS

Desk Study

Ecological Statutory Designations

3.1 There were no statutory designations returned from the MAGIC search within 2km of the site. There is however, a Site of Special Scientific Interest (SSSI) Impact Risk Zone within 2km of the site. These are put in place to highlight the importance of nearby SSSIs. The description associated with this SSSI Impact Risk Zone, does not highlight the need to contact the local planning authority for residential developments. It is put in place to protect Hurcott and Podmore Pools SSSI which is located approximately 3km to the south-west of the site and is designated for botanical reasons.

Non-Statutory Designations

3.2 No ecological non-statutory designations were returned from the MAGIC search within 2km of the site.

Ancient Woodland

3.3 No areas of ancient woodland were returned from the MAGIC search within 2km of the site.

Phase 1 Habitat survey

3.4 The following habitats/ecological features were identified within the site and classified according to the system prescribed in the JNCC 'Handbook for Phase 1 Habitat Survey'(2010):

- Unimproved neutral grassland;
- Amenity grassland;
- Mixed plantation woodland;
- Dense scrub;
- Hedgerow;
- Scattered trees;
- Standing water (ponds);
- Hard standing;
- Building; and
- Fenceline

3.5 For photographs taken during the survey, please see Appendix 1.

Unimproved neutral grassland

3.6 There is one area of unimproved neutral grassland located near the northern boundary of the site. This grassland is enclosed with a wooden fence and surrounding defunct hedgerow. This area of grassland has been unmanaged regarding applications of fertiliser or herbicide and has not recently been mown or grazed. The species observed within this grassland include tufted hairgrass, (*Deschampsia cespitosa*), red clover, (*Trifolium pratense*), meadow foxtail, (*Alopecurus pratensis*), false-oat grass, (*Arrhenatherum elatius*), hop trefoil, (*Trifolium campestre*), common vetch, (*Vicia sativa*), lesser burdock, (*Arctium minus*), creeping thistle, (*Cirsium arvense)*, common dandelion, (*Taraxacum officinale*), yarrow, (*Achillea millefolium*), cock's-foot, (*Dactylis glomerata*), ragwort, (*Senecio jacobaea*), pignut, (*Conopodium majus*) and silverweed, (*Potentilla anserina*).

3.7 There is a small area of log piles present near the northern boundary of the site (see TN1). The piles contain a number of tree cuttings from the trees across the site, compost, collected leaves and fruit from sweet chestnut trees, (*Castanea sativa*). It is considered likely that these have been collected during the constant gardening works carried out onsite.

Amenity grassland

3.8 There was a large area of amenity grassland surrounding the house in the centre of the site. This grassland is regularly mown and kept very short in length. The species present within this grassland include creeping thistle, perennial ryegrass, (*Lolium perenne*) and ribwort plantain, (*Plantago lanceolata*). There were also a number of ornamental species surrounding the amenity grassland.

Mixed plantation woodland

3.9 There are a number of areas of mixed plantation woodland that fall within the site. These include areas of mixed plantation found within the garden and also areas of mixed plantation found along the eastern boundary of the site. The woodlands present along the eastern boundary connect to a larger area of mixed plantation woodland. The species recorded within these woodlands include English oak, *(Quercus robur*), ash, *(Fraxinus excelsior*), sweet chestnut, Scots pine, *(Pinus sylvestris*), beech, *(Fagus sylvatica*) and

sycamore, (*Acer pseudoplatanus*). The understorey species present within these woodlands include bramble, (*Rubus fruticosus* agg.), herb Robert, (*Geranium robertianum*), common nettle, (*Urtica dioica*), bracken, (*Pteridium aquilinum*), ground ivy, (*Glechoma hederacea*), rhododendron, laurel, (*Prunus laurocerasus*) and the ornamental 'golden king' holly, (*Ilex altaclerensis*).

3.10 There is small area of scots pine saplings which have naturally regenerated within the unimproved grassland area (see TN2). These saplings are approximately 3-4ft high and are located near the northern boundary of the site. There is also a small area of planted mixed plantation woodland within the unimproved grassland (see TN3). These trees are approximately 4-5ft high and are also located near the northern boundary.

Dense scrub

There is one small area of dense scrub located near the northern boundary of the site, this runs along a wooden post and rail fence. The species recorded within this scrub include bramble and common nettle.

Defunct species-poor hedgerow

3.11 There is one hedgerow located along the western boundary of the site. This hedgerow is located along a post and rail wooden fence. This hedgerow lacks species diversity and contains a number of gaps along the hedgerow. This hedgerow is dominated by hawthorn, (*Crataegus monogyna*) with other species recorded including blackthorn, (*Prunus spinosa*), field maple, *(Acer campestre*) and bracken.

