PRELIMINARY ECOLOGICAL APPRAISAL

at

Land off Parkwood Road
Huddersfield
West Yorkshire
HD3 4TT

Client:
Parkwood Ventures LLP and Sir Robert Ogden Estates Ltd

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14823a/AmB Rev 1

Date of Report: 21/11/2019

JCA Limited
Arboricultural & Ecological Consultants

Quality Assurance

Version	**Desktop Survey Completed:**		**Site Surveyed:**		**Report Completed:**		**Checked:**	
	Date	Name	Date	Name	Date	Name	Date	Name
14823a/ AmB Rev 1	7/3/2019	Amanda Beck	5/3/2019	Amanda Beck	21/11/2019	Amanda Beck	21/11/2019	Jonathan Cocking

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development 2018* and the *CIEEM's Code of Professional Conduct.*

Risk Assessment Completed	
Bio-security Procedure Completed	
Lone Worker Procedure Completed	

Summary

A report is required for **Land off Parkwood Road, Golcar** to assess the ecological value of the site by documenting the habitat types present and the site's potential for supporting rare and protected species. The development proposed on this site is to build twenty-seven houses with parking facilities and planting for wildlife.

A desktop study was undertaken on the 7th March 2019 in order to obtain any relevant ecological records that may be present within a 2km radius of the site, including protected and notable species records and nature conservation designations.

The site was surveyed on the 5th of March by Amanda Beck Cert/HE in Field Ecology, Diploma in Field and Conservation Ecology, Qualifying CIEEM Member NE Level 1 Class Licence – 2018-38295-CLS-CLS. A thorough site assessment was undertaken following the guidelines set out in the JNCC's *Handbook for Phase 1 habitat surveys*.

Recommendations:

- **Bats:** Prior to any works beginning **three** transect surveys must be carried out on the site.
- **Birds:** Trees and dense scrub located around the site have the potential to support nesting birds; any vegetation clearance must be conducted outside the bird breeding season if possible, which run approximately March to August. A nesting bird survey will be required prior to removal of vegetation if this work is to be carried out during the breeding bird season. This survey must be carried out by a qualified ecologist.
- **Hedgehogs:** Hedgehog holes must be incorporated into any new fencing being erected to allow for the movement of hedgehogs on site.
- **Lighting Design:** Where lighting is required, conditions must be imposed to ensure the impact on wildlife is kept to a minimum. Lighting will be situated away from areas of both retained and new trees, hedgerows and shrubs. Where possible lighting that can be dimmed or sensor lighting must be used as this reduces light spill onto the site and ensures dark corridors are created for light shy bat species to forage and commute.
- **Biodiversity Enhancement Plan**: A Biodiversity Enhancement Plan is recommended this will give the design of boxes for bats, birds and insects, their locations as to where they are to be situated. It will recommend native plant species and advise on wildlife friendly refugia and wild flower mixes.
- Retention and improvement of ecological valuable features on site

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- Native shrub, trees, grasses, hedgerow planting.
- Gaps in fencing to hedgehogs and other small mammals.
- Low level ‘wildlife friendly’ lighting options.
- Buffer Zones where appropriate.
- Integral bird, bat and hedgehog box quantities, designs and advised locations for placement on boxes.
- Five-year maintenance and monitoring plan for the site.
- **Please see section 9 for details of survey details and timescales for additional survey work**.

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1. Introduction and Terms of Reference

1.1 Terms of Reference

1.1.1 I am instructed by **Parkwood Ventures LLP and Sir Robert Ogden Estates Ltd** to visit the site and prepare my findings in a report.

1.1.2 For this purpose, I have been supplied with a site map and details of the proposed development, drawing No: 00-002 Rev F dated 27/3/2019.

1.2 Scope of the Report

1.2.1 This survey was carried out in accordance with the Joint Nature Conservation Committee's (JNCC's) *Handbook for Phase 1 habitat survey - A technique for environmental audit* (2010).

1.1.1 This report is compiled in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM's) *Guidelines for Ecological Report Writing* and to the British Standard Institution's *Biodiversity – Code of Practice for Planning and Development* (2018) by Amanda Beck Cert/HE in Field Ecology, Diploma in Field and Conservation Ecology, Qualifying CIEEM Member, NE Level 1 Class Licence – 2018-38295-CLS-CLS.

1.2.2 The results and recommendations contained within this report are considered to be valid for a period of between 18 and 24 months. After this period, an update to the report and re-assessment of the site may be required in order to inform ecological constraints to any developments proposed, and/or to accompany a planning submission. If the proposed development changes significantly or land use alter substantially, updates may be required in advance of the expiry period of the report.

1.3 Purpose of the Report

1.3.1 This report aims to assess and classify all habitats present on site, and to determine the ecological value of these habitats. The report will determine the likely impact of the proposed development on the local environment and biodiversity as well as the potential impact of the proposed development on regional biodiversity and wildlife populations. The report will determine the extent of potential habitat fragmentation likely to be caused by the proposed development and provide recommendations, where necessary, to limit the impact of the proposed development on habitat connectivity and biodiversity locally.

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1.4 Details of Proposed Development

1.4.1 The development proposed on this site is to build seventeen houses with car parking facilities with planting for wildlife.

1.5 Site Description

1.5.1 **Land off Parkwood Road, Golcar** is situated 3.8km east of Huddersfield, at grid reference: SE102168.

1.5.2 The site comprises of grassland with groups of broadleaved trees growing across the centre of the site and to the north. There is a beech hedgerow to the west with dense scrub to the north of the site. Tall ruderals are growing sporadically around the grassland. Boundaries are a mixture of fencing, stone and walls.

1.5.3 The site is surrounded by residential dwellings and a residential mill 48m from the site with a mill chimney stack (see **Appendix 3 photo 7 & 8**) and mill pond to the north-east. Next to the mill building is a derelict mill with window panes broken and roof tiles slipped (See **Appendix 3 photo 8**). Hard standing for car parking is in front of both mills. To the north is Claywood Brook with Longwood reservoir 500m west. To the north-west 369m is Compensation reservoir.

1.5.4 To the east is dense woodland with agricultural land to the north-east and west. Over the boundary to the south-east and south-west is a new housing development currently under construction. A map of the site in relation to surrounding habitats can be seen below.

Figure 1: Google Maps image of **Land off Parkwood Road, Golcar** showing the survey site in relation to the surrounding landscape and habitats. Red line indicates site boundary.

Google map image © 2019

2. Methodology

2.1 Desktop Study Methodology

2.1.1 A desktop study was undertaken on 7th March 2019 in order to obtain any relevant ecological records that may be present within a 2km radius of the site. This includes protected and notable species records, as well as nature conservation designations. For this information, the local ecological records centre was contacted: West Yorkshire Ecology Service.

2.1.2 The search buffer of 2km from the central site grid reference is considered sufficient in order to cover the potential zone of influence of the proposed development.

2.1.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was used to locate any designated sites, both statutory and non-statutory, such as Local Nature Reserves (LNRs), Ramsar Sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Sites of Special Scientific Interest (SSSIs) that may be present within 2km of the survey site.

2.2 Site Assessment Methodology

2.2.1 A thorough site assessment was undertaken on 5/3/2019 by Amanda Beck Cert/HE in Field Ecology, Diploma in Field and Conservation Ecology, Qualifying CIEEM Member, following the guidelines set out in the JNCC's *Handbook for Phase 1 habitat surveys*.

2.2.2 The entire site was walked over by an experienced consultant who mapped and described each habitat type that was present. The dominant floral species of each habitat were noted as well as any faunal species that were encountered.

2.2.3 All habitats present with the potential to support protected or notable species were classified and noted. Signs of fauna were noted as target notes on the site, which can be seen in **Appendix 1, Phase 1 Map** (where signs were found).

2.2.4 In the context of this report, rare, protected or notable species are those listed under the following: UK or European legislation, UK Biodiversity Framework Priority Species (including, but not limited to LBAP species), nationally rare or scare flora/fauna/habitats, Species of Conservation Concern (JNCC Red List, RSPB/BTO Amber Lists).

2.2.5 Non-native, invasive species, as listed under Schedule 9 of the Wildlife and

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Countryside Act (1981) as amended have been noted and mapped, where present as under the Wildlife and Countryside Act (1981) as amended it is an offence to release or allow to escape into the wild any flora/fauna not ordinarily a resident of the UK, which has been categorised as potential harmful to the UK flora and/or fauna.

2.2.6 Whilst conducting the site walk-over, any features that may be of value to or have the potential to support protected species were noted and photographic evidence taken (please refer to **Appendix 3**). Such protected species include, but are not limited to, Badgers, Bats, Dormice, Great Crested Newts, Nesting Birds, Otters, Reptiles, Water Voles, White-Clawed Crayfish (please see **Appendix 7**).

2.2.7 The survey was conducted during the sub-optimal time for botanical surveys. Therefore, many of the plant species encountered were either not in flower/leaf or were dead.

