

**UPDATED PHASE 1 HABITAT
SURVEY & REPORT
at
Land at Church Lane
Hoylandswaine
Penistone
South Yorkshire
S36 7JQ**

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1. Introduction

1.1 Justification for the Update

- 1.1.1 Since conducting the original survey the development area has increased to the north of the site. The additional footprint will contain a balancing pond and connecting infrastructure. This has altered the potential impact of the development which required survey and comment. The additional area included improved grassland fields with native hedgerow boundaries and a post harvest arable field also with a hedgerow boundary.

1.2 Purpose of the Report

- 1.2.1 A report is required for **Land at Church Lane, Hoylandswaine** to assess the ecological value of the site by documenting the habitat types present and the site's potential for supporting rare or protected species.

1.3 Terms of Reference

- 1.3.1 I am instructed by **Barratt Homes and David Wilson Homes** to visit the site and prepare my findings in a report.
- 1.3.2 For this purpose I have been supplied with a site map and brief details of the proposal.

1.4 Scope of the Report

- 1.4.1 This report is compiled in accordance with the Joint Nature Conservation Committee's (JNCC's) *Handbook for Phase 1 habitat survey - A technique for environmental audit* (Revised reprint 2010).

1.5 Site Description

- 1.5.1 **Land at Church Lane, Hoylandswaine** is situated 2.4km northeast of Penistone town centre, at grid reference: SE285052.
- 1.5.2 The site is located on the north western edge of the rural village of Hoylandswaine with agricultural grassland to the west, north and south. With woodland lying to the east beyond the village.

1.6 Development Proposal

- 1.6.1 A development of residential dwellings is proposed for this site. The development will also require the provision of a balancing pond which will lie in the north-west corner of the site.

2. Desktop Study

2.1 Methodology

- 2.1.1 A desktop study has been undertaken in order to obtain any relevant ecological records that may be present within a 1km radius of the site. This includes protected and notable species records, as well as nature conservation designations.
- 2.1.2 The Barnsley Biological Records Centre has been commissioned to provide the historical records for protected and notable species within a 1km radius from the site.
- 2.1.3 Species specific records from the South Yorkshire Badger Group and the South Yorkshire Bat Group were requested for a 2km radius of the site.
- 2.1.4 The National Biodiversity Network (NBN) Gateway website was used to obtain any protected species records that were recorded within the last 10 years, relating to this site. The NBN gateway website holds ecological records collected across the UK from a variety of sources and is available for public use. The website operates by dividing the country into a series of 10km square grids, and so the records held for the 10km grid containing the survey site (Grid SE20) has been reviewed.
- 2.1.5 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was used to locate any designated sites, such as; Local Nature Reserves (LNR), Special Area of Conservation (SAC) or Sites of Special Scientific Interest (SSSI), that may be present within 1km of the survey site.

2.2 Results

- 2.2.1 The faunal records supplied by the Barnsley Biological Records Centre in 2013 have been summarised in the table below. Flora records can be found at **Appendix 4**

Table 1: Summary of faunal data from the Barnsley Biological Records Centre

Group	Common Name	Scientific Name	No of Records	Most Recent Record
bird	Goshawk	<i>Accipiter gentilis</i>	1	1989
	Sparrowhawk	<i>Accipiter nisus</i>	6	2012
	Common Sandpiper	<i>Actitis hypoleucos</i>	1	1996
	Skylark	<i>Alauda arvensis</i>	6	2012
	Kingfisher	<i>Alcedo atthis</i>	1	1996
	Teal	<i>Anas crecca</i>	19	2010
	Wigeon	<i>Anas penelope</i>	3	2010
	Mallard	<i>Anas platyrhynchos</i>	6	2011
	Meadow Pipit	<i>Anthus pratensis</i>	3	2010
	Swift	<i>Apus apus</i>	1	1993
	Short-Eared Owl	<i>Asio flammeus</i>	1	1989
	Little Owl	<i>Athene noctua</i>	6	2010

bird	Pochard	<i>Aythya ferina</i>	22	1996
	Tufted Duck	<i>Aythya fuligula</i>	5	1997
	Canada Goose	<i>Branta canadensis</i>	5	2011
	Goldeneye	<i>Bucephala clangula</i>	2	1994
	Buzzard	<i>Buteo buteo</i>	3	2010
	Goldfinch	<i>Carduelis carduelis</i>	1	1994
	Redpoll	<i>Carduelis flammea</i>	2	1989
	Twite	<i>Carduelis flavirostris</i>	2	1989
	Siskin	<i>Carduelis spinus</i>	3	1997
	Treecreeper	<i>Certhia familiaris</i>	1	1997
	Little Ringed Plover	<i>Charadrius dubius</i>	1	1990
	Hawfinch	<i>Coccothraustes coccothraustes</i>	1	1989
	Stock Dove	<i>Columba oenas</i>	3	2011
	Rook	<i>Corvus frugilegus</i>	6	2012
	Jackdaw	<i>Corvus monedula</i>	4	2011
	Quail	<i>Coturnix coturnix</i>	1	1989
	Blue Tit	<i>Cyanistes caeruleus</i>	1	2011
	House Martin	<i>Delichon urbica</i>	2	1996
	Great Spotted Woodpecker	<i>Dendrocopos major</i>	3	2010
	Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	2	1989
	Yellowhammer	<i>Emberiza citrinella</i>	5	2012
	Merlin	<i>Falco columbarius</i>	2	1989
	Peregrine	<i>Falco peregrinus</i>	2	2012
	Hobby	<i>Falco subbuteo</i>	1	2012
	Kestrel	<i>Falco tinnunculus</i>	14	2012
	Pied Flycatcher	<i>Ficedula hypoleuca</i>	1	1988
	Chaffinch	<i>Fringilla coelebs</i>	1	1996
	Coot	<i>Fulica atra</i>	3	1993
	Snipe	<i>Gallinago gallinago</i>	1	1989
	Moorhen	<i>Gallinula chloropus</i>	5	2011
	Jay	<i>Garrulus glandarius</i>	1	2010
	Swallow	<i>Hirundo rustica</i>	5	1996
	Red Grouse	<i>Lagopus lagopus</i>	5	2011
	Common Gull	<i>Larus canus</i>	3	2011
	Lesser Black-Backed Gull	<i>Larus fuscus</i>	1	2012
	Black-headed Gull	<i>Larus ridibundus</i>	5	2011
	Crossbill	<i>Loxia curvirostra</i>	1	1989
	Corn Bunting	<i>Miliaria calandra</i>	1	1989
	Pied Wagtail	<i>Motacilla alba subsp. yarrellii</i>	4	2010
	Grey Wagtail	<i>Motacilla cinerea</i>	1	2010
	Spotted Flycatcher	<i>Muscicapa striata</i>	1	2005
	Curlew	<i>Numenius arquata</i>	8	2012
	Wheatear	<i>Oenanthe oenanthe</i>	3	2011
	Coal Tit	<i>Parus ater</i>	3	2011
	Blue Tit	<i>Parus caeruleus</i>	2	2011