Scattered trees

3.12 There are a number of scattered trees surrounding the buildings in the centre of the site. The majority of these trees are sweet chestnut trees and are all mature in age. Other tree species recorded include beech, oak and a number of ornamental tree species.

Standing water

3.13 There is one small pond located within the site near the western boundary of the site. This pond is surrounded by unimproved grassland. There is a small island within the pond which contains a small duck house. The pond has shallow margins which generally increase in depth towards the centre of the pond. The pond contains large areas of reedmace, (*Typha latifolia*) located around the margins and the island. Other species

recorded include dogwood, (*Cornus sanguinea*), soft rush, (*Juncus effusus*) and a water crowfoot (*Ranunculus* sp.).

Hard standing

3.14 There are a number of hard standing areas surrounding the house in the centre of the site. These areas consist of tarmac and are used for car parking. There is also a tennis court located near the southern site boundary (see TN4). The tennis court is also surfaced with tarmac.

Building

3.15 There are a number of buildings present within the site, these include a large detached property with a garage, as well as a detached pool house building and an outbuilding used as a garden store. The main house and attached garage is two storeys high with rendered brick walls and a tiled pitched roof.

Fence

3.16 There are two post and rail wooden fences located within the site. The first is located between the garden amenity grassland and the parking area and the second is located along the western site boundary adjacent to the defunct hedgerow.

Faunal Survey

3.17 General observations were made during the survey work of any faunal use of the site, with specific attention being paid to the potential presence of any protected, rare or notable species.

Bats

Roosting habitat

3.18 The site comprises a large detached property with a garage, as well as a detached pool house building and an outbuilding used as a garden store. The main house and attached garage is two storeys high with rendered brick walls and a tiled pitched roof. A number of skylight windows are present in the roof of the garage building and a few sections have a flat roof. The pool house is of similar construction to the main house, although is only a single storey with a high tiled pitched roof and rendered brick walls. The outbuilding is a fairly small single storey building that is a brick built with wooden cladding and a flat roof. These buildings offer high roosting potential as they have a number of potential

roosting features in the form of raised tiles, gaps at the gable ends, gaps in the wooden cladding and gaps by the chimney. In addition, a small number of bat droppings, thought to be from brown long-eared bats, were found in the loft space of the main house during the initial inspection in July 2017.

3.19 The site also includes a large number of mature and semi-mature trees that are likely to offer a high number of potential roosting features. In total there are 8 trees with low bat roosting potential, 2 trees with moderate bat roosting potential and 1 tree with high bat roosting potential. It is understood that the vast majority of these trees will not be affected by the proposals. However one sweet chestnut is present in close proximity to the garage section of the house and may be affected by the proposals. This tree was considered to offer low roosting potential due to the presence of a small number of splits and cracks.

3.20 The surrounding habitat is of high quality due to the presence of scattered trees in the immediate vicinity and a large pond to the west. Mature woodland is present to the east, north and south. A number of pools and connecting streams are present to the south.

Foraging habitat

3.21 The site is considered to offer moderate suitability for foraging and commuting bats due to the presence of scattered trees and a large pond. The surrounding area offers high quality foraging and commuting habitat for bats due to the presence of mature woodland and waterbodies.

3.22 There are two European Protected Species (EPS) licences within 2km of the site, as detailed on the MAGIC website. The closest is approximately1.6km to the south-west of the site. This is a licence in relation to common pipistrelle, (*Pipistrellus pipistrellus*), soprano pipistrelle, (*Pipistrellus pygmaeus*) and brown long-eared bats, with the licence dated between 2011 and 2013. The licence did not allow the destruction of a breeding site but did allow the destruction of a resting place. The other licence is approximately 1.9km to the south-west of the site. This licence relates to common pipistrelle bats, with the licence start and end date in 2016. The licence allowed the damage and destruction of a breeding site and the damage and destruction of a resting place.

3.23 The previous ecological survey conducted by Ecology Solutions in July 2017 was informed by a desk study from Worcestershire Biological Records Centre (WBRC). This

desk study search recorded four bat species within 1km of the site. The closest record was a soprano pipistrelle, approximately 0.3km to the south of the site. Other records included common pipistrelle, brown long-eared bat and *Myotis* sp. A noctule, (*Nyctalus noctula*) was recorded approximately 3.3km to the east of the site in 2015.

Badger

3.24 There was no evidence of badgers or any badger setts recorded within 30m of the site during the PEA survey.

3.25 The NBN gateway returned 24 records of badgers within 5km of the site. The closest record is approximately 2.3km to the east of the site.

Water vole

3.26 There is one waterbody present on the site which is considered to provide unsuitable habitat for water voles. The most common sites for water voles are vegetated banks of ditches, rivers, streams and canals with suitable banks for creating burrows. The onsite pond does not contain any large banks suitable for creating burrows and is isolated from ditches streams and canals.