2.2.8 Plant species that may be present in the summer months are often not visible in the winter. If a more accurate and comprehensive floral record is required, the optimum time to conduct botanical surveys would be between the months of April and September.

2.2.9 This limitation made floral identification difficult, meaning this report will not represent a comprehensive indication of the site's biodiversity. However, this constraint will not affect the overall conclusion of the report, as habitat types can still be classified and the potential for protected species can still be accurately assessed.

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3. Results

3.1 Desktop Study Results

3.1.1 Local Data Centre Records: West Yorkshire Ecology Service has been commissioned to provide the records held for protected and notable species within a 2km radius of the survey site. The results have been summarised below. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area. Please see **Table 1** below for a summary of the protected and priority species records obtained from the West Yorkshire Ecology Services.

Table 1: Priority and protected species records obtained from the West Yorkshire Ecology Services within a 2km radius of the site boundary.

	Common Name	Scientific Name	On site	Within 500m	Within 1km	Within 2km	Notes
Amphibians	Common Toad	*Bufo bufo*	×	×	✓	✓	There are twenty-eight records dating from 1996 to 2008. Fourteen of these records are of dead toads on the road. The rest of the records are of field observations. This is UK and West Yorkshire BAP species.
	Palmate Newt	*Lissotriton helveticus*	×	✓	✓	✓	Two records dating from 2008 to 2010 of field observations. This is a West Yorkshire BAP species.
	Common Frog	*Rana temporaria*	×	×	✓	✓	There are eighteen records dating from 1996 to 2010. Two of these records were of torching in 2003 the rest are of field observations. This species is a West Yorkshire BAP species.
Bats	Common Pipistrelle	*Pipistrellus pipistrellus*	×	×	✓	✓	Twenty-six records dating from 2003 to 2014. Of field observations, roosts and bat droppings and one record in 2014 of a foraging bat. This species is a UK and West Yorkshire BAP species.
	Soprano Pipistrelle	*Pipistrellus pygmaeus*	×	×	✓	✓	One field observation record dating from 2008. This species is a UK and West Yorkshire BAP species.
	Unidentified Pipistrelle Species	*Pipistrellus sp.*	×	×	✓	✓	Four records dating from 20002006. One record in 2000 was of a bat roost and one record in 2006 was a roost excluded.

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							Two records one in 2005 the other in 2008 were of field observations with one record in 2006 being of a bat casualty.
	Brown Long-eared	*Plecotus auritus*	×	×	✓	✓	Three records dating from 2003 to 2014 of field observations. This species is a West Yorkshire BAP species
	Noctule	*Nyctalus noctula*	×	×	✓	✓	Two records dating from 2010 are of field observations. This species is a West Yorkshire BAP species
	Leisler's Bat	*Nyctalus leisleri*	×	×	✓	✓	One field observation record dating from 2003. This species is a West Yorkshire BAP species
	Whiskered Bat	*Myotis mystacinus*	×	×	✓	✓	One field observation record dating from 2008. This species is a West Yorkshire BAP species.
	Unidentified Bat Species	*Chiroptera*	×	×	✓	✓	Five records dating from 1993 to 2007. One record in 1993 was of a bat roost. One record in 2002 was of a maternity roost with another record in 2003 of a bat roost. In 2007 an excluded bat roost was recorded with one record in 2005 of a juvenile grounded bat. This species is a West Yorkshire BAP species
Crustacean **(Schedule 9)**	Signal Crayfish	*Pacifastacus leniusculus*	×	×	✓	✓	There are four records all dating from 2010 of field observations of ten individuals during two observations.
Mammals	Grey Squirrel	*Sciurus catolinensis*	×	×	✓	✓	One field observation record dating from 2015.
	Badger	*Meles meles*	×	×	✓	✓	One record dated 2013. Data concerning this record is withheld due to the confidential nature of badger information.
Birds (**Schedule 1)**	Kingfisher	*Alcedo atthis*	×	×	✓	✓	There are two records dating from 1970 to 1988, This is an amber listed species and a Bird of Conservation Concern.
	Redwing	*Turdus iliacus*	×	×	✓	✓	There are two records dating from 1970 to 1991. The bird is red listed and a Bird of Conservation Concern.
	Fieldfare	*Turdus pilaris*	×	×	✓	✓	There are two field records dating from 1970 to 1991. It is a Bird of Conservation Concern and red

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							listed.
Birds (Other)	Skylark	*Alauda arvensis*	×	×	✓	✓	There are four records dating from 1970 to 1988 with two of these records being of breeding birds. This species is a red listed bird and a Bird of Conservation Concern. A UK and West Yorkshire BAP species.
	Mallard	*Anas platyrhynchos*	×	×	✓	✓	There are eleven records dating from 1970 to 2015. Is Amber listed and a Bir of Conservation Concern.
	Meadow Pipit	*Anthus pratensis*	×	×	✓	✓	There are two field records dating from 1970 to 1991. This species is amber listed and a Bird of Conservation Concern.
	Linnet	*Carduelis cannabina*	×	×	✓	✓	There are six file records with four records being of breeding pairs. Records date from 1991 to 2009. This species is red listed, a Bird of Conservation Concern, UK and West Yorkshire BAP species.
	Stock Dove	*Columba cenas*	×	×	✓	✓	There are two field records dating from 1970 to 1991. This is an amber listed species and a Bird of Conservation Concern.
	Cuckoo	*Cuculus canorus*	×	×	✓	✓	Two records dating from 1970 to 1991 of field observations. This species is a red listed, a Bird of Conservation Concern. A UK and West Yorkshire BAP species.
	House Martin	*Delichon urbica*	×	×	✓	✓	Two field records dating from 1970 to 1991. This is an amber listed species and a Bird of Conservation Concern. It is a West Yorkshire BAP species.
	Yellowhammer	*Emberiza citronella*	×	×	✓	✓	Two field records dating from 1970 to 1991. This is a red listed species and a Bird of Conservation Concern. It is a UK and West Yorkshire BAP species.
	Kestrel	*Falco tinnunculus*	×	×	✓	✓	There are five field records dating from 1970 to 2005. This is a Bird of Conservation Concern, is amber listed and a West Yorkshire BAP species.
	Snipe	*Gallinago gallinago*	×	×	✓	✓	Two field records dating from 1970 to 1991. This is an amber listed species and a Bird of Conservation Concern.
	Swallow	*Hirundo rustica*	×	×	✓	✓	Three field records dating from 1970 to 2009. It is an amber listed species, a Bird of Conservation

							Concern and a West Yorkshire BAP species.
	Grey Wagtail	*Motacilla cinerea*	×	×	✓	✓	Two field records dating from 1970 to 19891 This is an amber listed species and a Bird of Conservation Concern.
	Spotted Flycatcher	*Muscicapa striata*	×	×	✓	✓	Two field records dating from 1970 to 1991. This is a red listed species and a Bird of Conservation Concern. Is a UK and West Yorkshire BAP species.
	House Sparrow	*Passer domesticus*	×	×	✓	✓	One record dated 1988, this species is red listed, a Bird of Conservation Concern and a UK and West Yorkshire BAP species.
	Tree Sparrow	*Passer montanus*	×	×	✓	✓	Three field records dating from1970 to 2015. It is red listed, Bird of Conservation Concern and a UK and West Yorkshire BAP species.
	Willow Warbler	*Phylloscopus trochilus*	×	×	✓	✓	Two field record dating from1970 to 1991. It is an amber listed species and a Bird of Conservation Concern.
	Green Woodpecker	*Picus viridus*	×	×	✓	✓	Two field record dating from1970 to 1991. It is an amber listed species and a Bird of Conservation Concern.
	Dunnock	*Prunella modularis*	×	×	✓	✓	Two field record dating from1970 to 1991. It is an amber listed species and a Bird of Conservation Concern. A UK and West Yorkshire BA species.
	Bullfinch	*Pyrrhula pyrrhula*	×	×	✓	✓	Two field records dating from1970 to 1991. An amber listed species and Bird of Conservation Concern. It is a UK and West Yorkshire BAP species.
	Starling	*Sturnus vulgaris*	×	×	✓	✓	One field record of a count of 25 individuals in 2009. This is a Bird of Conservation Concern, UK and West Yorkshire BAP species.
	Song Thrush	*Turdus philomelos*	×	✓	✓	✓	Four records dating from 1970 to 2000 with two of these records being of bereding pairs and two of field observations. This is a Bird of Conservation Concern, red listed and UK and West Yorkshire BAP species.
	Mistle Thrush	*Turdus viscivorus*	×	×	✓	✓	There are three field records dating from 1970 to 2009. This is a bird of Conservation Concern and is red listed.
	Lapwing	*Vanellus*	×	×	✓	✓	There are two field record dating

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		vanellus					from 1970 to 1991. This is a UK and West Yorkshire Bap species and is a red listed species and a bird of conservation concern.
Reptiles	Adder	*Viper berus*	×	×	×	✓	Two records dating from 2008. Schedule 5 species and a West Yorkshire BAP species. Nearest record being 919m from the site.
Invertebrates	Musk Beetle	*Aromia moschata*	×	×	✓	✓	One field observation record not dated. This is a nationally scarce beetle species.
	Rhizophagus nitidul beetle	*Rhizophagus nitidul*	×	×	✓	✓	One field observation record not dated. This is a nationally scarce beetle species.
	Tarsostenus univittatus beetle	*Tarsostenus univittatus*	×	×	✓	✓	One field observation record not dated.
	Meadow beetle	*Xylostiba monilicorn*	×	×	✓	✓	One field observation record not dated. This is a nationally scarce beetle species.
Plants	Floating Water Plantain	*Luronium natans*	×	×	✓	✓	One field observation, record not dated.
Plants **(Schedule 9)**	Canadian Waterweed	*Elodea canadensis*	×	×	✓	✓	There are thirteen records dating from 1978 to 1981 of field observations.
	Japanese Knotweed	*Fallopia japonica*	×	✓	✓	✓	There are eleven field observation records dating from 1981 to 2016.
	Himalayan Balsam	*Impatiens glandulifera*	×	×	✓	✓	There are five records of field observations dating from 1978 to 2005.