bird	Willow Tit	<i>Parus montanus</i>	3	2010
	House Sparrow	<i>Passer domesticus</i>	2	1996
	Tree Sparrow	<i>Passer montanus</i>	6	2002
	Grey Partridge	<i>Perdix perdix</i>	2	2010
	Coal Tit	<i>Periparus ater</i>	1	2011
	Chiffchaff	<i>Phylloscopus collybita</i>	2	1996
	Wood Warbler	<i>Phylloscopus sibilatrix</i>	1	1989
	Willow Warbler	<i>Phylloscopus trochilus</i>	3	1996
	Magpie	<i>Pica pica</i>	3	2011
	Golden Plover	<i>Pluvialis apricaria</i>	2	2010
	Great Crested Grebe	<i>Podiceps cristatus</i>	22	1993
	Dunnock	<i>Prunella modularis</i>	2	1996
	Bullfinch	<i>Pyrrhula pyrrhula</i>	1	2010
	Goldcrest	<i>Regulus regulus</i>	3	2010
	Sand Martin	<i>Riparia riparia</i>	2	1989
	Woodcock	<i>Scolopax rusticola</i>	1	1988
	Turtle Dove	<i>Streptopelia turtur</i>	1	1989
	Starling	<i>Sturnus vulgaris</i>	5	2012
	Lesser Whitethroat	<i>Sylvia curruca</i>	2	2001
	Little Grebe	<i>Tachybaptus ruficollis</i>	3	1989
	Redshank	<i>Tringa totanus</i>	2	1996
	Fieldfare	<i>Turdus pilaris</i>	8	2010
	Ring Ouzel	<i>Turdus torquatus</i>	1	1988
	Mistle Thrush	<i>Turdus viscivorus</i>	5	2011
	Lapwing	<i>Vanellus vanellus</i>	10	2012
crustacean	Freshwater Crayfish	<i>Austropotamobius pallipes</i>	9	2012
	Signal Crayfish	<i>Pacifastacus leniusculus</i>	8	2012
insect - butterfly	Small Tortoiseshell	<i>Aglais urticae</i>	1	2011
	Orange Tip	<i>Anthocharis cardamines</i>	1	2006
	Meadow Brown	<i>Maniola jurtina</i>	3	2011
	Large White	<i>Pieris brassicae</i>	2	2010
	Small White	<i>Pieris rapae</i>	4	2011
	Red Admiral	<i>Vanessa atalanta</i>	1	2011
insect - caddis fly	Potamophylax latipennis	<i>Potamophylax latipennis</i>	1	2006
	Tinodes waeneri	<i>Tinodes waeneri</i>	1	2006
insect - hymenopteran	Agrypon flaveolatum	<i>Agrypon flaveolatum</i>	1	1979
	Netelia (Bessobates) cristata	<i>Netelia (Bessobates) cristata</i>	1	198
insect - moth	March Moth	<i>Alsophila aescularia</i>	1	1980
	Large Yellow Underwing	<i>Noctua pronuba</i>	1	2011
insect - true fly (Diptera)	Pedicia schummeli	<i>Pedicia schummeli</i>	1	1998
mollusc	Acanthinula aculeata	<i>Acanthinula aculeata</i>	1	1975
	Aegopinella pura	<i>Aegopinella pura</i>	1	1975
	Arianta arbustorum	<i>Arianta arbustorum</i>	1	1975
	Carychium minimum seg.	<i>Carychium minimum seg.</i>	1	1975
	Carychium tridentatum	<i>Carychium tridentatum</i>	1	1975

terrestrial mammal	Wood Mouse	<i>Apodemus sylvaticus</i>	1	1982
	Roe Deer	<i>Capreolus capreolus</i>	1	2012
	Bats	<i>Chiroptera</i>	2	2001
	Bank Vole	<i>Clethrionomys glareolus</i>	3	1982
	Hedgehog	<i>Erinaceus europaeus</i>	8	1987
	Brown Hare	<i>Lepus europaeus</i>	54	2004
	Badger	<i>Meles meles</i>	7	2012
	Field Vole	<i>Microtus agrestis</i>	1	1980
	House Mouse	<i>Mus musculus</i>	2	1996
	Stoat	<i>Mustela erminea</i>	1	1987
	Weasel	<i>Mustela nivalis</i>	1	1985
	Whiskered Bat	<i>Myotis mystacinus</i>	1	2000
	Pipistrelle	<i>Pipistrellus pipistrellus</i>	1	2008
	Brown Long-Eared Bat	<i>Plecotus auritus</i>	1	1997
	Brown Rat	<i>Rattus norvegicus</i>	1	1982
	Grey Squirrel	<i>Sciurus carolinensis</i>	40	1984
	Mole	<i>Talpa europaea</i>	4	2012

2.2.2 NBN Gateway records obtained for this site can be seen in the table below.

Table 2: Summary of protected and notable species recorded within the 10km grid square SE20

Group	Common Name	Scientific Name	No of Records	Most Recent Record
amphibian	Common Toad	<i>Bufo bufo</i>	3	2012
	Palmate Newt	<i>Lissotriton helveticus</i>	1	2008
	Smooth Newt	<i>Lissotriton vulgaris</i>	5	2012
	Common Frog	<i>Rana temporaria</i>	2	2012
	Great Crested Newt	<i>Triturus cristatus</i>	4	2012
bird	Common Kingfisher	<i>Alcedo atthis</i>	3	2013
	Meadow Pipit	<i>Anthus pratensis</i>	33	2013
	Tree Pipit	<i>Anthus trivialis</i>	4	2009
	Little Owl	<i>Athene noctua</i>	3	2010
	Bohemian Waxwing	<i>Bombycilla garrulus</i>	1	2009
	Barnacle Goose	<i>Branta leucopsis</i>	9	2011
	Dunlin	<i>Calidris alpina</i>	1	2009
	Lesser Redpoll	<i>Carduelis cabaret</i>	2	2012
	Linnet	<i>Carduelis cannabina</i>	43	2013
	Goldfinch	<i>Carduelis carduelis</i>	94	2013
	Greenfinch	<i>Carduelis chloris</i>	83	2012
	Common Redpoll	<i>Carduelis flammea</i>	5	2012
	Twite	<i>Carduelis flavirostris</i>	1	2008
	Siskin	<i>Carduelis spinus</i>	29	2013
	Treecreeper	<i>Certhia familiaris</i>	18	2013
	Little Plover	<i>Charadrius dubius</i>	3	2011
	Ringed Plover	<i>Charadrius hiaticula</i>	2	2010
	Black Tern	<i>Chlidonias niger</i>	1	2009
	White-throated Dipper	<i>Cinclus cinclus</i>	7	2011

bird	Cuckoo	<i>Cuculus canorus</i>	9	2011
	Blue Tit	<i>Cyanistes caeruleus</i>	68	2012
	Whooper Swan	<i>Cygnus cygnus</i>	1	2013
	House Martin	<i>Delichon urbicum</i>	17	2012
	Great Spotted Woodpecker	<i>Dendrocopos major</i>	45	2013
	Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	6	2010
	Yellowhammer	<i>Emberiza citrinella</i>	52	2013
	Reed Bunting	<i>Emberiza schoeniclus</i>	15	2012
	Robin	<i>Erithacus rubecula</i>	181	2013
	Kestrel	<i>Falco tinnunculus</i>	1	2009
	Swallow	<i>Hirundo rustica</i>	55	2013
	Common Grasshopper Warbler	<i>Locustella naevia</i>	2	2009
	Crossbill	<i>Loxia curvirostra</i>	8	2011
	Common Scoter	<i>Melanitta nigra</i>	2	2009
	White/Pied Wagtail	<i>Motacilla alba</i>	29	2013
	Pied Wagtail	<i>Motacilla alba subsp. yarrellii</i>	13	2013
	Grey Wagtail	<i>Motacilla cinerea</i>	23	2012
	Yellow Wagtail	<i>Motacilla flava</i>	1	2010
	Spotted Flycatcher	<i>Muscicapa striata</i>	13	2011
	Curlew	<i>Numenius arquata</i>	58	2013
	Wheatear	<i>Oenanthe oenanthe</i>	9	2011
	Great Tit	<i>Parus major</i>	133	2012
	House Sparrow	<i>Passer domesticus</i>	171	2013
	Tree Sparrow	<i>Passer montanus</i>	44	2013
	Grey Partridge	<i>Perdix perdix</i>	29	2013
	Coal Tit	<i>Periparus ater</i>	112	2012
	Redstart	<i>Phoenicurus phoenicurus</i>	5	2011
	Wood Warbler	<i>Phylloscopus sibilatrix</i>	2	2009
	Green Woodpecker	<i>Picus viridis</i>	5	2011
	Snow Bunting	<i>Plectrophenax nivalis</i>	1	2011
	Willow Tit	<i>Poecile montanus</i>	27	2013
	Marsh Tit	<i>Poecile palustris</i>	5	2009
	Dunnock	<i>Prunella modularis</i>	137	2013
	Goldcrest	<i>Regulus regulus</i>	30	2012
	Sand Martin	<i>Riparia riparia</i>	1	2007
	Whinchat	<i>Saxicola rubetra</i>	3	2009
	Stonechat	<i>Saxicola torquata</i>	4	2011
	Nuthatch	<i>Sitta europaea</i>	49	2013
	Arctic Tern	<i>Sterna paradisaea</i>	1	2007
	Tawny Owl	<i>Strix aluco</i>	1	2009
	Winter Wren	<i>Troglodytes troglodytes</i>	77	2012
	Ring Ouzel	<i>Turdus torquatus</i>	2	<2009
	Barn Owl	<i>Tyto alba</i>	2	2009
	Lapwing	<i>Vanellus vanellus</i>	131	2013
bony fish	Brown Trout	<i>Salmo trutta</i>	23	2012

bony fish	Grayling	<i>Thymallus thymallus</i>	1	2012
crustacean	White-clawed Crayfish	<i>Austropotamobius pallipes</i>	17	2011
insect - butterfly	Small Heath	<i>Coenonympha pamphillus</i>	1	2012
	Wall	<i>Lasiommata megera</i>	3	2012
reptile	Adder	<i>Vipera berus</i>	2	2009
terrestrial mammal	Water Vole	<i>Arvicola amphibius</i>	1	2007
	Roe Deer	<i>Capreolus capreolus</i>	1	2012
	Hedgehog	<i>Erinaceus europaeus</i>	15	2012
	Brown Hare	<i>Lepus europaeus</i>	16	2013
	Otter	<i>Lutra lutra</i>	5	2005
	Weasel	<i>Mustela nivalis</i>	3	2012
	Daubenton's Bat	<i>Myotis daubentonii</i>	2	2011
	Noctule	<i>Nyctalus noctula</i>	15	2011
	Pipistrelle Species	<i>Pipistrellus sp.</i>	8	2009
	Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	4	2010
	Common Shrew	<i>Sorex araneus</i>	3	2012