3.27 The NBN search returned 2 records for water voles within the 5km search radius. The closest of these records was returned approximately 3.5km to the north-east of the site.

Otter

3.28 The site as a whole is considered generally unsuitable for breeding otters as there are no likely areas for creating otter holts. The pond however is stocked with carp and goldfish which could provide optimal foraging habitat for any otters present within the local area.

3.29 The NBN search returned 1 record for otters within the 5km search radius. This record was returned approximately 4.5km to the west of the site.

Dormouse

3.30 The mixed plantation woodlands within the site are considered to be generally unsuitable for dormice mainly due to the lack of under-storey connectivity within the woodland. In addition, the woodlands lack connectivity with woodlands and hedgerows that have records of dormouse.

3.31 The woodland areas are to be retained during the proposed works. The remaining habitats on the site are considered to provide unsuitable habitat for dormice.

3.32 The NBN search returned 3 records for dormice within the 5km search radius. The closest of these records was located approximately 3.5km to the south-west of the site.

Other mammals

3.33 A large number of grey squirrels, (*Sciurus carolinensis*), were observed within the site and the surrounding woodlands during the survey. In addition, there were burrows of moles, (*Talpa europaea*) and rabbits, (*Oryctolagus cuniculus*) observed on the site during the survey.

3.34 The NBN search returned 1 record of harvest mice within the 5km search radius. This record was located approximately 4.5km to the north-east of the site.

Great crested newts

3.35 There are 6 ponds within 500m of the site which includes one pond on the site. The onsite pond (pond1) is stocked with fish. The pond has relatively shallow margins which increase in depth towards the centre of the pond. The margins contain areas of reedmace and there is a small highly vegetated island located near the south of the pond. The waterbody has very little shade and the water quality is generally poor.

3.36 The remaining 5 ponds are located to the south of the site and are interconnected and are fed by a small stream which flows from east to west. The first pond located approximately 400m to the south-east of the site is Sweet Pool. The pond contains areas of marsh which connects into a larger pool. This pond is considered to contain fish.

3.37 The remaining four connecting ponds are also considered to contain fish due to the presence of a number of fish eating birds. These ponds are all relatively large, with poor water quality and very little shade. These ponds are all considered to be very deep. For photographs of each pond please see Appendix 1.

3.38 As all these ponds are present within 500m of the site (maximum dispersal distance for great crested newts), Habitat Suitability Index (HSI) assessments were carried out for each of the ponds. Please see table 1 below for the full HSI assessment details.

Table 1. HSI assessment scores of each water body assessed and their suitability for great crested newts.

Waterbody	HSI Score	Suitability
Pond 1	0.44	Poor
Pond 2	0.43	Poor
Pond 3	0.32	Poor
Pond 4	0.32	Poor
Pond 5	0.21	Poor
Pond 6	0.32	Poor

3.39 The HSI assessments carried out indicates that ponds 1-6 are all considered to provide a poor habitat suitability rating for great crested newts. Therefore this species is not carried forward within this assessment. For the full details on the calculations for each pond, please see Appendix 3.

3.40 The NBN gateway returned 3 records of GCN within 5km of the site. It shows the closest record of GCN is approximately 1.5km to the north-east of the site. There are no GCN licences shown on MAGIC within 2km of the site. The closest licence is approximately 9.5km to the south-east.

Reptiles

3.41 The site offers small areas of suitable habitat for reptiles in the form of the base of hedgerows and the areas of recently planted woodland. In addition, the small area of log piles provides habitat for grass snakes, (*Natrix helvetica*), in the form of potential egg laying habitat. This area is to be retained during the proposed works. The remaining habitats on the site are considered to provide unsuitable habitat for reptiles.

3.42 The NBN search returned no records of reptiles within the 5km search radius from then centre of the site.

Birds

3.43 The site offers limited nesting bird opportunities in a number of mature sweet chestnuts and a large beech tree. In addition there is a small area of scrub which could also provide suitable nesting habitat. There is also foraging habitat potential in the form of unimproved grassland and amenity grassland.

3.44 There were a number of foraging bird species recorded on the site and flying over the site during the PEA survey. These include nuthatch, (*Sitta europaea*), song thrush, (*Turdus philomelos*), jay, (*Garrulus glandarius*), bullfinch, (*Pyrrhula pyrrhula*), robin, (*Erithacus rubecula*), raven, (*Corvus corax*), buzzard, (*Buteo buteo*), meadow pipit, (*Anthus pratensis*), magpie, (*Pica pica*), blue tit, (*Cyanistes caeruleus*) and chaffinch, (*Fringilla coelebs*).