The records obtained from West Yorkshire Bat Group for **Land off Parkwood Road, Golcar** are as follows:

Table 2: Summary of bat records held by West Yorkshire Bat Group within 2km of the site.

Taxonomic Group	Common Name	Scientific Name	On site	Within 500m	Within 1km	Within 2km	Notes
Bats	Bat Species	*Chiroptera*	×	×	✓	✓	There are eight records dating from1996 to 2007. Four of these are of possible roosts, One maternity roost. One excluded roost and one unclassified bat roost with one record of a grounded juvenile bat.

	Natterer's bat	*Myotis nattereri*	×	×	✓	✓	There is one field record of an adult bat dating from 1985.
	Common Pipistrelle	*Pipistrellus pipistrellus*	×	✓	✓	✓	There are two records dating from 1999 to 2001. One record of a possible bat roost. The other record is dated 1999 of a maternity bat roost.
	Pipistrelle Bat Species	*Pipistrellus Sp.*	×	×	✓	✓	There are four records dated from 2000 to 2006.One record is of an unclassified bat roost, one an excluded roost and one of a maternity roost of 21 to 50 adult bats. There was one adult casualty injury not stated.

There were fifteen records of four bat species within 2km of the site. There were three maternity roosts one of an unknown bat species (Chiroptera), one of a Pipistrelle bat species (*Pipistrellus Sp*.) within 2km and one record of a Common Pipistrelle bat (*Pipistrellus pipistrellus*) within 500m of the site. There are two excluded roosts one of a Pipistrelle bat species (*Pipistrellus Sp*.) and one an unknown bat species (Chiroptera) within 2km site. There were five possible bat roosts of one of a Pipistrelle bat species (*Pipistrellus Sp*.) and four of unknown bat species (Chiroptera). There is one field record of a Natterer's bat (*Myotis nattereri*) and one record of a grounded unknown bat species (Chiroptera).

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3.2 Nature Conservation Designations

Statutory Nature Conservation Sites

3.2.1 There are no statutory nature conservation sites within the site boundary or within 2km of the site.

Non-Statutory Nature Conservation Sites

3.2.2 There are no non-statutory nature conservation sites within the boundary of the site.

3.2.3 The search revealed three non-statutory conservation sites within 2km of the site, which can be seen in **Table 3** below.

Table 3: Non-statutory designated sites with 2km of the site.

Name	Designation	Description	Distance from Site
Huddersfield Narrow Canal	Local Wildlife Site (LWS)	An inland waterway with a range of species growing and using the canal, some of these species include:*Typha latifolia*, *Phalaris arundinacea*,,*Equisetum fluviatile*, *Juncus effuses*, *Potamogeton, Carex, Chrysosplenium oppositifolium.* A Kingfisher and Otter spraint have been observed. The scares species *Luronium natans* has been recorded here. The canal path offers opportunities for people on and off the canal to view wildlife.	1.8 km south-east

Shaw Wood	Local Wildlife Site (LWS)	An ancient woodland in a steep sided ravine. The canopy is a mixture of *Quercus petraea, Acer pseudoplantanus, Fagus sylvatica* and *Fraxinus excelsior*. The structure of the wood is seedling through to mature trees. The understory is *Ilex aquifolium* and hazel with occasional *Sorbus aucuparia*, *Sambucus nigra* and *Salix caprea* and rare hawthorn. Ground flora is *Hyacinthoides non-scripta* with 40% to 85% coverage. There is *Holcus mollis, Luzulz sylvatica, Mercurialis perennis with occasional Amenone nemorosa, Lonicera periclymenum, Rubus fruitcosus, Dryopteris filix-mas, Vaccinium myrtillus, Blechnum spicant, Geum urbanum, Pteridium and Anthoxanthum odoratum*. There are exposures of sandstone on both side of brook with *Chrysosplenium oppostifolium, Oxalis acetosella*, and Polytrichum moss.	1.2km north-west
Old Lindley Moor, Huddersfield	Local Geological Site (LGS)	Rough rock sandstone of Carboniferous age (Namurian Epoch) is exposed along a 400m length of natural scars and abandoned quarry workings at Old Lindley Edge. At the east and near the road are exposed bedded sandstones with occasional siltstone. The exposure has a range of sedimentary structures and plant fossils including rounded quartz pebbles in graded beds.	1.8km north

3.2.4 The site is within the Kirklees Wildlife Habitat Network and Bat Alert Zone.

3.2.5 Within 1.12km of the site is ancient semi-natural woodland/ancient replanted woodland.

3.3 Site Assessment Results

3.3.1 The site was surveyed on 5/3/2019 by Amanda Beck Cert/HE in Field Ecology, Diploma in Field and Conservation Ecology, Qualifying CIEEM Member. Survey conditions are summarised in **Table 4**.

Table 4: Survey times and weather conditions.

Survey date	Lead surveyor	Temp	Humidity	Wind speed/Direction		Cloud Cover	Precipitation
5/3/2019	Amanda Beck	4℃	84%	13mph	SW	60%	None

3.3.2 The site comprises of amenity grassland surrounded by stone walls to the north, north-east and partly to the west. With a stone wall separating the site in half (see **Appendix 3 photo 13**). Young trees sit either side of this wall (see **Appendix 3 photo 12**). There is public access onto the land from Parkwood Road (see **Appendix 3 photo 1**) with a walked track around the grassland. There are numerous scattered trees to the north and east with two of these trees having dense ivy on them (see **Appendix 3 photo 5**). There is dense ivy protruding over the boundary from a neighboring garage (see **Appendix 3 photo 4**). Young trees also sit either side of the stone wall in the centre of the site (Young trees also sit either side of the stone wall in the centre of the site (see **Appendix 3 photo 12**). From the centre of the site the land slopes downwards and in the corner is a higher density of trees and bramble to the south-east (see **Appendix 3 photo 3**).

3.3.3 There is a beech hedgerow (see **Appendix 3 photo 2**) from the west boundary to the middle of the site. The rest of the western boundary and southern boundary is fenced off with Ferris fencing from the building construction site adjacent to the proposed development site (see **Appendix 3 photos 7 & 10**). Tall ruderals are scattered across the grassland in clumps with a larger density to the northern and southern half of the amenity grassland (see **Appendix 3 photos 6 & 9**). The land slopes downward towards the south of the site (see **Appendix 3 photo 14**).

Habitats Present

3.3.4 The following habitat types are present at **Land off Parkwood Road, Golcar**: Amenity grassland, buildings, fence, and hard standing. Please see **Table 5** below for detailed descriptions of each habitat present on site and the species recorded during the time of the survey.

Table 5: Habitats present on site (classified in accordance with the JNCC guidelines)

Habitat Type/Feature	Species Present	Other Observations	Target Notes
Amenity Grassland	Meadow grass (*Festuca pratensis*), Soft Rush (*Juncus effuses*), Perennial Ryegrass (*Lolium perenne*)	Grass mainly in middle of site, with walking tracks around the site.	None
Hedgerow	Beech (*Fagus sylvatica*)	Situated to the west in the first half of the field.	None
Fencing	N/A	Ferris fencing to the east, south and south-eastern corner of the site backs onto Barratts construction site.	None
Dense Scrub	Bramble (*Rubus fruitcosus*)	To the south-east of the site. Numerous bird species observed.	Target Note 1. Birds in dense scrub.
Scattered Broad Leaved-Trees	Oak, Beech, Silver Birch, Goat Willow	Trees are mainly scattered to northern boundary, with a denser group to the south-east near to brambles. Birds seen using the trees to perch on and sing. To the centre of the site are a cluster of young trees in a line along the stone wall. To the north the trees are covered in dense ivy.	Target Note 2 Birds in trees. Target Note 4. Dense ivy on trees.
Tall Ruderals	Creeping thistle (*Cirsium arvense*) Common Hogweed (*Heracleum sphondylium*), Ragwort (*Jacobaea vulgaris*), Broad leaved docks (*Rumex obtusifolius*),	Scattered among grassland and growing to northern and southern boundaries around the edges of the grassland.	None
Walls	N/A	Stone across the middle of the site and to the north boundaries of the site.	None

Target Note 3: Offsite neighbouring garage with dense ivy covering the back and side of the structure that is coming over the boundary in the north of the proposed development site.