2.2.2.1 The Barnsley Biological Records Centre provided 907 data results for a 2km radius of the site. 433 of these records could be analysed to within 100m accuracy the remaining 474 records were only accurate to a square kilometre (or greater). From the data which could be analysed to 100m accuracy there were 37 records within 500m of the site. Of the 37, 25 of these records were of species of lichen found within the Church yard immediately to the east of the site. The remaining records included 4 species of protected birds (kestrel, lapwing, yellowhammer and tree sparrow). 1 record of an unidentified bat within St Johns Church in 1990 and 2 records of brown hares from between 1981 and 1986.

2.2.2.2 Beyond the records for badgers and bats which have separate comment below. BBRC data included records of Hare and Hedgehogs. Hedgehogs were frequently found in the transitional land between residential garden and more rural landscapes. The development could provide habitat which would offer support to hedgehogs and specific inclusion of certain features with the garden design such as dedicated access point in the boundaries could be included within a biodiversity enhancement plan. Brown hares are most commonly found on farmland where arable or fallow land adjoins woodland. The arable fields found on this site would support brown hares however there is little cover to hide from predation which is commonly foxes and buzzards. This considered the development should not have any major impact on the brown hares that may or may not be present within the vicinity of the site.

2.2.2.3 Within the BBRC record of bird sightings there are 16 species of bird currently featured on the red list of species which are suffering severe decline. From these 17 species 2 are wintering species (Fieldfare and Ring Ouzel), 4 are ground nesting (Skylark, Corn Bunting, Grey Partridge and Lapwing), 6 are arboreal

(Hawfinch, Lesser Spotted Woodpecker, Wood Warbler, Starling, Tree Sparrow and Turtle Dove), 2 species that breed and forage near water (Grey Wagtail and Willow Tit) and the remaining 4 species are birds that nest in hedgerows and shrubs (Twite, Yellowhammer, Spotted Flycatcher and House Sparrow) some of these can be observed in residential gardens especially over winter. In balance this development is going to increase the amount of hedgerow habitat on the site with a minor impact on the treescape. The proposed balancing pond will provide an area of new habitat where the farming activity will keep a buffer from the pond. This will provide nesting opportunities to ground nesting birds especially Corn Bunting and Grey Partridge. The nest boxes recommended for inclusion within the new dwellings will provide opportunities to a number of species including House Sparrow, Tree Sparrow, Yellowhammer and Spotted Flycatcher which have all been documented within nest boxes.

- 2.2.2.4 Churchyards are a common site to find lichen as they grow on the undisturbed masonry found there, some of which has been in situ for many decades.
- 2.2.2.5 When considering the date of the records provided 287 records were from the previous 10 years and the remaining 620 dated from before 2004.
- 2.2.2.6 There were no records of amphibians, reptiles or riparian mammals provided within the Barnsley Biological Records Centre data but there were records of amphibians and a record from 1982 of a bank vole in the greater 10km square area covered by the National Biodiversity Network data.
- 2.2.2.7 Given the unchanging nature of the church it is likely that any bat colony present in the church has still been present during recent summers. Although the proposed development could not directly impact upon a colony residing in the church it could alter the foraging habitat within the range of the colony and cause both negative and positive impacts.
- 2.2.2.8 The current equestrian use of the land will likely deter ground nesting birds from the site since horses require regular human attention. In the area beyond equestrian grazing, these fields have spent the year sown with winter wheat. A method that ploughs and drills the land in mid-Autumn for the plant to germinate and develop into young plants before a period of vernalisation during the peak of winter. By spring the plants are still only 4-6 cm tall. During the spring there will be a sequence of fertilising, disease and weed treatments. It is likely that ground nesting birds will exist away from the intensively farmed areas.
- 2.2.2.9 A diverse range of birds are known to be present in the surrounding area, and therefore an attempt should be made to limit the impact on nesting habitat. As well as preserving as much of the hedgerows and as many of the trees as is practical, there should be some effort to compensate for the losses within the new development.

- 2.2.2.10 Although there are a considerable number of local records for waterfowl within 2km of the site, it is unlikely that the balancing pond will attract ducks, geese and wading birds due to the pond only being ‘in-water’ during periods of precipitation.
- 2.2.2.11 Many of the flora records come from designated conservation areas and also from a Barnsley MBC survey conducted on 6th May 2008. The species records (summarised in **Appendix 4**) demonstrate the diversity which might have been possible before the area was intensively farmed.
- 2.2.3 The South Yorkshire Bat Group provided their data records for a 2km radius of a centre point within the site. These records have been summarised in the table below.

Table 3: Summary of South Yorkshire Bat Group data recorded within 2km of the site.

Common Name	Scientific Name	No. of Records	Most Recent Record
Brandts Bat	<i>Myotis brandtii</i>	2	1990
Daubenton's bat	<i>Myotis daubentonii</i>	5	2011
Natterer's bat	<i>Myotis nattererii</i>	1	2003
Myotis sp.	<i>Myotis sp.</i>	1	1991
Noctule	<i>Nyctalus noctula</i>	10	2012
Pipistrelle sp.	<i>Pipistrelle sp.</i>	40	2007
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	9	2012
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	2	2012
Brown long-eared Bat	<i>Plecotus auritus</i>	13	2012
Bat Species	<i>Vespertilionidae</i>	29	2014

- 2.2.3.1 The records did highlight records of bat droppings found in the neighbouring school and the neighbouring church. There were two further records of unknown bats within the immediate vicinity. One record of a grounded bat (which may or may not be from a local roost. The second record is from a 2014 survey of a nearby residential property.
- 2.2.3.2 There are records of Natterer’s Bats and Noctules within the surrounding area and these are the species most commonly found roosting in trees.

2.2.4 South Yorkshire Badger Group: A search with a 2km radius was requested, the response received from the SYBG volunteer Monica Ward was as follows:

“I have spent some time studying my Barnsley area records, which include Hoylandswaine and do not have any records of setts within the request area. I live near Hoylandswaine and know of setts of the area quite well, the nearest ones being mainly to the East of Church Lane. I have also looked carefully at the map of the area.”

From this we can confirm that there are no recorded setts in the vicinity and therefore there is little or no risk that the development proposals will impact upon the local badger population.

2.2.5 Nature Conservation Designations: This search revealed that there are no designated conservation sites within 1km of the site. Wool Greaves Meadow, a candidate site for designation as a Barnsley Natural Heritage Site is located 950m northeast of the site.

There are five areas of categorised woodland within 1km of the survey site. The nearest Cat Hill Wood is 670m to the west is recorded as Ancient Replanted Woodland, UK Biodiversity Action Plan Priority Habitat Deciduous Woodland and is also registered on the National Inventory of Woodland and Trees.

3. Site Assessment

3.1 Survey Conditions

- 3.1.1 The site was surveyed on 10th December 2013 and resurveyed on 4th September 2014 by David Ryder.
- 3.1.2 The initial survey was conducted during the sub-optimal time for botanical surveys. Therefore, many of the plant species encountered were either not in flower/leaf, dead or with their structure damaged by frost.
- 3.1.3 The resurvey was conducted at a more optimal time of year when plants are in the latter stages of growth. Due to this the number of species detected increased during the second survey.