3.45 The NBN search returned 144 species of birds within the 5km search radius. These include Schedule 1 species such as kingfisher, (*Alcedo atthis*), bittern, (*Botaurus stellaris*), little ringed plover, (*Charadrius dubius*), quail, (*Coturnix coturnix*), whooper swan, (*Cygnus Cygnus*), cirl bunting, (*Emberiza cirlus*), merlin, (*Falco columbarius*), peregrine, (*Falco peregrinus*), hobby, (*Falco Subbuteo*), crossbill, (*Loxia curvirostra*), black redstart, (*Phoenicurus ochruros*), firecrest, (*Regulus ignicapillus*), green sandpiper, (*Tringa ochropus*), redwing, (*Turdus iliacus*), fieldfare, (*Turdus pilaris*), barn owl, (*Tyto alba*) and brambling, (*Fringilla montifringilla*). However none of these were specific to the site.

White-clawed crayfish

3.46 The white-clawed crayfish inhabits a diverse variety of clean aquatic habitats but especially favours hard-water streams and rivers (JNCC, 1997). There are no streams or rivers present within the site and the pond is largely unsuitable for crayfish therefore the presence of white-clawed crayfish is considered to be highly unlikely.

3.47 The NBN search returned 2 records of white-clawed crayfish within the 5km search radius. The closest of these records was located 2.1km to the south-west of the site.

Invertebrates

3.48 The site contains small areas within the site that in turn are likely to support a wide range of invertebrates. In particular the area of tall scrub and broad-leaved plantation woodland are considered the most suitable habitat for a range of invertebrate species.

3.49 The NBN search returned a large number of invertebrate records within the 5km search radius. The closest of these records returned were for a number of dragonfly and damselfly species recorded along the stream located approximately 200m to south of the site. The species recorded include blue tailed damselfly, (*Ischnura elegans*), brown aeshna, (*Aeshna grandis*), banded demoiselle, (*Calopteryx splendens*), and common blue damselfly, (*Enallagma cyathigerum*).

4.0 CONCLUSIONS AND RECOMMENDATIONs

Ecological Designations

Ecological Statutory Designations

4.1 There were no statutory designations returned from the MAGIC search within 2km of the site. There is however, a Site of Special Scientific Interest (SSSI) Impact Risk Zone within 2km of the site. These are put in place to highlight the importance of nearby SSSIs. The description associated with this SSSI Impact Risk Zone, does not highlight the need to contact the local planning authority for residential developments.

Ecological Non- Statutory Designations

4.2 No ecological non-statutory designations were returned from the MAGIC search within 2km of the site.

Ancient Woodland

4.3 No areas of ancient woodland were returned from the MAGIC search within 2km of the site.

Habitats

4.4 The majority of the site comprises amenity grassland, buildings and hard standing ground which are considered of low ecological value. The areas of mixed plantation woodland, hedgerow and unimproved neutral grassland are considered of moderate ecological value and these habitats are to be retained during the extent of the works.

<u>Recommendations</u>

<u>Bats</u>

4.5 Bats are protected under the Conservation of Habitats and Species Regulations 2010and the Wildlife and Countryside Act 1981 (as amended). This legislation affords them protection against killing, injury and disturbance, as well as the damage, destruction or obstruction of access to their resting places, in addition to other actions (please see Appendix 2 for details of wildlife legislation).

Roosting

4.6 Prior to the commission of the PEA survey, bat roost surveys were carried out on the buildings and trees. For the full information on these surveys please see M16.209.R.001Bat Roost Survey Report.

4.7 In total there are 8 trees with low bat roosting potential, 2 trees with moderate bat roosting potential and 1 tree with high bat roosting potential. It is understood that the vast majority of these trees will not be affected by the proposals. In the case that these trees are required to be removed during the extent of the works, then it is recommended that bat surveys are carried out on the identified trees with bat potential.

4.8 There are no further protected species surveys recommended due to the limited habitats present within the site and, due to the lack of any negative impacts to existing or adjacent habitats from the proposed works.

4.9 It is recommended that if any areas of vegetation suitable for bird nesting need to be removed during the works, that these clearance works are undertaken outside nesting bird season (Late February/late August but variable each year and between species). In the case that this is not possible, all clearance works should be preceded by a nesting bird survey carried out by a suitably qualified ecologist. This may involve delays if birds are found. Exclusion zones may be invoked until nesting has finished and birds have fledged.

4.10 It is recommended that the hedgerow is retained along the western boundary of the site, and any lighting in this area is minimised or, shrouded or, timers or passive infrared (PIR) sensors are incorporated to minimise the potential negative effects on bat flight paths/connectivity with the wider countryside.

4.11 The wooded area to the northern and eastern boundary of the site should also be protected from light spill by the use of shrouds, timers or PIR sensors or, a combination of these, again to lessen any potential impact on bat flight paths/connectivity with the wider countryside. Any potential impacts on such flight paths are not anticipated to be any greater than site level as there are further existing features suitable as bat flight paths in the local area.