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Fauna Species Encountered

3.3.5 The following species were either seen, heard or evidence of their presence was found during the site investigation:

- Long Tailed Tit (*Aegithalos caudatus*) x3
- Oak gall wasp (*Andricus kollari*).
- Wood Pigeon (*Columba palumbus*).
- Carrion Crow (*Corvus corone*) x3.
- Blue Tit (*Cyanistes caeruleus*).
- Robin (*Erithacus rubeculs*).
- Great Tit (*Parus major*).
- Tree Sparrows (*Passer montanus*) x5.
- Magpie (*Pica pica*) x5
- Mole Hills (*Talpa europaea*).
- Blackbird (*Turdus merula*).

Invasive Plant Species

3.3.6 No invasive plant species were found at this site whilst conducting the site investigation.

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4. Discussion and Interpretation of Results

4.1 Nature Conservation Designations

4.1.1 No designated nature conservation sites are located within the boundary of the site.

4.1.2 There are no statutorily designated conservation sites within 2km of the site.

4.1.3 There are three non-statutorily designated sites within 2km of the site. The nearest being 1.2km Huddersfield Narrow canal that runs south-east and is a Local Wildlife site known for its Floating Water Plantain, Otters and Kingfishers. 1.6km north-west is Shaw Wood a Local Wildlife Site with an ancient woodland with flora species and mosses and 1.8km north is Old Lindley Moor a Local Geological Site that contains plant fossils and rock exposures.

4.1.4 The proposed development will not have an effect on these sites because there is no suitable habitat for Floating Water Plantain, Otters or Kingfishers to use. Due to the distance of all sites being over 1km, roads, residential and commercial business break up the connectivity to the proposed development site. it is unlikely that the transfer of seeds from trees and flora via wind or pollinating species will not cross pollinate between sites.

4.1.5 The proposed development **Land off Parkwood Road, Golcar** will therefore have a negligible impact on local non-statutorily designated sites. It is unlikely to impact on linear connecting features and habitat connectivity. It will not remove priority habitats for biodiversity/local wildlife populations.

4.2 Priority and Protected Habitats

4.2.1 The site contains the following habitats: Amenity grassland, hedgerow, fencing dense scrub, scattered broad leaved trees, tall ruderals and walls.

4.2.2 The site does contain a Kirklees Local Biodiversity Action Plan (LBAP) habitat of scrubland. This will be removed during the proposed development plan. This will result in the loss of habitat, nesting opportunities and food for birds

4.3 Priority and Protected Species

4.3.1 Amphibians: There were twenty-eight records of Common Toad (*Bufo bufo*), eighteen records of Common Frog (*Rana temporaria*) within 1km of the site. There are two records of Palmate Newts (*Lissotriton helveticus*) within 500m of the site. The site does not contain the required aquatic habitats suitable for breeding amphibians such as toads, frogs or newts. The nearest water body is the mill pond 48m away from the site. The site does not contain any terrestrial habitats suitable for supporting over-wintering amphibians. The site is unlikely

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to support amphibians.

4.3.2 Badgers: There is one record of a Badger within 1km of the site. The site does contain the steep embankments to support sett creation. The site is connected to habitats and is bordered on all sides by residential dwellings. The site is currently unoccupied but the neighboring gardens on all sides of the proposed development have light and noise disturbance. It is unlikely badgers are present on the site or rely on the site as a key foraging habitat due to the site been fenced off restricting the movement of badgers.

4.3.3 Barn Owls: The data search did not reveal any records of Barn Owls within 2km of the site. Barn Owls require a mixed habitat including rough grassland, field margin strips, set aside and ditches/watercourses for hunting. Barn Owls require between 1 and 47 hectares of suitable roosting and hunting habitats, as stated by the Barn Owl Conservation Trust, barnowltrust.org.uk, accessed April 2018. The proposed development site does not contain the required open grassland habitats for foraging, or barn style buildings for roosting. The site is unlikely to support Barn Owls.

4.3.4 Bats: The data search from West Yorkshire Ecology Service and West Yorkshire Bat Group revealed fifty bat records of eight bat species within 2km of the site, these species included: Bat species (Chiroptera), Whiskered bat (*Myotis mystachinus*), Natterer's bat (*Myotis nattereri*), Leisler's bat (*Nyctalus leisler*), Noctule bat (*Nyctalus noctule*), Pipistrelle bat (*Pipistrelle Sp.*), Common Pipistrelle bat (*Pipistrellus Pipistrellus*), Soprano Pipistrelle bat (*Pipistrellus pygmaeus*) and Brown Long-eared bat (*Plecotus auratus*). Only one bat record was recorded within 500m of a Common Pipistrelle (Pipistrellus pipistrellus) maternity bat roost. The grassland offers foraging opportunities with tree lines across the site ideal for commuting bats. The site is likely to support foraging and commuting bat species.

4.3.5 Dormice: The data search did not reveal any records of Hazel Dormice within 2km of the site. Dormice are usually found in deciduous broadleaved woodland habitats, and are vulnerable to habitat fragmentation and disturbance. Dormice are found primarily in the south of England. Dormice populations have plummeted in recent years, with their range in the UK shrinking rapidly and population numbers continuing to decline. West Yorkshire is outside of their known habitat range, as stated in the *Dormouse Conservation Handbook, second edition, written by Paul Bright, Pat Morris and Tony Mitchell-Jones, 2006.* There are no known Dormouse reintroduction sites within 5km of the proposed development site. It is unlikely that the proposed development site supports Dormice.

4.3.6 Invertebrates: The data search revealed four field record of invertebrates Musk Beetle (*Aromia moschata*), *Rhizophagus nitidul*, *Tarsostenus univittatus* and

Xylostiba monilicornis within 1km of the site. The site does not have the required habiats for musk beetle these beetles

4.3.7 Nesting Birds: The data search revealed seventy-three records of birds within 2km of the site none of the bird records were within 500m of the site. Six of these records were of Schedule 1 birds: Kingfisher (*Alcedo atthis*), Redwing (*Turdus iliacus*) and Fieldfare (*Turdus pilaris*). The site has grassland, trees, dense scrub and a hedgerow that are suitable for foraging and nesting. Birds were seen in the trees and dense scrub during the survey. The site is likely to support feeding and nesting birds.

4.3.8 Otters: The data search did not reveal any records of Otter within 2km of the site boundary. Otters have been recorded as exploiting virtually all types of water and waterway in the UK. Although populations in England and Wales are confined mainly to fresh water, they readily exploit suitable coastal habitats in Scotland as well as elsewhere. Otters require vegetation along bank sides, and prefer tree lined/wooded bank areas *(Ecology of the European Otter, Conserving Natura 2000 Rivers 2010).* The site does not contain the water bodies and riparian habitats required to support breeding or hunting Otters. It is unlikely Otters are using the site.

4.3.9 Plants: There are twenty-nine records of invasive plant species within 2km -: Canadian Waterweed (*Elodea canadensis*), Japanese Knotweed (*Fallopia japonica*) and Himalayan Balsam (*Impatiens glandulifera*). There is one record of Floating Water Plantain (*Luronium natans*) within 1km of the site. No invasive plant species were found during the survey and there were no water bodies suitable for *Luronium natans*. It is unlikely that these species will be present on site.

4.3.10 Reptiles: The data search revealed two records of reptiles within 919m of the site boundary. Reptiles rely on conditions that allow them to maintain their body temperature. They need to be able to bask and also to be able to avoid extremes of temperature. Reptiles require a mosaic of habitat, including grassland, bare ground and refugia piles/areas, preferring habitats where Bracken is sparse and tree numbers are low *(Habitat Management for Reptiles, Amphibian and Reptile Trust ARC, accessed 2018).* The site does not contain the range of habitats and interconnectivity required to support reptiles. It is unlikely reptiles are present on site.

4.3.11 Water Voles: Water voles generally prefer channels with slow flowing water and steep sided banks, ideally around 45-60 degrees, to enable them to burrow successfully into them. They burrow up to two meters into the banks, and usually have more than one entrance. One entrance is often at the water level to give access to the burrow quickly for refuge, with a second often located higher up to allow access should the water level increase. Water voles are very

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sensitive to changes in water levels and the need to escape when they rise. Water voles generally prefer watercourses with swards of dense vegetation along the banks and within the channel, to provide both refuge and food. Although they are omnivorous, the diet of water voles is almost completely vegetarian, and comprises a wide range of grasses, reeds, tall ruderal, marginal and emergent vegetation (*Water Vole Conservation and Management, 2016*). The site does not contain the required aquatic habitats and riparian corridors of vegetation to support Water Vole. It is unlikely that Water Vole are present on site.