3.2 Methodology

- 3.2.1 A thorough site assessment was undertaken; following the guidelines set out in the JNCC's *Handbook for Phase 1 habitat surveys*.
- 3.2.2 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 was noted as well as any faunal species that were encountered.
- 3.2.3 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 2**). Such protected species include, but are not limited to; Badgers, Bats, Dormouse, Great Crested Newts, Nesting birds, Otter, Reptiles, Water Vole, White-Clawed Crayfish (please see **Appendix 5**).
- 3.2.4 All surveys are conducted by experienced consultants using the following equipment to ensure an accurate assessment of each survey site; a printed site map, coloured pencil crayons, camera, 1 million candlelight torch, bat detector, binoculars, ladders, compass and floral and faunal identification guides.

3.3 Habitat Types Present

- 3.3.1 A Phase 1 Habitat map showing all habitat types present can be found at **Appendix 1**.
- 3.3.2 The following habitat types are present at **Land at Church Lane Hoylandswaine** (in alphabetical order):
- Arable
 - Buildings

- Hedgerows (Defunct)
- Hedgerows (Intact)
- Improved Grassland
- Scattered Trees

3.3.3 **Arable:** The arable field had recently been ploughed post-harvest and there was no detectable evidence of the type of crop which had been grown there this summer.

3.3.4 **Buildings:** The centre of the site has a cluster of equestrian buildings of wood and tin sheet construction in declining condition.

3.3.5 **Hedgerows (Defunct):** The site is contained within a hedge boundary the northern western boundary was in poor condition overgrown with significant breaks and the remnants of a derelict dry stone wall to the base. The species present were: Hawthorn (*Crateagus monogyna*), Holly (*Ilex aquifolium*) and Dog Rose (*Rosa canina*).

3.3.6 **Hedgerows (Intact):** The northern, southern, and western boundaries as well the central dividing field boundary were mature well maintained hedgerows. The species present were: Elder (*Sambucus nigra*), Holly (*Ilex aquifolium*), Hawthorn (*Crateagus monogyna*) and Sycamore (*Acer pseudoplatanus*) with other scattered trees.

3.3.7 **Improved Grassland:** The site is dominated by grassland. The northern section is returning to grassland after being harvested for arable crops and displays common agricultural varieties. The southern half of the site is segmented by electric fences and has a rotational grazing by horses. The species present were: Red Fescue (*Festuca rubra*), Perennial Ryegrass (*Lolium perenne*), Creeping Softgrass (*Holcus mollis*), White Clover (*Trifolium repens*), Daisy (*Bellis perennis*), Dandelion (*Taraxacum officiale*). The northeast corner of the site also displayed Soft Rush (*Juncus effusus*) and Pendulous Sedge (*Carex pendula*).

The second visit to the site in September 2014 identified the following summer species: Common Mouse-ear (*Cerastium fontanum*), Herb Bennett (*Geum urbanum*), Meadow Vetchling (*Lathyrus pratensis*), Oxeye Daisy (*Leucanthamum vulgare*), Ribwort Plantain (*Plantago lanceolata*), Self-heal (*Prunella vulgaris*), Meadow Buttercup (*Ranunculus acris*) and Red Clover (*Trifolium pratense*).

3.3.8 **Scattered Trees:** The site featured a number of scattered trees within the hedgerows. This includes two trees with features which offer habitat for other fauna noted in **section 3.4** and illustrated at **Appendix 1**. These tree species noted were: Ash (*Fraxinus excelsior*), Silver Birch (*Betula pendula*), Oak (*Quercus robur*), Sycamore (*Acer pseudoplatanus*) and Cypress (*Cupressus sp.*).

3.4 Target notes

- 3.4.1 **Target Note 1:** Oak tree with limb damage. One of six mature oak trees within a hedgerow to the centre of the site. (Location identified at **Appendix 1**) This tree is retained within the development.
- 3.4.2 **Target Note 2:** Ash tree with main stem cavity (on the eastern boundary). The tree is retained within the development.
- 3.4.3 **Target Note 3:** Area of agricultural waste and spoil deposits east of the farm buildings

3.5 Fauna Species Encountered

- 3.5.1 The following species were either seen or heard during the site investigation; Blackbird (*Turdus merula*), Magpie (*Pica pica*), Jackdaw (*Corvus monedula*), House Sparrow (*Passer domesticus*), Grey Squirrel (*Sciurus carolinensis*), Rabbit (*Oryctolagus cuniculus*) and Mole (*Talpa europaea*) activity.

3.6 Potential for Protected Species

- 3.6.1 Amphibians: The site does not offer the required habitat to sustain amphibian species although such species may pass through the site.
- 3.6.2 Badger: There was no evidence of badgers identified during the site investigation and no suitable land for badgers to excavate a sett.
- 3.6.3 Barn Owl: The buildings on site were not suitable to support roosting barn owls and the proximity to the village makes it unlikely that barn owls will hunt within the site boundary.
- 3.6.4 Bats: There are two trees on site which include features which may support roosting bats. The buildings on-site are unlikely to support roosting bats due to the materials used for construction. All of the field boundaries are mature hedgerows which will act as traversable linear features for bats to navigate by. Mature trees and buildings all provide potential foraging habitat for bats.
- 3.6.5 Dormouse: The site did not contain the floral species required to support dormice.
- 3.6.6 Nesting Birds: The trees and hedgerows offer nesting opportunities for a number of bird species during the breeding season.
- 3.6.7 Otter: The site does not offer any aquatic or wetland habitat that would support otters.
- 3.6.8 Reptiles: The site does not offer the diverse range of habitats that would be required to support reptiles.
- 3.6.9 Water Vole: The site does not offer any aquatic or wetland habitat that would support

water voles.

3.6.10 White Clawed Crayfish: The site does not offer any aquatic or wetland habitat that would support crayfish.

*The absence of any signs of or features considered valuable for supporting protected species, can **not** 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 6**), work stop immediately and JCA or Natural England contacted.*

3.7 Invasive Plant Species

3.7.1 No invasive plant species were found seen at this site whilst conducting the site investigations.

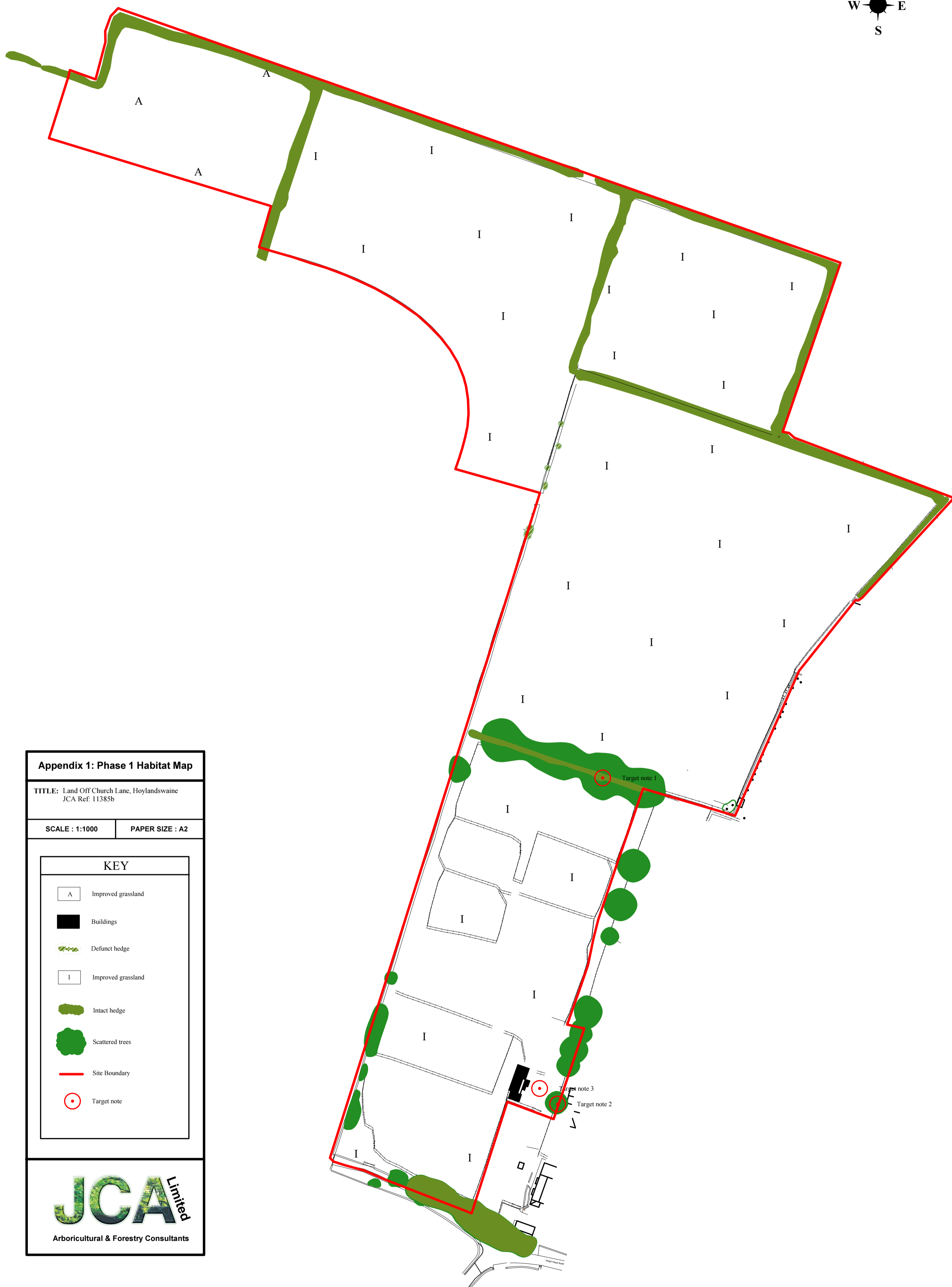
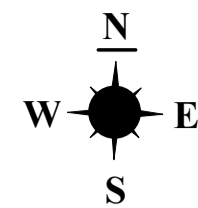
4. Conclusions and Recommendations