4.12 With the exclusion of bat species and breeding birds it is not anticipated that any protected or priority species or habitats will require any mitigation measures on the Fir Lodge site. Mitigation measures are listed above for breeding birds and proposed licensed works in M16.209.R.001Bat Roost Survey Report.

5. References

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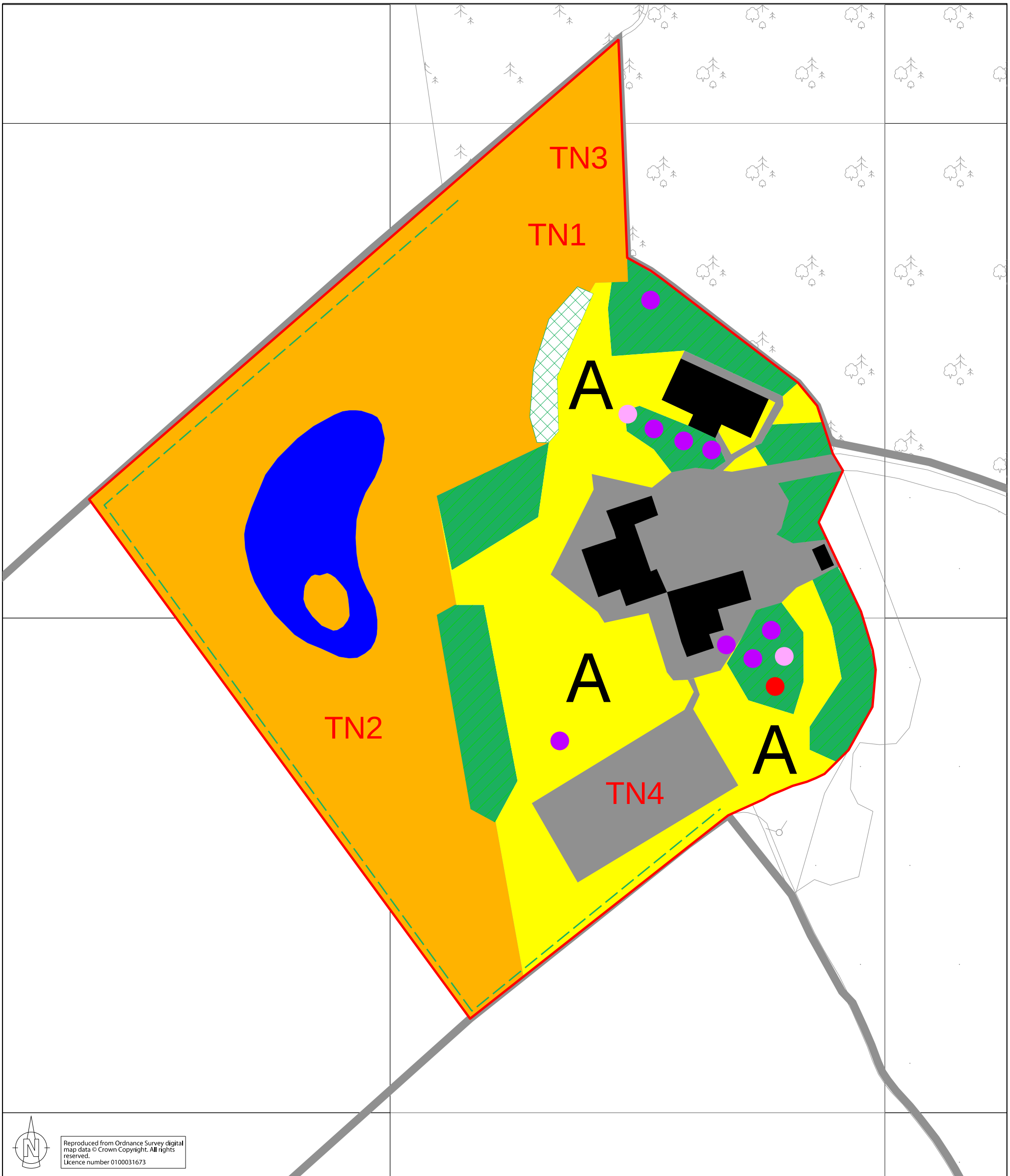
Drawing M16.209(a).D.001

PEA Survey



Legend

- Site Boundary
- Mixed Plantation Woodland
- Continuous Scrub
- Unimproved Neutral Grassland
- Pond
- A — Amenity Grassland
- Defunct Hedgerow
- Building
- Hardstanding
- Tree with High Bat Roosting Potential
- Tree with Moderate Bat Roosting Potential
- Tree with Low Bat Roosting Potential
- TN1 — Target Notes

REV	AM'D	NOTES	DATE

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DRAWING STATUS
FINAL

PROJECT
FIR LODGE

CLIENT
BB Partnership Ltd

TITLE
PEA Survey

DATE	SCALE
Dec 2017	1:350@A3
DRAWN K.H	CHECKED S.P
DRAW NO. M16.209(a).D.001	REVISION

Appendix 1

Photographs

Plate 1. A view of the onsite pond (Pond 1) located near the western site boundary.