4.3.12 West European Hedgehog: The data search revealed no records of hedgehogs within 2km of the site boundary. The sites dense scrub is likely to support nesting and breeding hedgehogs with the grassland habitat offering some foraging opportunities for hedgehogs. The development is likely to impact on the available foraging and nesting habitat for hedgehogs and restrict movement of hedgehogs locally.

4.3.13 White Clawed Crayfish: The data search did not reveal any records of White Clawed Crayfish within 2km of the site boundary. White Clawed Crayfish require slow flowing waterbodies, high quality water of pH 6.8-8.6, rocks, debris, rubble or submerged vegetation for breeding purposes. White Clawed Crayfish are limited in their range as they are unable to travel significant distances over terrestrial habitats as stated in Guidance on Habitat for White-clawed Crayfish and its Restoration by Stephanie Peay, July 2002. The site does not contain the required waterbody to support White Clawed Crayfish; therefore, it is unlikely the site supports this species.

4.3.14 Signal Crayfish: The data search revealed four records of Signal Crayfish within 1km of the site boundary. Signal Crayfish occur in still and slow-flowing freshwater such as rivers, streams, lakes, reservoirs and canals. Signal Crayfish can tolerate slightly salted water. Taking shelter under rocks and boulders within tree roots or in burrows in cavities within banks (taken from *Inland Waterways Association Signal Crayfish accessed 19/3/2019*). The site does have the required aquatic habitats associated with Signal Crayfish and there are no banks or cavities to burrow into, therefore, it is unlikely that the site can support Signal Crayfish.

*The absence of any signs of or features considered valuable for supporting protected species, **cannot** be considered evidence that these species are absent from a site, or that these species will not occupy the site in the future. It must therefore always be recommended that work be conducted with care and vigilance. Should any protected species be encountered during work (please see **Appendix 7**), work should stop immediately and JCA or Natural England contacted.*

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4.4 Invasive Species

4.4.1 Invasive plant species are those plants listed under Schedule 9, Part II of the Wildlife and Countryside Act 1981 (as amended) or described on the Non-Native Species Secretariat (NNSS) website. Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to plant or cause the spread of Invasive Plant Species in the wild and therefore it is a legal obligation to remove them.

4.5 Impacts of Proposed Development

4.5.1 **Table 6** below summarizes the likely impacts the proposed development will have on protected species present/likely present on site:

Table 6: The indicative potential impacts of the proposed development on protected species likely and/or found to be present on site.

Species	Negative Impact (includes scale and nature of impact)
Amphibians	None perceived
Barn Owls	None perceived
Bats	The building on site has potential to support roosting bats species. Additional Emergence/re-entry surveys will be required on the residential dwelling. This will determine whether the development will result in the direct loss of bat roosts, and if so appropriate mitigation must be designed with the provision of new roosting opportunities in the form of integral bat boxes must be incorporated into the proposed development plans to ensure no long term net loss of potential roosting sites and to provide new roosting opportunities to improve the habitat on site for bats. Exterior lighting must be pre-approved and agreed upon with he local county ecologist or project ecologist. The lighting must follow guidance given by BCT to ensure no long-term detrimental impacts on bat commuting and foraging behaviour as a result of the development.
Badgers	None perceived
Dormice	None perceived
Invertebrates	None perceived
Nesting Birds	If vegetation removal takes place between April to September, then a Nesting bird survey will be required by a competent Ecologist. Bird boxes will be installed to ensure there is no loss of nesting opportunities.
Otter	None perceived
Plants	None perceived
Reptiles	None perceived
Water Vole	None perceived
White-clawed Crayfish	None perceived
Other Species	Hedgehogs are likely to be negatively impacted by the development. Hedgehog holes and corridors are to be incorporated into fencing in the development plans to limit the impact of the development on hedgehogs and ensure there are no long-term detrimental impacts on hedgehogs foraging, commuting and nesting habitats.

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NB: The overall impact of the proposed development is based upon plans provided by Parkwood Ventures LLP and Sir Robert Ogden Estates Ltd, see drawing: 00-002 Rev F dated 27/3/2019 as included in **Appendix 2.** *This report has been compiled and produced by JCA Ltd, and accounts for and assesses the likely impacts on local wildlife populations and biodiversity that is to occur as a result of the development given in* ***Appendix 2.*** *Should these plans change then this report will need revising and the potential impacts re-evaluating.*

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5. Conclusions

5.1 JCA Ltd were commissioned to carry out a Preliminary Ecological Appraisal Survey and related report by Parkwood Ventures Ltd and Sir Robert Ogden Estates Ltd in order to determine the potential impacts of the proposed development on on-site habitats, species and local priority habitats at **Land off Parkwood Road, Golcar**.

5.2 The site was surveyed on the 5/3/2019 by Amanda Beck.

5.3 After conducting a thorough site investigation and a detailed Desktop Study, we consider **Land off Parkwood Road, Golcar** to contain habitats of moderate ecological value (please see **Section 3.5**).

5.4 The site is not situated within influencing distance of any designated Conservation Sites.

5.5 The site is not situated within influencing distance of non-statutorily conservation sites.

5.6 The site contains the following habitats of low conservation ecological value: Amenity grassland, broad leaved trees and dense scrub that has the potential to support foraging and commuting bats along with nesting birds and nesting habitat for hedgehogs. Due to the nature of the development all the habitats will be impacted on by the development but by landscaping planting of native trees with rich pollen nectar flowering plants and integral faunal boxes the site can be greatly enhanced with mitigation work.

5.7 No invasive species were found on site.

Summary: The site has low potential for commuting and foraging bats, nesting and feeding birds. The dense scrub is ideal for nesting hedgehogs and birds and provides food for birds. To enhance the proposed development faunal boxes for birds, bats and hedgehogs must be incorporated into the development plans along with hedgehog pathway holes put into any fencing on site.

Additional survey work will be required for bats. Transect activity surveys are needed to determine presence/absence of foraging and commuting bats and how they are using the site. If trees and dense scrub are to be removed during the bird nesting period or hedgehog nesting period, then surveys will be required for these species.

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6. Recommendations

5.8 Based on the findings outlined in this report the following recommendations are made:

- **Bats:** Activity surveys will be required to determine how bats are using the site to forage and commute. Transect activity surveys are conducted either at sunset and up to 3 hours after or 2 hours before sunset. Due to the lifecycle of bats transect surveys are conducted between the months of April through to October. Surveys assessed areas of potential foraging and commuting habitat that may be affected by the proposed development. Based on this, transects have are designed based on covering a suitable extent and diversity of habitats, as well as ease of accessibility. These transects are walked at a steady pace and data recorded including number of bats, flight direction, flight height and behaviour. Automated detectors are used to analysis species using the site.

- As the site has been considered to have low potential of supporting bat foraging and commuting, **3** transect surveys will be required with **2** surveyors to cover all habitats of the site. One survey should be carried out between April to May, one survey between June to August and one survey between September to October.

- **Birds:** Trees and dense scrub located around the site have the potential to support nesting birds any vegetation clearance must be conducted outside the nesting bird breeding season which runs approximately between March to August. A nesting bird survey will be required prior to the removal of vegetation if this work is to be carried out during the bird breeding season. This survey must be carried out by a qualified ecologist.

- **Hedgehogs:** A hedgehog method statement is required for the removal of dense scrub on site. To ensure there is no impact on the local hedgehog population and breeding hedgehogs on site.

- **Lighting design:** Where lighting is required, conditions must be imposed to ensure the impact on wildlife is kept to a minimum. Lighting will be situated away from areas of both retained and new trees and hedgerows. Where possible lighting that can be dimmed or sensor lighting must be used as this reduces light spill onto the site and ensure dark corridors are created for light shy bat species to forage and commute.

- **Faunal Box installation:**

- Birds: Sparrow nest boxes and bird boxes for Robins, Blackbirds and Blue tits must be included in the new development.

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- Bats: Integral bat boxes must be incorporated into new buildings to give roosting opportunities to bat species.

- Hedgehogs: Hedgehog holes 13 x 13 cm must be incorporated into any new fencing been erected to allow for the movement of hedgehogs on site.

- **Biodiversity Enhancement Plan**: A Biodiversity Enhancement Plan is recommended and must be designed pre-construction and be implemented post construction during the landscaping phase of the development. This plan will aim to ensure there is no net loss of habitats on site and to increase biodiversity and opportunities for wildlife on site, due to the result of the proposed development. The biodiversity enhancement plan will aim to provide opportunities for local wildlife to ensure the development does not have a significant detrimental impact on local or national wildlife populations. The Biodiversity Enhancement Plan should include:

- Quantities and locations of faunal boxes for bats, birds and hedgehogs.

- Native shrub/tree/grass/hedgerow planting.