- 4.1.1 After conducting a thorough site investigation and a detailed Desktop Study, we consider **Land at Church Lane** to contain habitats of mostly low ecological value. The hedgerows and trees have a moderate ecological value.
- 4.1.2 No nature conservation designations will be impacted upon by proposed development.
- 4.1.3 The Desktop Study did not identify any protected or notable species in proximity to the site which would be adversely impacted upon by the proposals.
- 4.1.4 The proposed balancing pond will create opportunities for invertebrates which are attracted to temporary water bodies. This will in turn attract numerous insectivorous fauna such as small mammal, birds and larger invertebrates.
- 4.1.5 The planning layout incorporates the trees identified as target notes 1 and 2 which will remain post-development. In order to preserve the feature in target note 1 it is recommended that the broken end of the limb be dressed to stop any water ingress.
- 4.1.6 As displayed in the drawing provided by the client, the tree and hedge elements proposed for removal are limited to the fragmented hedgerow across the western boundary. This same boundary has been marked with a re-planted hedgerow across the entire length (with two access points). We recommend the use of native species for example: Hawthorn (*Crataegus monogyna*), Dogwood (*Cornus sanguinea*), Hazel (*Corylus avellana*), Blackthorn (*Prunus spinosa*), Field Rose (*Rosa arvensis*) and Guelder Rose (*Viburnum opulus*).

- 4.1.7 Any remedial works to the retained trees or hedgerows on this site should be undertaken between September and February outside of the bird breeding season. Any activity scheduled between March and August must be immediately preceded by a nesting bird survey and is reliant on a negative result in order to be able to proceed.
- 4.1.8 Within the fabric of the proposed dwellings we recommend the inclusion of **12 bat boxes, 12 open fronted bird boxes and 12 bird boxes with hole openings**. These will provide opportunities to a range of bat and bird species. *JCA can provide a biodiversity enhancement plan to include planting schemes and faunal box installation to improve the biodiversity of the site.*

JCA Ltd. can provide these and other ecological surveys if required, please do not hesitate to contact us for further information.

Appendices



Appendix 1: Phase 1 Habitat Map

TITLE: Land Off Church Lane, Hoylandswaine
JCA Ref: 11385b

SCALE : 1:1000

PAPER SIZE : A2

KEY

A Improved grassland

Buildings

Defunct hedge

I Improved grassland

Intact hedge

Scattered trees

Site Boundary

Target note



Appendix 2: Photographic Evidence

Photo 1: View across northern hedgerow boundary



Photo 2: View across mid field hedgerow towards the east



Photo 3: Target Note 3: Area to east of equestrian buildings with waste and spoil heaps



Photo 4: Equestrian buildings



Photo 5: Improved grazing paddock with view of east boundary

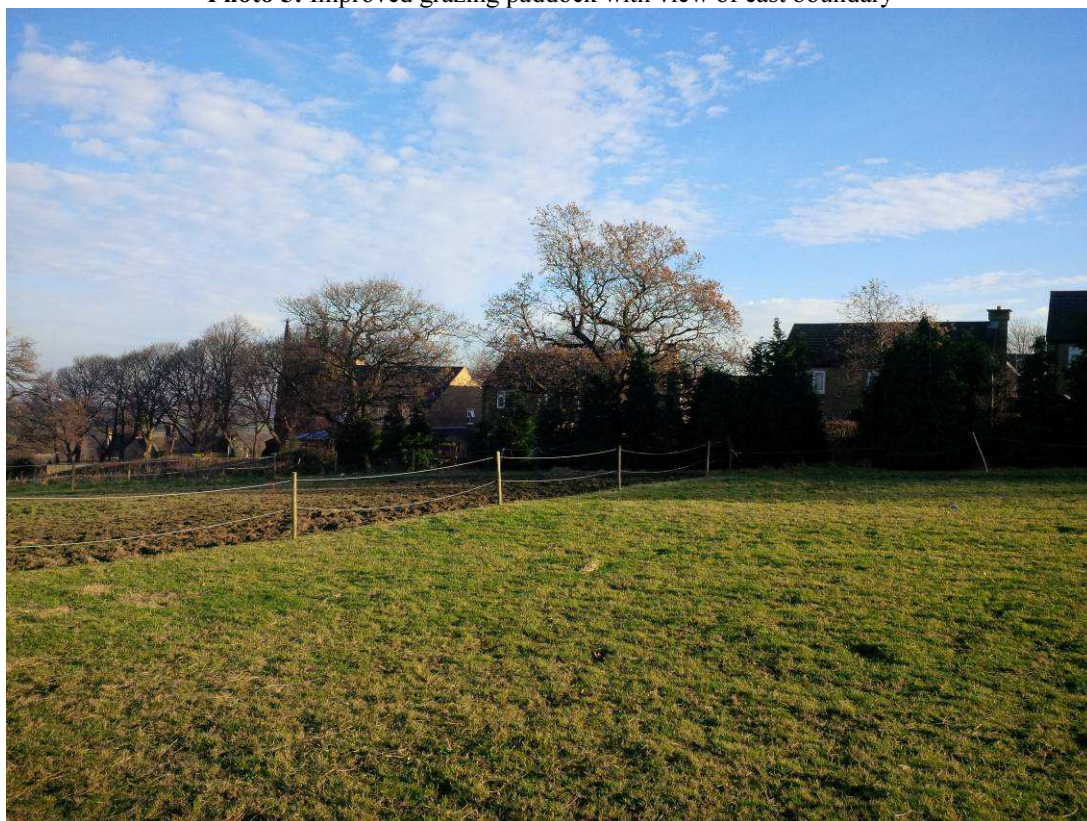


Photo 6: Target Note 3 Oak tree with limb damage



Photo 7: Target Note 2 Ash tree with main stem cavity.



Appendix 3: Site Map

Figure 1: Google Maps image of Land off Church Lane, showing the survey site in relation to the surrounding landscape.