Plate 2. A view of the scattered scrub along the post and rail fenceline near the northern boundary of the site.

Plate 3. A view of the post and rail fence dividing the amenity grassland and unimproved grassland near the north-western site boundary.

Plate 4. A view of a number of trees with moderate and low bat roosting potential near the southern site boundary.

Plate 5. A view of the amenity grassland located within the centre of the site.

Plate 6. A view of the hard standing tennis court located near the southern boundary of the site.

Plate 7. A view of a number of trees with high, moderate and low bat roosting potential located near the southern site boundary.

Plate 8. A view of the mixed plantation woodland located along the eastern boundary of the site.

Plate 9. A view of the ground flora within the mixed plantation woodland. This was surveyed for badger signs and setts and was located to the east of the site.

Plate 10. A view of the road leading to the site surrounded by mixed plantation woodland. This track is located to the east of the site boundary.

Plate 11. A view of pond 3 located approximately 200m to the south-east of the site.

Plate 12. A view of the outflow from Pond 3 connecting into a stream which leads into pond 4.

Plate 13. A view of the stream leading from pond 3 to pond 4.

Plate 14. A view on pond 4 located approximately 170m to the south-west of the site.

Plate 15. A view of the outflow from Pond 4 that leads into pond 5.

Plate 16. A view of pond 5 located approximately 300m to south-west of the site.

Plate 17. A view of pond 6 located approximately 500m to the south-west of the site.

Plate 18. A view of the pool house building located near the northern boundary of the site.

Plate 19. A southern view of the large detached house located in the centre of the site.

Plate 20. A view of amenity grassland and large standing tree with low roosting potential for bats. This is located between the main detached house and the tennis court.

Plate 22. A view of the unimproved grassland surrounding pond 1 near the western site boundary.

Plate 23. A view of mixed plantation woodland located in the centre of the site.

Plate 24. A view of the hedgerow and unimproved grassland located along the western boundary of the site.

Plate 25. A view of pond 2 (Sweet Pool) located approximately 400m to the south-east of the site.

Plate 26. A view of the stream that feeds into pond 2 (Sweet Pool).

Appendix 2

Target Notes

Target Notes from PEA Survey

Target Note	Grid Reference	Notes
1	SO8892979972	Log piles including cutting from large trees onsite, collected leaves, compost and fruit from sweet chestnut trees.
2	SO8894080000	Young mixed plantation woodland with trees approximately 4-5ft in height. Species include silver birch and English oak. Tree guards present around trees.
3	SO8889379878	Regenerated woodland; Scots pine saplings approximately 3-4ft in height.
4	SO8894579865	Hard standing area which consists of a tennis court.

Appendix 3

Full HSI Calculations

Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*): Oldham *et al* 2000 (Note: HS2, pond area is not included in large ponds over 2,000m²)

Pond 1

Habitat Suitability Index	Factor	Value	Rating for Index
HS1	Geographic Location	1.00	*Excellent*
HS2	Pond Area	0.90	*Excellent*
HS3	Drying out frequency	1.00	*Excellent*
HS4	Water Quality	0.33	*Poor*
HS5	Shade	1.00	*Excellent*
HS6	Fowl	0.01	*Poor*
HS7	Fish	0.33	*Poor*
HS8	Pond Count	1.00	*Excellent*
HS9	Terrestrial habitat	0.67	*Average*
HS10	Macrophytes	0.40	*Poor*
Overall HSI Value		**0.44**	**Poor**

Pond 2

Habitat Suitability Index	Factor	Value	Rating for Index
HS1	Geographic Location	1.00	*Excellent*
HS3	Drying out frequency	0.90	*Excellent*
HS4	Water Quality	0.67	*Average*
HS5	Shade	0.20	*Poor*
HS6	Fowl	0.67	*Average*
HS7	Fish	0.01	*Poor*
HS8	Pond Count	1.00	*Excellent*
HS9	Terrestrial habitat	0.67	*Average*
HS10	Macrophytes	0.40	*Poor*
Overall HSI Value		**0.43**	**Poor**

Pond 3

Habitat Suitability Index	Factor	Value	Rating for Index
HS1	Geographic Location	1.00	*Excellent*
HS3	Drying out frequency	0.90	*Excellent*
HS4	Water Quality	0.67	*Average*
HS5	Shade	1.00	*Excellent*
HS6	Fowl	0.01	*Poor*
HS7	Fish	0.01	*Poor*
HS8	Pond Count	1.00	*Excellent*
HS9	Terrestrial habitat	0.67	*Average*
HS10	Macrophytes	0.30	*Poor*
Overall HSI Value		**0.32**	**Poor**