- Gaps in fencing to allow movement for hedgehogs and other small mammals

- Low level ‘wildlife friendly’ lighting options and lighting buffer zones

- Management scheme on vegetation clearance.

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5. References

Guidelines for surveys and report writing:

British Standards Institute (BSI), (2013) *BS 42020:2013, Biodiversity - Code of practice for planning and development*. London.

Chartered Institute of Ecology and Environmental Management (CIEEM), (2015) *Guidelines for Ecological Report Writing*. Winchester.

Joint Nature Conservation Committee (JNCC), (2010) *Handbook for Phase 1 habitat survey: A technique for environmental audit*.

Websites:

Advice on protected species is consolidated at:
Environmental management: Wildlife and habitat conservation - GOV.UK (2016) *Gov.uk*. Available at: https://www.gov.uk/topic/environmental-management/wildlife-habitat-conservation (Accessed: 21 September 2016).

Magic Map Application (2016) *Magic.defra.gov.uk*. Available at: http://magic.defra.gov.uk/MagicMap.aspx (Accessed: 21 September 2016).

The RSPB (2016). Available at: http://www.rspb.org.uk/ (Accessed: 21 September 2016).

Surveys and mitigation plans: protected species - Detailed guidance (2015) *Gov.uk*. Available at: https://www.gov.uk/guidance/surveys-and-mitigation-plans-protected-species (Accessed: 21 September 2016).

Within this detailed guidance on surveys and mitigation information is available on the following protected species:

- Bats
- Natterjack toads
- Otters
- Reptiles
- Water voles
- White-clawed crayfish
- Wild birds
- Hazel dormice
- Great crested newts
- Badgers

Wildlife licences: when you need to apply - Detailed guidance (2014) *Gov.uk*. Available at: https://www.gov.uk/guidance/wildlife-licences (Accessed: 21 September 2016).

Within this detailed guidance on licensing information is available on licences for the following protected species:

- Bats
- Natterjack toads
- Otters
- Reptiles
- Water voles
- White-clawed crayfish
- Wild birds
- Hazel dormice
- Great crested newts
- Badgers

As well as:

- Non-native Bumblebee species
- Deer
- Freshwater fish
- Invertebrates
- Mink, coypu, muskrat and grey squirrel
- Plants

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Species Specific Information:

Badgers:
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Competencies for Species Survey: Badger, Chartered Institute of Ecology and Environmental Management CIEEM, 2013. Accessed 2018-06-21

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Bat Conservation Trust, (2007) Bats, Development & Planning in England. London.
Mitchell-Jones, A. and McLeish, A. (ed.). (2004) Bat Workers' Manual. 3rd ed. JNCC.
The Bat Worker's Manual, Anthony J. Mitchell-Jones, 2015
Bats: surveys and mitigation for development projects, https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects Accessed 2018-06-21
Guidance note 8: bats and artificial lighting in the UK, bats and the built environment series, Bat Conservation Trust and ILP, produced 2018, accessed November 2018. https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/
Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition, Bat Conservation Trust, written 2016

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Bright, P., Morris, P. and Mitchell-Jones, A. (1996) The dormouse conservation handbook. Peterborough: English Nature.

Great Crested Newts:
Langton, T., Beckett, C. and Foster, J. (2001) Great Crested Newt Conservation Handbook. Halesworth: Froglife. pdf
Advice note 4 (revised) - Amphibian Disease Precautions, A Guide for UK Fieldworkers, Amphibian and Reptile Conservation trust, 2017. Accessed 2018-06-21

Otters: *Natural England, (2007) Species Information Note SIN006, Otter: European protected species.*

Reptiles and Amphibians:
Baker, J., Beebee, T., Buckley, J., Gent, T. and Orchard, D. (2011) Amphibian Habitat Management Handbook. 1st ed. Bournemouth: Amphibian and Reptile Conservation.
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Strachan R, (1998), Water Vole Conservation Handbook,. Wildlife Conservation Research Unit, University of Oxford, Oxford. Strachan R, and Moorhouse, T. (2006),
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Strachan, R. (2009), Populations and Persistence – Developing a Strategy for Conserving Water Voles in the UK, Presentation to Warwickshire Wildlife Trust, 2nd April 2009, Environment Agency, Wales
Strachan, R. and Holmes-Ling, P (2003), Restoring water voles and other biodiversity to the wider countryside. Wildlife Conservation Research Unit, Oxford.
Strachan, R., Moorehouse, T. and Gelling, M. (2011), Water Vole Conservation Handbook, 3rd Edn, WILDCRU

White-clawed Crayfish:
Peay, S. (2002) Guidance on Habitat for White-clawed Crayfish and its Restoration. Kendal: English Nature

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Signal Crayfish:
Inland Waterways Association Signal Crayfish accessed 19/3/2019

Relevant Legislation:
Wildlife and Countryside Act 1981, (c. 69) (as amended). Available at:
http://www.legislation.gov.uk/ukpga/1981/69
(Accessed: 21 September 2016)
Countryside and Rights of Way Act 2000 (c.37). Available at:
http://www.legislation.gov.uk/ukpga/2000/37/contents
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The Conservation of Habitats and Species Regulations 2017. Available at:
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(Accessed: 08 January 2018)
Conservation of natural habitats and of wild fauna and flora Council Directive (92/43/EEC) (The Habitats Directive) (as amended) Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043
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The Hedgerow Regulations 1997 (No. 1160). Available at:
http://www.legislation.gov.uk/uksi/1997/1160/contents/made
(Accessed: 21 September 2016)

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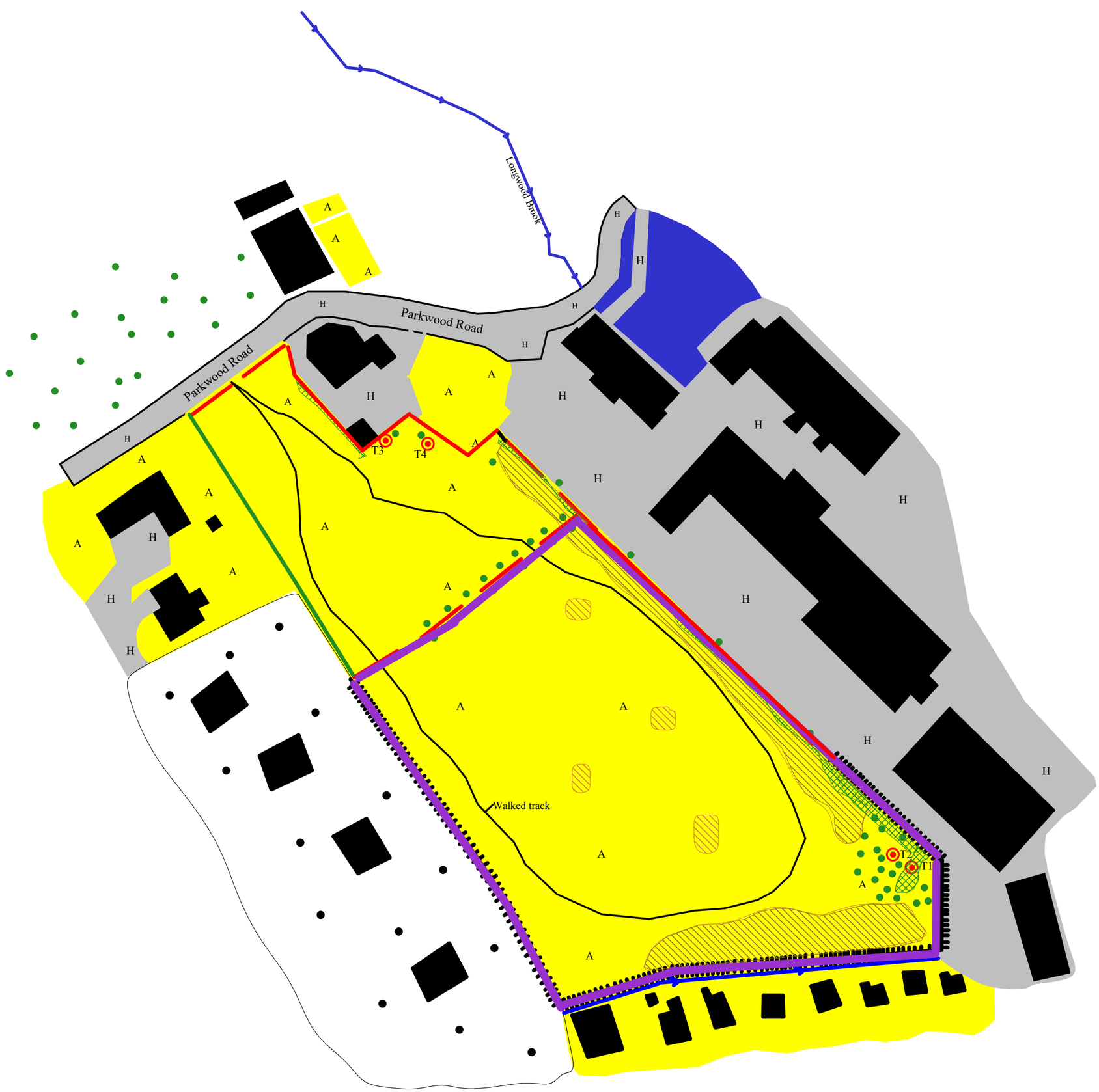
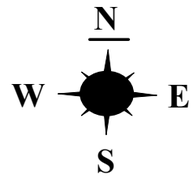
Appendices

Appendix 1: Phase 1 Habitat Map





Appendix 1: Phase 1 Habitat Map

Address: Land off Parkwood Road,
Golcar, Huddersfield, HD3 4TT
JCA Ref: 14823a/AmB Rev 1

NOT TO SCALE

KEY	
A	Amenity grassland
	Buildings
H	Hard standing
	Tall ruderal
	Scattered broad-leaved trees
	Bare ground
	Dense Scrub
	Wall
	Fence
	Intact hedge (Species-poor)
	Running water
	Standing water
	Proposed development area
	Target note

JCA Limited
Arboricultural & Ecological Consultants

Appendix 2: Proposed Development Plan

Appendix 3: Photographic Evidence

Photo 1: Entrance onto and off the site.