Appendix 4: Floral Data Records

Table 3: Summary of floral data from the Barnsley Biological Records Centre

Group	Common Name	Scientific Name	No of Records	Most Recent Record
conifer	Scots Pine	<i>Pinus sylvestris</i>	2	2010
fern	Lady Fern	<i>Athyrium filix-femina</i>	1	2010
	Broad Buckler-Fern	<i>Dryopteris dilatata</i>	3	2010
	Common Male Fern	<i>Dryopteris filix-mas</i>	2	2010
	Bracken	<i>Pteridium aquilinum</i>	5	2010
flowering plant	Field Maple	<i>Acer campestre</i>	1	2008
	Sycamore	<i>Acer pseudoplatanus</i>	6	2010
	Yarrow	<i>Achillea millefolium</i>	2	2010
	Sneezewort	<i>Achillea ptarmica</i>	1	2010
	Ground-Elder	<i>Aegopodium podagraria</i>	1	2008
	Horse-Chestnut	<i>Aesculus hippocastanum</i>	2	2010
	Common Bent	<i>Agrostis capillaris</i>	2	2010
	Creeping Bent	<i>Agrostis stolonifera</i>	3	2010
	Early Hair-Grass	<i>Aira praecox</i>	1	2008
	Bugle	<i>Ajuga reptans</i>	1	2008
	Garlic Mustard	<i>Alliaria petiolata</i>	1	2008
	Alder	<i>Alnus glutinosa</i>	2	2010
	Marsh Foxtail	<i>Alopecurus geniculatus</i>	1	2008
	Meadow Foxtail	<i>Alopecurus pratensis</i>	1	2008
	Barren Brome	<i>Anisantha sterilis</i>	1	2008
	Sweet Vernal Grass	<i>Anthoxanthum odoratum</i>	3	2010
	Cow Parsley	<i>Anthriscus sylvestris</i>	4	2010
	Lesser Burdock	<i>Arctium minus</i>	1	2008
	False Oat-Grass	<i>Arrhenatherum elatius</i>	2	2010
	Mugwort	<i>Artemisia vulgaris</i>	1	2008
	Lords-And-Ladies	<i>Arum maculatum</i>	3	2012
	Common Orache	<i>Atriplex patula</i>	1	2008
	Atriplex prostrata agg.	<i>Atriplex prostrata agg.</i>	1	2008
	Daisy	<i>Bellis perennis</i>	1	2008
	Silver Birch	<i>Betula pendula</i>	2	2010
	Rape	<i>Brassica napus</i>	1	2008
	Hairy Brome	<i>Bromopsis ramosa</i>	1	2008
	Soft-Brome	<i>Bromus hordeaceus</i>	1	2008
	Butterfly-Bush	<i>Buddleja davidii</i>	1	2008
	Large Bindweed	<i>Calystegia silvatica</i>	1	2008
	Harebell	<i>Campanula rotundifolia</i>	2	2010
	Shepherd's-Purse	<i>Capsella bursa-pastoris</i>	1	2008
	Hairy Bitter-Cress	<i>Cardamine hirsuta</i>	4	2008
	Cuckooflower	<i>Cardamine pratensis</i>	1	2008
	Glaucous Sedge	<i>Carex flacca</i>	1	2010
flowering plant	Common Sedge	<i>Carex nigra</i>	1	2010

flowering plant	Oval Sedge	<i>Carex ovalis</i>	1	2010
	Sweet Chestnut	<i>Castanea sativa</i>	1	2008
	Common Knapweed	<i>Centaurea nigra</i>	3	2010
	Red Valerian	<i>Centranthus ruber</i>	1	2008
	Common Mouse-Ear	<i>Cerastium fontanum</i>	3	2010
	Sticky Mouse-Ear	<i>Cerastium glomeratum</i>	1	2008
	Snow-In-Summer	<i>Cerastium tomentosum</i>	1	2008
	Rough Chervil	<i>Chaerophyllum temulum</i>	1	2008
	Rosebay Willowherb	<i>Chamerion angustifolium</i>	1	2008
	Fat Hen	<i>Chenopodium album</i> agg.	1	2008
	Enchanter's-Nightshade	<i>Circaea lutetiana</i>	1	2010
	Creeping Thistle	<i>Cirsium arvense</i>	2	2010
	Marsh Thistle	<i>Cirsium palustre</i>	1	2010
	Spear Thistle	<i>Cirsium vulgare</i>	1	2008
	Traveller's Joy	<i>Clematis vitalba</i>	1	2008
	Hazel	<i>Corylus avellana</i>	4	2010
	Hawthorn	<i>Crataegus monogyna</i>	7	2010
	Smooth Hawk's-Beard	<i>Crepis capillaris</i>	1	2008
	Crested Dog's-Tail	<i>Cynosurus cristatus</i>	3	2010
	Cock's-Foot	<i>Dactylis glomerata</i>	4	2010
	Tufted Hair-Grass	<i>Deschampsia caespitosa</i>	5	2012
	Wavy Hair-Grass	<i>Deschampsia flexuosa</i>	1	2008
	Foxglove	<i>Digitalis purpurea</i>	3	2010
	Common Couch	<i>Elytrigia repens</i>	1	2008
	American Willowherb	<i>Epilobium ciliatum</i>	1	2008
	Great Willowherb	<i>Epilobium hirsutum</i>	1	2008
	Broad-Leaved Willowherb	<i>Epilobium montanum</i>	1	2008
	Sun Spurge	<i>Euphorbia helioscopia</i>	1	2008
	Petty Spurge	<i>Euphorbia peplus</i>	1	2008
	Beech	<i>Fagus sylvatica</i>	3	2010
	Giant Fescue	<i>Festuca gigantea</i>	1	2010
	Meadow Fescue	<i>Festuca pratensis</i>	1	2008
	Red Fescue	<i>Festuca rubra</i> agg.	3	2010
	Ash	<i>Fraxinus excelsior</i>	7	2010
	Common Fumitory	<i>Fumaria officinalis</i>	1	2008
	Common Hemp-Nettle agg.	<i>Galeopsis tetrahit</i> agg.	1	2008
	Cleavers	<i>Galium aparine</i>	3	2010
	Herb-Robert	<i>Geranium robertianum</i>	3	2010
	Herb Bennet	<i>Geum urbanum</i>	2	2010
	Ground-Ivy	<i>Glechoma hederacea</i>	1	2008
	Floating Sweet-Grass	<i>Glyceria fluitans</i>	1	2008
	Ivy	<i>Hedera helix</i>	4	2010
	Hogweed	<i>Heracleum sphondylium</i>	6	2010
	Hawkweed	<i>Hieracium aggregatum</i>	1	2010
	Yorkshire-Fog	<i>Holcus lanatus</i>	5	2010
	Creeping Soft-Grass	<i>Holcus mollis</i>	3	2010

flowering plant	Wall Barley	<i>Hordeum murinum</i>	1	2008
	Hyacinthoides	<i>Hyacinthoides</i>	1	2008
	Bluebell	<i>Hyacinthoides non-scripta</i>	6	2012
	Perforate St. John's-Wort	<i>Hypericum perforatum</i>	1	2008
	Cat's-Ear	<i>Hypochaeris radicata</i>	3	2010
	Holly	<i>Ilex aquifolium</i>	6	2010
	Indian Balsam	<i>Impatiens glandulifera</i>	3	2010
	Compact Rush	<i>Juncus conglomeratus</i>	1	2010
	Soft Rush	<i>Juncus effusus</i>	1	2008
	Hard Rush	<i>Juncus inflexus</i>	1	2008
	Yellow Archangel	<i>Lamiastrum galeobdolon</i>	2	2010
	White Dead-Nettle	<i>Lamium album</i>	1	2008
	Red Dead-Nettle	<i>Lamium purpureum</i>	1	2008
	Nipplewort	<i>Lapsana communis</i>	1	2008
	Meadow Vetchling	<i>Lathyrus pratensis</i>	3	2010
	Autumnal Hawkbit	<i>Leontodon autumnalis</i>	1	2008
	Oxeye Daisy	<i>Leucanthemum vulgare</i>	2	2010
	Common Toadflax	<i>Linaria vulgaris</i>	1	2008
	Italian Rye-Grass	<i>Lolium multiflorum</i>	1	2008
	Perennial Rye-Grass	<i>Lolium perenne</i>	2	2010
	Honeysuckle	<i>Lonicera periclymenum</i>	2	2010
	Common Bird's-Foot-Trefoil	<i>Lotus corniculatus</i>	2	2010
	Large Bird's-Foot-Trefoil	<i>Lotus pedunculatus</i>	1	2010
	Apple	<i>Malus domestica</i>	1	2008
	Pineapple Weed	<i>Matricaria discoidea</i>	1	2008
	Welsh Poppy	<i>Meconopsis cambrica</i>	1	2008
	Black Medick	<i>Medicago lupulina</i>	1	2008
	Dog's Mercury	<i>Mercurialis perennis</i>	6	2010
	Wood Millet	<i>Milium effusum</i>	2	2010
	Field Forget-Me-Not	<i>Myosotis arvensis</i>	1	2008
	Water Chickweed	<i>Myosoton aquaticum</i>	1	2008
	Garden Daffodil	<i>Narcissus</i>	1	2008
	Wood-Sorrel	<i>Oxalis acetosella</i>	2	2010
	Common Poppy	<i>Papaver rhoeas</i>	1	2008
	Pale Persicaria	<i>Persicaria lapathifolia</i>	1	2008
	Redshank	<i>Persicaria maculosa</i>	1	2008
	Timothy	<i>Phleum pratense</i>	2	2010
	Burnet-Saxifrage	<i>Pimpinella saxifraga</i>	1	2010
	Ribwort Plantain	<i>Plantago lanceolata</i>	2	2010
	Greater Plantain	<i>Plantago major</i>	1	2008
	Annual Meadow-Grass	<i>Poa annua</i>	2	2010
	Wood Meadow-Grass	<i>Poa nemoralis</i>	1	2008
	Smooth Meadow-Grass	<i>Poa pratensis</i>	1	2008
	Rough Meadow-Grass	<i>Poa trivialis</i>	1	2008
	Equal-Leaved Knotgrass	<i>Polygonum arenastrum</i>	1	2008
	Knotgrass agg.	<i>Polygonum aviculare agg.</i>	1	2008