Pond 4

Habitat Suitability Index	Factor	Value	Rating for Index
HS1	Geographic Location	1.00	*Excellent*
HS3	Drying out frequency	0.90	*Excellent*
HS4	Water Quality	0.67	*Average*
HS5	Shade	1.00	*Excellent*
HS6	Fowl	0.01	*Poor*
HS7	Fish	0.01	*Poor*
HS8	Pond Count	1.00	*Excellent*
HS9	Terrestrial habitat	0.67	*Average*
HS10	Macrophytes	0.30	*Poor*
Overall HSI Value		**0.32**	**Poor**

Pond 5

Habitat Suitability Index	Factor	Value	Rating for Index
HS1	Geographic Location	1.00	*Excellent*
HS3	Drying out frequency	0.90	*Excellent*
HS4	Water Quality	0.01	*Average*
HS5	Shade	1.00	*Excellent*
HS6	Fowl	0.01	*Poor*
HS7	Fish	0.01	*Poor*
HS8	Pond Count	1.00	*Excellent*
HS9	Terrestrial habitat	0.67	*Average*
HS10	Macrophytes	0.30	*Poor*
Overall HSI Value		**0.21**	**Poor**

Pond 6

Habitat Suitability Index	Factor	Value	Rating for Index
HS1	Geographic Location	1.00	*Excellent*
HS3	Drying out frequency	0.90	*Excellent*
HS4	Water Quality	0.67	*Average*
HS5	Shade	1.00	*Excellent*
HS6	Fowl	0.01	*Poor*
HS7	Fish	0.01	*Poor*
HS8	Pond Count	1.00	*Excellent*
HS9	Terrestrial habitat	0.67	*Average*
HS10	Macrophytes	0.30	*Poor*
Overall HSI Value		**0.32**	**Poor**

Appendix 4

Wildlife Legislation

Wildlife Legislation

Badgers (*Meles meles*)

In the UK the relevant legislation pertaining to Badgers is the Protection of Badgers Act 1992 and the Wildlife and Countryside Act, 1981 (as amended). Under the Protection of Badgers Act it is an offence to:

- Wilfully kill, injure, take possess or cruelly ill-treat* a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett# (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

  * the intentional elimination of sufficient foraging area to support a known social group of badgers may, in certain circumstances, be construed as an offence by constituting 'cruel ill treatment' of a Badger.

  # a sett is defined as 'any structure or place which displays signs indicating current use by a Badger', with 'current use' defined by Natural England under interim guidance as over the preceding few months prior to a likely interference/disturbance event.

Licences can be obtained from the SNCO for development activities that would otherwise be unlawful under the legislation.

Bats

All British bats are European protected species and therefore receive protection under the Conservation of Habitats and Species Regulations (2010), making it an offence to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats, including in particular any disturbance which is likely to:
  - impair their ability to survive, reproduce or to rear or nurture their young;
  - impair their ability to hibernate or migrate; or
  - significantly affect their local distribution or abundance.
- Damage or destroy a breeding site or resting place of a bat;
- Possess or control any live or dead specimen or anything derived from a bat;
- Sell, offer for sale, possess or transport a bat (live or dead, part or derivative) for the purpose of sale or advertise for buying or selling.

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

- Damage, destroy or obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

Licences can be obtained from the Statutory Nature Conservation Organisation (SNCO) for development activities that would otherwise be unlawful under the legislation.

Water Vole (*Arvicola amphibius*)

Water Voles are protected under the Wildlife and Countryside Act 1981 (as amended), making it illegal to:

- Intentionally kill, injure or take a Water Vole;
- Possess or control a live or dead Water Vole, or any part of a Water Vole;
- Intentionally or recklessly disturb, destroy or obstruct access to any place that Water Voles use for shelter or protection;
- Sell, offer for sale or advertise any live or dead Water Voles.

Otter (*Lutra lutra*)

Otters are a European protected species and therefore receive protection under the Conservation of Habitats and Species Regulations (2010), making it an offence to:

- Deliberately kill, injure or capture an Otter;
- Deliberately disturb Otters, including in particular any disturbance which is likely to:
    - impair their ability to survive, reproduce or to rear or nurture their young;
    - impair their ability to hibernate or migrate; or
    - significantly affect their local distribution or abundance.
- Damage or destroy a breeding site or resting place of an Otter;
- Possess or control any live or dead specimen or anything derived from an Otter;
- Sell, offer for sale, possess or transport an Otter (live or dead, part or derivative) for the purpose of sale or advertise for buying or selling.