Photo 2: To the north-east of site entrance.

Photo 3: To north-west of site entrance.

Photo 4: Dense ivy on neighbouring garage.

Photo 5: Dense ivy on tree stumps on site.

Photo 6: Tall ruderals and bramble to northern boundary.

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Photo 7: north-eastern corner of site where birds seen in bramble.

Photo 8: Derelict mills across the road.

Photo 9: Southern boundary.

Photo 10: View to the south-east.

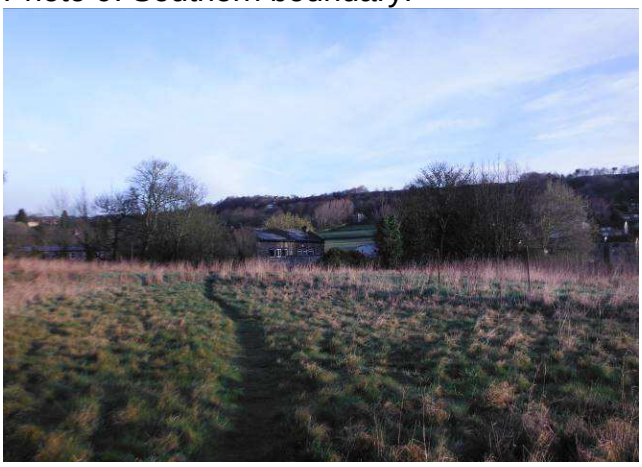

Photo 11: View looking towards centre of the site.

Photo 12: View looking north from centre of the site.

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Photo 13: Stone wall in centre of the site.

Photo 14: View from south looking north-west.

Photo 15: View north towards chimney off site.

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Appendix 4: Species List

To be submitted to the appropriate Local Records Centre

Site Name: Land off Parkwood Road,

Provided by: JCA Ltd

Grid Ref: SE102168

Verified by: Amanda Beck

Table 6: Complete list of species encountered during survey.

Common Name	Scientific Name	Number	Comment
Sycamore tree	*Acer pseudoplantanus*	N/A	None
Long Tail Tits	*Aegithalos caudatus*	3	In trees to the north-west of site.
Oak Marble Gall	*Andricus kollari*	N/A	None
Lady Fern	*Athyrium filix-femina*	N/A	None
Silver Birch	*Betula pendula*	N/A	None
Creeping Thistle	*Cirsium arvense*	N/A	None
Wood Pigeon	*Columba palumbus*	1	In grassland feeding
Carrion Crow	*Corvus corone*	1	Flying overhead
Blue Tit	*Cyanistes caeruleus*	1	In dense scrub to north-east
Cocksfoot	*Dactylis glomerata*	N/A	None
Robin	*Erithacus rubecula*	1	In dense scrub to north-east
Beech	*Fagus sylvatica*	N/A	None
Meadow Fescue	*Festuca pratensis*	N/A	None
Ash tree	*Fraxinus excelsior*	N/A	None
Cleavers	Galium aparine	N/A	None
Wood Avens	*Geum urbanum*	N/A	None
Common Ivy	*Hendera helix*	N/A	None
Common Hogweed	*Heracleum sphondylium*	N/A	None

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Common Holly	*Ilex aquifolium*	N/A	None
Ragwort	*Jacobaea vulgaris*	N/A	None
Soft rush	*Juncus effuses*	N/A	None
Perennial ryegrass	*Lolium perenne*	N/A	None
Honeysuckle	*Lonicera pericylmenum*	N/A	None
Daffodils	*Narcissus pseudonarcissus*	N/A	None
Great Tit	*Parus major*	1	In dense scrub to north-east
Tree Sparrows	*Passer montanus*	6	In dense scrub to north-east
Geranium species	*Pelargonium Sp.*	N/A	None
Magpie	*Pica pica*	1	Flying overhead
Burnet Saxifrage	*Pimpinella saxifrage*	N/A	None
Cherry Tree	*Prunus avium*	N/A	None
Oak Tree	*Quercus robur*	N/A	None
Meadow Buttercup	*Ranunculus acris*	N/A	None
Bramble	*Rubus fruitcosus*	N/A	None
Broad leaved docks	*Rumex obtusifolius*	N/A	None
Goat Willow	*Salix caprea*	N/A	None
Elder	*Sambucus nigra*	N/A	None
Lilac	*Syringa vulgaris*	N/A	None
Mole hills	*Talpa europaea*	7	In grassland
Dandelion	*Taxacum offcinale*	N/A	None
Blackbird	*Turdus merula*	1	Male bird in dense scrub to north-east
Common nettle	*Urtica dioica*	N/A	None

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Common Vetch	*Vicia sativa*	N/A	None
Common Dog Violet	*Viola riviniana*	N/A	None

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Appendix 5: Glossary

Activity surveys - are used to assess the level of bat activity at a site. This can be done either by using equipment such as an AnaBat device, or manually walking around a site with a heterodyne detector, documenting the number of bat passes and interceptions.

Dawn surveys - begin around 2 hours before and up to sunrise when bats are returning to their roosts from foraging, and swarming behaviour can be seen close to roost entrances.

Dusk surveys - begin around 30 minutes before sunset and up to 2 hours afterwards. These are done in order to see bats emerging from their roost sites at night.

Echolocation – is a system similar to sonar that allows bats to travel and forage even in total darkness. Bats make a call and then listen to the returning echoes in order to build up a map of their surrounding area. This allows bats to gauge the identity and distance of an object by how long the echo takes to return to them.

Habitat - the ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism.

Hibernation - is a state of inactivity and metabolic depression characterized by lower body temperature, slower breathing, and lower metabolic rate. Hibernating animals conserve energy, especially during winter when food is short, tapping energy reserves, i.e. body fat, at a slow rate.

Hibernacula - typically consist of underground sites, such as caves and cellars, which remain relatively cold and humid. Bats will hibernate to conserve energy over the winter months when falling temperatures cause a drop in the abundance of insects. These will typically be colonised around November to around March.

Insectivorous – is when an organism feeds exclusively on insects.

Nocturnal - a behaviour characterized by being active during the night and sleeping during the day.

Maternity roosts – colonised around late May early June and consist of mature females and their young. These roosts need to be warm and quiet, and are used up until around August, with females typically leaving first and then the young.

Mating roosts – mating begins around late October to November. Males of most species use special mating calls to attract females. These can include purrs, clicks and buzzing.

Roost – a site where bats live during the day, rear young and hibernate. These can be in man made structures, such as buildings, bridges, tunnels, cellars and mines, or natural features such as mature trees and caves.

Roosts in buildings – many types of buildings will be used by bats. The most likely sites are agricultural buildings (e.g. farmhouses and barns), buildings with exposed wooden beams (greater than 20cm thick), buildings with weather boarding and/or hanging tiles, and buildings close to woodland and/or water.

Roosts in trees – these are typically in mature trees with deep sheltered cracks, under loose sections of bark, or in woodpecker holes.

Species – a group of organisms in which all members can interbreed and produce viable offspring.

Summer roosts (non-breeding) - these are generally occupied by groups of males and immature females during the summer, and are usually only occupied for a short period before the group moves to another location.

Swarming – a behaviour exhibited by bats returning to their roost sites at dawn. Bats can be seen repeatedly flying to and from the roost entrance, making it much easier for consultants to identify where roosts are on a building or structure.

Temporary/Transitory roosts – These are used after hibernation (March – April) before mature females disperse to maternity roosts and male/immature females colonise summer (non-breeding) roosts. Similarly, temporary roosts form before hibernation (August -October).

Underground Roosts – these are typically used during the winter and can be mines, caves, tunnels or cellars.

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Appendix 6: Protected Species Information

The following species are protected under EU law, such as the Conservation (Natural Habitats, &c.) Regulations (2010):

- All UK bat species
- Dormouse
- Great Crested Newt and Natterjack Toad
- Large Blue Butterfly
- Otter
- Pine Marten
- Polecat
- Scottish Wild Cat
- Smooth Snake and Sand Lizard
- Various aquatic and plant species

These species are afforded the highest protection in the UK. Under this protection it is an offence to; deliberately capture, injure or kill any wild animal of a European protected species; deliberately disturb wild animal of any such species; deliberately take or destroy the eggs of such an animal, or damage or destroy a breeding site or resting place of such an animal.
In addition to this it is an offence to be in possession of, or to control, transport, sell or exchange, or to offer for sale or exchange, a European Protected species.

The following species are protected under UK law, such as the Wildlife and Countryside Act 1981:

- Badger
- Nesting birds
- Red Squirrel
- Reptiles (Adder, Common lizard, Grass snake, Slow worm)
- Water Vole
- White Clawed Crayfish
- Various bird species i.e. Barn Owl
- Various plant species

Therefore under this protection it is an offence to; kill, injure or take any of the above species.

Nesting birds are only protected during the breeding season whilst on their nest. In addition to the adults being protected, the eggs, young and nest itself whilst in use are protected.

The Wildlife and Countryside Act 1981 also contains measures to prevent the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 in England and Wales (e.g. Japanese Knotweed and Himalayan Balsam).

Badgers are protected under The Protection of Badgers Act 1992. Under this legislation it is an offence to; take, injure, kill, or cruelly ill-treat a badger; interfere with a badger sett; sell or possess a live badger; or mark or ring a badger.

The following habitat types are protected under UK Law:

- Habitats that are used by protected species
- Habitats that fall within designated sites
- Hedgerows
- Individual trees/woods can be protected under Tree Preservation Orders

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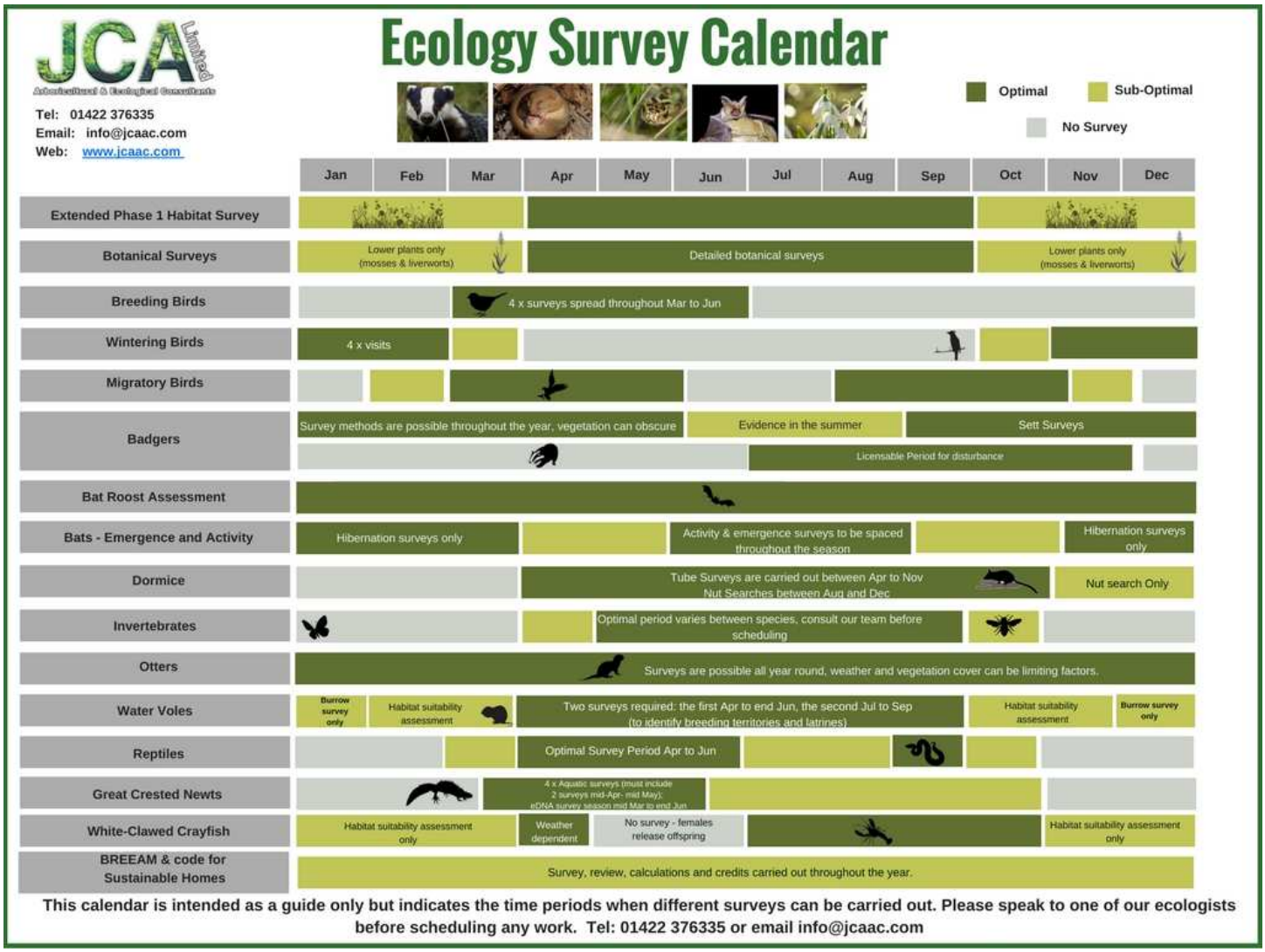
Appendix 7: Survey Calendar

Figure 2: Survey calendar for protected species and habitat surveys.



Appendix 8: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking
F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor.
Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 31 years' experience in the Arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. Jonathan has since developed JCA's portfolio of services and its extensive client base. He is a Chartered Biologist, a Chartered Arboriculturalist and an Expert Witness with much experience of litigation work.

Technical Director

Toby Thwaites
BSc (Hons), HND (Arboriculture).
Toby joined JCA in 1998 after graduating in Ecology at the University of Huddersfield and has since graduated in Arboriculture at the University of Central Lancashire. A former JCA team leader and Consulting Arboriculturist, Toby is now Technical Director and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Ecology

David Bodenham, Consultant Ecologist
BSc Ind (Hons) Zoology, MSc Biodiversity and Conservation.
An advocate of evidence-based conservation David's long-standing interest in the natural world and the conservation of our planet's biodiversity, led him to a career in conservation biology and ecology. He has worked for such institutions as the University of Leeds and the Discovery Channel and his work ranges from conservation research, to science education and film-making. After studying a BSc in Zoology (Ind) and an MSc in Biodiversity and Conservation, David gained the myriad of skills needed as a conservation biologist and ecologist. David has now worked as a consultant within the ecological industry for over 9 years with companies across the UK. David specialises in European Protected Species Licencing and Biodiversity Action Plans.
Licencing and accreditations: Natural England Bat Survey Level 2 - Class Licence CL18, Natural England Great Crested Newt Survey Level 2 - Class Licence CL09, CITB - Health, Safety and Environment CSCS
Memberships:British Ecological Society, British Arachnological Society, Bat Conservation Trust

Amanda Beck, Ecological Officer
Cert/He in Field Ecology, Diploma Field and Conservation Ecology, Qualifying CIEEM member.
Amanda joined JCA's ecology department in 2018, previously working as a freelance Ecological Consultant in North Wales and as a trainee Ecologist in South Wales. She has a background surveying botanical, amphibians, birds, terrestrial and marine mammals along with small mammal trapping and invertebrate research work on SSSI sites. She has practical experience in habitat management and creation when volunteering for North Wales Wildlife Trust. Amanda is currently studying for a MSc in Biological Recording and Ecological Monitoring with Manchester Metropolitan University. She is a member of the Butterfly Conservation Trust, Bat Conservation Trust, Botanical Society of Britain & Ireland and the British Hedgehog Preservation Society. Amanda is DBS checked and holds a Natural England level 1 bat licence and Natural England Level 2 Great Crested Newt licence and Great Crested Newt Licence for Wales.

Joe Earnshaw, Trainee Ecologist
BSc (Hons), MSc Biodiversity and Conservation.
Joe joined the ecology department of JCA in 2018 after taking part in JCA's student training programme. He initially obtained a bachelor degree in Animal Management from Askham Bryan College, York. He has since furthered his education and brings to the company an MSc in Biodiversity and Conservation from the University of Leeds. Joe has expertise in aquatic invasive species identification and control.

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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed

.....

Amanda Beck *Cert/He in Field Ecology, Diploma Field and Conservation Ecology, CIEEM member*
21st November 2019

Proofread by

.....
21st November 2019

Jonathan Cocking *F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor.*

For and on behalf of ***JCA Ltd***

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ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

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