flowering plant	Silverweed	<i>Potentilla anserina</i>	1	2008
	Tormentil	<i>Potentilla erecta</i>	2	2010
	Creeping Cinquefoil	<i>Potentilla reptans</i>	2	2010
	Selfheal	<i>Prunella vulgaris</i>	1	2010
	Wild Cherry	<i>Prunus avium</i>	2	2010
	Wild Plum	<i>Prunus domestica</i>	1	2008
	Blackthorn	<i>Prunus spinosa</i>	2	2010
	Oak	<i>Quercus</i>	1	2010
	Sessile Oak	<i>Quercus petraea</i>	4	2012
	Pedunculate Oak	<i>Quercus robur</i>	6	2010
	Meadow Buttercup	<i>Ranunculus acris</i>	3	2010
	Bulbous Buttercup	<i>Ranunculus bulbosus</i>	1	2008
	Creeping Buttercup	<i>Ranunculus repens</i>	3	2010
	Yellow-Rattle	<i>Rhinanthus minor</i>	2	2010
	Field Rose	<i>Rosa arvensis</i>	3	2010
	Dog Rose	<i>Rosa canina</i> agg.	5	2010
	Dewberry	<i>Rubus caesius</i>	1	2008
	Bramble	<i>Rubus fruticosus</i> agg.	5	2010
	Raspberry	<i>Rubus idaeus</i>	1	2008
	Common Sorrel	<i>Rumex acetosa</i>	3	2010
	Sheep's Sorrel agg.	<i>Rumex acetosella</i>	1	2008
	Curled Dock	<i>Rumex crispus</i>	1	2008
	Broad-Leaved Dock	<i>Rumex obtusifolius</i>	4	2010
	Eared Willow	<i>Salix aurita</i>	1	2008
	Goat Willow	<i>Salix caprea</i>	1	2008
	Grey Willow	<i>Salix cinerea</i>	1	2010
	Crack Willow	<i>Salix fragilis</i>	2	2010
	Elder	<i>Sambucus nigra</i>	3	2010
	Biting Stonecrop	<i>Sedum acre</i>	1	2008
	Common Ragwort	<i>Senecio jacobaea</i>	1	2008
	Oxford Ragwort	<i>Senecio squalidus</i>	1	2008
	Groundsel	<i>Senecio vulgaris</i>	1	2008
	Hedge Mustard	<i>Sisymbrium officinale</i>	1	2008
	Bittersweet	<i>Solanum dulcamara</i>	1	2008
	Perennial Sow-Thistle	<i>Sonchus arvensis</i>	1	2008
	Prickly Sow-Thistle	<i>Sonchus asper</i>	1	2008
	Smooth Sow-Thistle	<i>Sonchus oleraceus</i>	1	2008
	Betony	<i>Stachys officinalis</i>	2	2010
	Marsh Woundwort	<i>Stachys palustris</i>	1	2010
	Hedge Woundwort	<i>Stachys sylvatica</i>	3	2010
	Lesser Stitchwort	<i>Stellaria graminea</i>	1	2010
	Greater Stitchwort	<i>Stellaria holostea</i>	3	2010
	Common Chickweed	<i>Stellaria media</i>	2	2010
	Devil's-Bit Scabious	<i>Succisa pratensis</i>	1	2010
	Dandelion	<i>Taraxacum officinale</i> agg.	1	2008
	Wood Sage	<i>Teucrium scorodonia</i>	1	2008

flowering plant	Goat's-Beard	<i>Tragopogon pratensis</i>	1	2008
	Red Clover	<i>Trifolium pratense</i>	3	2010
	White Clover	<i>Trifolium repens</i>	2	2010
	Scentless Mayweed	<i>Tripleurospermum inodorum</i>	1	2008
	Bread Wheat	<i>Triticum aestivum</i>	1	2008
	Colt's-Foot	<i>Tussilago farfara</i>	1	2008
	Wych Elm	<i>Ulmus glabra</i>	3	2010
	Common Nettle	<i>Urtica dioica</i>	5	2010
	Brooklime	<i>Veronica beccabunga</i>	1	2010
	Slender Speedwell	<i>Veronica filiformis</i>	1	2008
	Ivy-Leaved Speedwell agg.	<i>Veronica hederifolia</i>	1	2008
	Wood Speedwell	<i>Veronica montana</i>	2	2010
	Common Field-Speedwell	<i>Veronica persica</i>	1	2008
	Tufted Vetch	<i>Vicia cracca</i>	2	2010
	Hairy Tare	<i>Vicia hirsuta</i>	1	2008
	Common Vetch	<i>Vicia sativa</i>	1	2008
	Bush Vetch	<i>Vicia sepium</i>	2	2010
	Common Dog-Violet	<i>Viola riviniana</i>	1	2010
horsetail	Field Horsetail	<i>Equisetum arvense</i>	1	2008
lichen	Acarospora fuscata	<i>Acarospora fuscata</i>	1	1995
	Caloplaca citrina	<i>Caloplaca citrina</i>	1	1995
	Caloplaca holocarpa	<i>Caloplaca holocarpa</i>	1	1995
	Candelariella aurella	<i>Candelariella aurella</i>	1	1995
	Candelariella vitellina	<i>Candelariella vitellina</i>	1	1995
	Cladonia fimbriata	<i>Cladonia fimbriata</i>	1	1995
	Lecanora albescens	<i>Lecanora albescens</i>	1	1995
	Lecanora conizaeoides	<i>Lecanora conizaeoides</i>	1	1995
	Lecanora dispersa	<i>Lecanora dispersa</i>	1	1995
	Lecanora polytropa	<i>Lecanora polytropa</i>	1	1995
	Lecanora soralifera	<i>Lecanora soralifera</i>	1	1995
	Lecidella scabra	<i>Lecidella scabra</i>	1	1995
	Lecidella stigmatea	<i>Lecidella stigmatea</i>	1	1995
	Lepraria incana	<i>Lepraria incana</i>	1	1995
	Parmelia saxatilis	<i>Parmelia saxatilis</i>	1	1995
	Phaeophyscia orbicularis	<i>Phaeophyscia orbicularis</i>	1	1995
	Physcia caesia	<i>Physcia caesia</i>	1	1995
	Porpidia tuberculosa	<i>Porpidia tuberculosa</i>	1	1995
	Psilolechia lucida	<i>Psilolechia lucida</i>	1	1995
	Rhizocarpon reductum	<i>Rhizocarpon reductum</i>	1	1995
	Rinodina gennarii	<i>Rinodina gennarii</i>	1	1995
	Scoliciosporum umbrinum	<i>Scoliciosporum umbrinum</i>	1	1995
	Verrucaria muralis	<i>Verrucaria muralis</i>	1	1995
	Verrucaria nigrescens	<i>Verrucaria nigrescens</i>	1	1995
	Xanthoria parietina	<i>Xanthoria parietina</i>	1	1995
liverwort	Notched Pouchwort	<i>Calypogeia arguta</i>	1	2007
	Bifid Crestwort	<i>Lophocolea bidentata</i>	1	2007

liverwort	Variable-leaved Crestwort	<i>Lophocolea heterophylla</i>	1	2007
	Endive Pellia	<i>Pellia endiviifolia</i>	1	2007
moss	Creeping Feather-moss	<i>Amblystegium serpens</i>	1	2007
	Common Smoothcap	<i>Atrichum undulatum</i>	2	2010
	Lesser Bird's-claw Beard-moss	<i>Barbula convoluta</i>	1	2007
	Cylindric Beard-moss	<i>Barbula cylindrica</i>	1	2007
	Rigid Beard-moss	<i>Barbula rigidula</i>	1	2007
	Bird's-claw Beard-moss	<i>Barbula unguiculata</i>	1	2007
	Whitish Feather-moss	<i>Brachythecium albicans</i>	1	2007
	Rough-stalked Feather-moss	<i>Brachythecium rutabulum</i>	1	2007
	Silver-moss	<i>Bryum argenteum</i>	1	2007
	Bryum bicolor	<i>Bryum bicolor</i>	1	2007
	Capillary Thread-moss	<i>Bryum capillare</i>	1	2007
	Small-mouthed Thread-moss	<i>Bryum inclinatum</i>	1	2007
	Crimson-tuber Thread-moss	<i>Bryum rubens</i>	1	2007
	Pointed Spear-moss	<i>Calliargon cuspidatum</i>	1	2007
	Heath Star Moss	<i>Campylopus introflexus</i>	1	2007
	Redshank	<i>Ceratodon purpureus</i>	1	2007
	Silky Forklet-moss	<i>Dicranella heteromalla</i>	1	2007
	Common Pincushion	<i>Dicranoweisia cirrata</i>	1	2007
	Common Feather-moss	<i>Eurhynchium praelongum</i>	2	2010
	Common Pocket-moss	<i>Fissidens taxifolius</i>	1	2007
	Grey-cushioned Grimmia	<i>Grimmia pulvinata</i>	1	2007
	Heath Plait-moss	<i>Hypnum jutlandicum</i>	1	2007
	Elegant Silk-moss	<i>Isopterygium elegans</i>	1	2007
	Swan's-neck Thyme-moss	<i>Mnium hornum</i>	1	2007
	Cape Thread-moss	<i>Orthodontium lineare</i>	1	2007
	Wood Bristle-moss	<i>Orthotrichum affine</i>	1	2007
	Hooded Bristle-moss	<i>Orthotrichum cupulatum</i>	1	2007
	White-tipped Bristle-moss	<i>Orthotrichum diaphanum</i>	1	2007
	Hart's-tongue Thyme-moss	<i>Plagiomnium undulatum</i>	2	2010
	Juicy Silk-moss	<i>Plagiothecium succulentum</i>	1	2007
	Nodding Thread-moss	<i>Pohlia nutans</i>	1	2007
	Clustered Feather-moss	<i>Rhynchostegium confertum</i>	1	2007
	Long-beaked Water Feather-moss	<i>Rhynchostegium riparioides</i>	1	2007
	Springy Turf-moss	<i>Rhytidiadelphus squarrosus</i>	1	2007
	Schistidium apocarpum	<i>Schistidium apocarpum</i>	1	2007
	Water Screw-moss	<i>Tortula latifolia</i>	1	2007
	Wall Screw-moss	<i>Tortula muralis</i>	1	2007
	Bruch's Pincushion	<i>Ulota crispa var. norvegica</i>	1	2007

Appendix 5: 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
- Large Blue Butterfly
- Natterjack Toad
- Otter
- 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, and 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
- Pine Martin
- 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 the adults being protected, the eggs, young and nest itself is protected whilst in use.

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

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

Appendix 6: References

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- Herpetofauna Workers' Manual* (2003). Tony Gent and Steve Gibson. Joint Nature Conservation Committee (JNCC).
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- The Dormouse conservation handbook* (second edition). Paul Bright, Pat Morris and Tony Michell-Jones. Natural England.

Websites:

- Bat Conservation Trust (BCT). <<http://www.bats.org.uk/>>
- Google Maps. <<http://maps.google.co.uk/>>
- Multiple-Agency Geographic Information for the Countryside (MAGIC). <<http://www.magic.gov.uk/>>
- National Biodiversity Network (NBN) Gateway. <data.nbn.org.uk>
- Natural England. <<http://www.naturalengland.org.uk/>>
- Nature on the Map. Natural England. <www.natureonthemap.org.uk>
- Royal Society for the Protection of Birds (RSPB). <<http://www.rspb.org.uk/>>

Relevant Legislation:

- Wildlife and Countryside Act 1981 <<http://jncc.defra.gov.uk/page-3614>>
- Conservation (Natural Habitats, &c.) Regulations 1994 (The Habitats Directive) (Amended 2010)
<<http://www.legislation.gov.uk/ukxi/2010/490/contents/made>>
- Countryside and Rights of Way Act 2000
<http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf?view=interweave>
- Hedgerow Regulations 1997 <<http://www.legislation.gov.uk/ukxi/1997/1160/contents/made>>
- Protection of Badger Act 1992 <<http://www.legislation.gov.uk/ukpga/1992/51/contents>>

Appendix 7: Author Credentials

Consulting Staff: Arboriculture

Andy Bagshaw *FdSc (Arboriculture)*. Andy joined JCA in 2005 having gained several years experience in tree surgery and landscaping. Andy has obtained a foundation degree in Arboriculture at the University of Central Lancashire, is QTRA qualified and is a JCA team leader who manages an office of Consulting Arboriculturists.

Andrew Bussey Andrew joined JCA having spent 12 years working as a tree surgeon for various private companies and a Local Authority. He has NPTC qualifications, is QTRA qualified and is studying for his Arboricultural Technicians Certificate.

Flora Harding *BSc (Hons) Fd.BSc. (Arboriculture and Tree Care)*. Flora has a degree in Rural Resource Development (in Wildlife and Landscape Conservation). She has previously worked for a local authority and has a licence for QTRA. In 2012, Flora published an article to enable industry based research for the purpose of gaining Chartered Arboriculturist status.

Phil Humeniuk *FdSc (Arboriculture)*. Phil joined JCA having spent 3 years working for various tree surgery companies and as a Tree Officer for a Local Authority. He also has several years experience working as a consultant both for JCA and for another consultancy. Phil obtained his foundation degree in Arboriculture at the University of Central Lancashire and has various NPTC's and is LANTRA certified in Professional Tree Inspection.

Toby Parsons *Cert. Arb. (RFS), Tech. Cert. (Arbor.A)*. Toby joined JCA after spending 6 years working as a senior climber for various Arboricultural contractors in the East Midlands and the South-West. He has gained the Level 2 Certificate in Arboriculture (RFS) and an Arboricultural Technicians Certificate. Toby is LANTRA certified in Professional Tree Inspection.

Liam Plummer *BSc (Hons) Ecology*. Liam graduated from Bangor University in Ecology. He has recently joined JCA having worked for the Forestry Commission Scotland and previously in the Arboriculture and Conservation sectors. Liam has various NPTC qualifications and has completed several National Diploma (Arboriculture) units.

Scott Reid *ND (Arboriculture and Forestry)*. Scott joined JCA after working with other consultancy companies in the south of England. He specialises in trees in relation to development and holds a National Diploma, various NPTC qualifications and is currently studying for his Level 4 Diploma in Arboriculture.

Michelle Ryan *BSc (Hons) Arboriculture*. Michelle has recently joined JCA having previously worked for a Local Authority. She obtained a degree in Arboriculture at the University of Central Lancashire and has various NPTC qualifications. Michelle is seeking to become LANTRA certified in Professional Tree Inspection.

Consulting Staff: Ecology

David Ryder. David joined JCA in 2013 as our in-house ecologist. He brings with him over 8 years experience in the field of ecological consultancy conducting Phase 1 habitat and species surveys for Badgers, Bats, Nesting Birds, Otters & Reptiles among others. David has a specialism in Bats and holds registration (No. CLS03231) with the Class 18 Natural England Licence to disturb and handle bats. David is currently undergoing assessment for Chartered Institute of Ecology & Environmental Management (CIEEM) membership. In addition David is bolstering his experience and academic credentials and is enrolled on the Postgraduate Certificate in Ecological Survey Techniques at the University of Oxford starting later in 2014.

Alice Palmer: Alice Palmer. *BSc (Hons) Ecology, MSc (Dist) Biodiversity and Conservation*. Alice joined JCA in 2014 after graduating from the University of Leeds, having obtained a BSc in Ecology and an MSc in Biodiversity and Conservation. Alice is a student member of the Chartered Institute of Ecology & Environmental Management (CIEEM), and is working towards a graduate membership of CIEEM and a Class 18 Natural England bat licence.

Administrative Staff

Sue Guest Administrative Team Leader.

Simeon Haigh *BSc (Hons)*. IT Officer.


Lorraine Spink Administrative Assistant.

Yasmin Shahzad Administrative Assistant.

Catherine Cocking Accounts Manager.

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

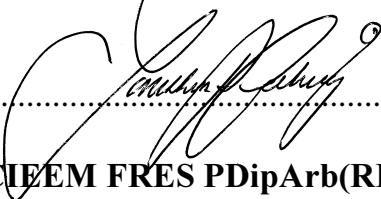
Surveyed and Written by



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David Ryder

Reviewed and Approved by



.....

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10th December 2014

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Photo front cover: Sluice at Bowers Mill

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