In addition, Otters are listed under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended), which contains further provisions making it an offence to intentionally or recklessly:

- Damage, destroy or obstruct access to any structure or place which an Otter uses for shelter or protection; or
- Disturb an Otter while occupying a structure or place which it uses for that purpose.

Dormice(*Muscardinus avellanarius*)

Dormice are a European protected species and therefore receive protection under the Conservation of Habitats and Species Regulations (2010), making it an offence to:

- Deliberately kill, injure or capture a Dormouse;
- Deliberately disturb Dormice, including in particular any disturbance which is likely to:
    - impair their ability to survive, reproduce or to rear or nurture their young;
    - impair their ability to hibernate or migrate; or
    - significantly affect their local distribution or abundance.
- Damage or destroy a breeding site or resting place of a Dormouse;
- Possess or control any live or dead specimen or anything derived from a Dormouse;
- Sell, offer for sale, possess or transport a Dormouse (live or dead, part or derivative) for the purpose of sale or advertise for buying or selling.

In addition, Dormice are listed under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended), which contains further provisions making it an offence to intentionally or recklessly:

- Damage, destroy or obstruct access to any structure or place which a Dormouse uses for shelter or protection; or
- Disturb a Dormouse while occupying a structure or place which it uses for that purpose.

Amphibians

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

Great Crested Newt is a European protected species and as such receives full protection under the Conservation of Habitats and Species Regulations 2010, making it an offence to:

- Deliberately capture, injure or kill a Great Crested Newt;
- Deliberately disturb Great Crested Newts, including in particular any disturbance which is likely to:
    - impair their ability to survive, reproduce or to rear or nurture their young;
    - impair their ability to hibernate or migrate; or
    - significantly affect their local distribution or abundance.
- Deliberately take or destroy eggs of Great Crested Newts;
- Damage or destroy a breeding site or resting place of Great Crested Newts;
- Possess or control any live or dead specimen or anything derived from a Great Crested Newt;
- Sell, offer for sale, possess or transport a Great Crested Newt (live or dead, part or derivative) for the purpose of sale or advertise for buying or selling.

<u>Reptiles</u>

All reptile species receive protection under the Wildlife & Countryside Act 1981 (as amended), making it illegal to;

- Intentionally kill or injure reptiles;
- Sell, offer for sale, possess or transport reptiles (live or dead, part or derivative) for the purpose of sale or advertise for buying or selling.

In addition, due to their status as scarce species both Smooth Snake (*Coronella austriaca*) and Sand Lizard (*Lacerta agilis*) are European protected species, protected under the Conservation of Habitats and Species Regulations, 2010. This affords them additional protection, making it illegal to:

- Deliberately capture Smooth Snakes or Sand Lizards;
- Deliberately disturb Smooth Snakes or Sand Lizards, including in particular any disturbance which is likely to:
    - impair their ability to survive, reproduce or to rear or nurture their young;
    - impair their ability to hibernate or migrate; or
    - significantly affect their local distribution or abundance.

- Damage or destroy a breeding site or resting place of Smooth Snakes and Sand Lizards.
- Possess or control any live or dead specimen or anything derived from a Smooth Snake or Sand Lizard.

Birds

All wild birds, their nests and eggs are protected throughout the breeding season (typically late February to late August inclusive) under the Wildlife and Countryside Act, 1981 (as amended). This legislation makes it an offence to (with certain limited exceptions and in the absence of a licence) intentionally:

- Kill or injure any wild bird;
- Take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- Take or destroy the egg of any wild bird;
- It is also an offence to possess any live or dead wild bird or egg, or anything derived from a bird or egg
- Restrictions on trade and advertising also apply.

Schedule 1 of the Wildlife & Countryside Act 1981 is a list of the nationally rare and uncommon breeding birds for which all offences carry special (i.e. greater) penalties. These species also benefit from additional protection whilst breeding, as it is an offence to disturb adults or their dependent young when at a nest.

The RSPB categorise British bird species in terms of conservation importance based on a number of criteria including the level of threat to a species population status. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern, being either globally threatened and / or experiencing a high level of population decline (e.g. a reduction in breeding population size greater than or equal to 50% over the past 25 years or since 1969, when the first species assessment was made).

Crayfish

White-clawed Crayfish (*Austropotamobius pallipes*) are protected under the Wildlife and Countryside Act, 1981 (as amended), making it an offence to:

- Take White-clawed Crayfish from the wild;

- Sell, offer for sale, possess or transport White-clawed Crayfish (live or dead, part or derivative) for the purpose of sale or advertise for buying or selling.

In addition, under the Wildlife and Countryside Act, 1981 (as amended) it is an offence to:

- Release or allow to escape into the wild any animal which is included in Part I of Schedule 9

Signal Crayfish (*Pacifastacus leniusculus*) are included in Part 1 of Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended).