

DARLAND LODGE, ECOLOGICAL PHASE 1 SURVEYS



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WILDLIFE MANAGEMENT

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DARLAND LODGE, GAMFORD LANE

2016 ECOLOGICAL SURVEYS

1.0 INTRODUCTION

Peter Lancashire has been commissioned by Mr Patrick Lomax of Land Planning on behalf of their client to conduct an extended phase 1 protected species survey, of the site known as Darland Lodge, Gamford Lane, Rossett, North Wales. As requested by Wrexham Borough Council's Biodiversity Planning Officer.

The, vegetation/habitats, bat, badger, amphibian/reptile and bird surveys were conducted on the 20th July 2016 by ecologist Peter Lancashire and assistant ecologist Thomas Lancashire.

2.0 LEGAL PROTECTION

2.01 Bats and their Legal Protection

Currently there are 16 species of bat known to breed in the UK. All 16 species and their roost sites are protected under the Wildlife and Countryside Act 1981, and as a signatory to the Bonn Convention (Agreement on the Conservation of Bats in Europe), the UK is also required to protect their habitats, requiring protection at the European level is given under Schedule 2 of the Conservation (Natural Habitats &c.) Regulations 1994, which defines European protected species of animals. These laws make it illegal to kill, injure, capture or disturb bats or to obstruct access to, damage or destroy bat roosts.

2.02 Bat Roosts

The distribution and abundance of suitable diurnal roost sites are crucial to the survival of bat species, offering a critical resource providing shelter, protection, mating and hibernation sites. Microchiroptera (the insectivorous species of bat found in the UK) are able to exploit a wide diversity of roost sites such as caves, trees, tunnels, mines and buildings. Of the UK species, 9 are known to use tree holes as their maternity roosts, but **all** species can be found using buildings at some point during the year. Species which have adapted to utilise buildings as

alternative roost sites make use of various parts of the building including hollow walls, roof spaces and areas above soffit boarding, behind weatherboarding and under hanging tiles; habits which must be considered when altering or demolishing a building. It is important to note that individual roosts are not usually occupied all year round, as many bat colonies use several different roost sites within a colony area, and move between these frequently (depending upon the species). The same site tends to be occupied at the same time each year. **The roost site is protected by law whether or not the bats are present.**

In addition to roost sites, trees and hedgerows provide two other important resources for bats: as ‘linear land elements’ or navigation features by which bats commute safely and economically between roost and feeding sites. A 10 metres gap in a hedge may isolate some of the smaller species from their feeding areas and force them to change roosts as foraging sites, which are also protected under the European legislation. All UK species are insectivorous and predominantly feed on insects which are associated with trees and water. Trees and hedgerows provide shelter for flying insects and focal points of insect swarms. When assessing a site for use by bats the surrounding landscape must be taken into account.

2.03 Bat Survey Constraints

Surveying for bats at certain times of the year poses a number of problems:

Survey at one time of year does not provide evidence of the use of the site by bats at other times of the year. No active bats may be present or detectable. Small roosts can easily be overlooked as they leave few field signs. In winter and during cold spells torpid and/or hibernating, bats squeeze deep into cracks and crevices in brickwork, stonework and woodwork. They can be difficult to spot even with the help of an endoscope.

2.04 Bats & the Wildlife & Countryside Act 1981

The Wildlife & Countryside Act 1981 and the CROW Act 2000 give protection to all bats and their roost sites found in Great Britain. This made many improvements bringing our laws in line with most of Europe.

- It is illegal to intentionally or recklessly kill or injure any bat.
- It is illegal to intentionally or recklessly disturb a bat roost. All roosts are covered: trees, caves, buildings and even your own dwelling place.

- It is also illegal to obstruct, damage or destroy the entrances used by bats to any given roost site.

In some cases, Health & Safety or public Health issues are in conflict with the conservation of a given species. There are provisions in the Act to combat such problems. Cases where such work is to be carried out and it is likely to disturb or damage a nest or bat roost, **Natural England (NE)**, **Natural Resources Wales (NRW)** or the **Scottish National Heritage (SNH)** must be informed, who will freely give safe, sound advice to devise a workable mitigation package which will be submitted to relevant organisation along with **DEFRA** who are the Government bodies that promote nature conservation. They have the special responsibility for the implementation and policing the Wildlife & Countryside Act.

Note: To handle bats or do anything concerning their roosts, the individual must be a fully licensed bat person.

2.05 Great Crested Newts & the Law

Great Crested Newts are protected under the Wildlife & Countryside Act 1981 as amended, also the Conservation of European Wildlife and Natural Habitats (BERN Convention). The GCN listed on Schedule 5 of the 1981 Act which is therefore subject to the provisions of section 9, which make it an offence to:

6. Intentionally kill, injure or take a great crested newt [Section 9(1)]
7. Possess or control any live or dead specimen or anything derived from a great crested newt [Section 9(2)].
8. Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by great crested newt [9(4)(a)]
9. Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose {Section 9 (4)(b)}

Natural Habitats Reg's 1994 & UK Law Council Directive of 1992, the great crested newt is listed on Annex 11 & Annex 1V of the Directive (European Protected Species). As outlined in Article 12 & with inclusion on Schedule 2 of the Reg's Regulation 39 makes it an offence to:

10. Deliberately capture or kill a great crested newt [Regulation 39(1)(a)]

11. Deliberately disturb a great crested newt [Regulation 39(1)(b)]
12. Deliberately take or destroy the eggs of great crested newt [Regulation 39(1)(c)]
13. Damage or destroy a breeding site or resting place of great crested newt
[Regulation 39(1)(d)]

The above legislation applies to all life stages of great crested newts

2.06 Great Crested Newt Survey Constraints

Due to the time of the year the majority of GCN have already left the ponds and are living in their terrestrial habitats, feeding up before the coming frosts/snow of the winter season. This creates problems for accurate presence or absence and population size data being sought. Natural England will only issue a European Protected Species License, when the surveys for the method statement have been conducted during the appropriate time of the season.

2.07 Legal Protection for Schedule 1 Species & Nesting Birds

Under Section 4 of the 1967 Protection of Birds Act, any person who wilfully disturbs any wild bird included in Schedule 1 of the 1954 Protection of Birds Act while it is on or near a nest containing eggs or unflown young, he or she shall be guilty of an offence and liable to a special penalty. With the introduction of the Wildlife & Countryside Act 1981, all nesting birds received even greater protection under the Act. Once a bird has placed a single piece of material into place it then constitutes a bird's nest. It is then protected by the Wildlife & Countryside Act, which makes it an offence to cause damage to the bird or nest, eggs or chicks and immediate habitat which is likely to result in damage by causing the bird to desert its nest. This covers all bird species with a small number of exceptions (pest species, can only be controlled by special licence). In 2001, the Countryside and Rights of Way 2000 (CROW Act), was made law. Wildlife legislation has strengthened the legal protection for many species. The inclusion of reckless disturbance as an offence brings the Wildlife & Countryside Act up to date. Certain offences are 'arrestable' with stronger search and seizure powers, the Courts can impose heavier fines, prison sentences for virtually all wildlife offences. Special licences can be issued by Natural England (NE) and the Natural Resources Wales (NRW) for scientific research, conservation, photography, ringing of young at the nest and mitigation of Schedule 1 species.

2.08 The Protection of Badgers Act 1992 (c. 51)

This is an Act to consolidate the:

- Badgers Act 1973,
- the Badgers Act 1991 and
- Badgers (Further Protection) Act 1991

This Act protects badgers and their setts, and is laid out in three sections:

- Offences
- Exceptions and Licenses
- Enforcement and Penalties

The 1992 Act repeals previous Badgers Acts of 1973 and 1991, and certain sections of other relevant acts such as The Wildlife and Countryside Act 1981, The Environmental Protection Act 1990, The Animals (Scientific Procedures) Act 1986, The Natural Heritage (Scotland) Act 1991, and The Criminal Justice Act 1991.

Offences

1. Wilfully killing, injures or takes, or attempts to kill, injure or take, a badger.
2. Cruelly ill-treating a badger, digging for badgers, using badger tongs, using a firearm other than the type specified under the exceptions within the Act.
3. Interfering with a badger sett by damaging, destroying, obstructing, causing dog a dog to enter a sett, disturbing an occupied sett - either by intent or by negligence.
4. Selling or offering for sale a live badger, having possession or control of a live badger.
5. Marking a badger or attaching any ring, tag, or other marking device to a badger.

Exceptions and Licenses

- Taking a disabled badger for the purposes of tending it.
- Killing a seriously injured or sickly badger as an act of mercy.
- Unavoidably killing a badger as an incidental result of a lawful action.
- Any act which is authorized by the Animals (Scientific Procedures) Act 1986.
- Killing or taking, or attempting to kill or take, or injuring a badger during any of these actions, as necessary for the purpose of preventing serious damage to land, crops, poultry, or any other

form of property. This does not apply if it was apparent before that time that such action would be necessary, and a license had not been applied for, or an application had not been determined.

- Blocking sett entrances for the purposes of hunting foxes with hounds as detailed in the conditions set within section 8 of the Act.
- Having possession of a disabled badger for the purposes of tending it.
- An offence will not be committed if a license is obtained from the appropriate authority in order to carry out any activities prohibited by the Act, so long as the conditions contained in the license are adhered to.
- A license may be obtained from the appropriate authority in order to kill or take badgers, or interfere with their setts in order to prevent the spread of disease.
- A license may be obtained from the appropriate authority in order to interfere with a badger sett for the purpose of agricultural or forestry operations, or to construct, maintain or improve water courses, drainage, and tidal defences.
- Appropriate Authority means the relevant "Conservancy Council", or the relevant "Minister". In Scotland these would be "Scottish Natural Heritage" and the "First Minister".

Enforcement and Penalties

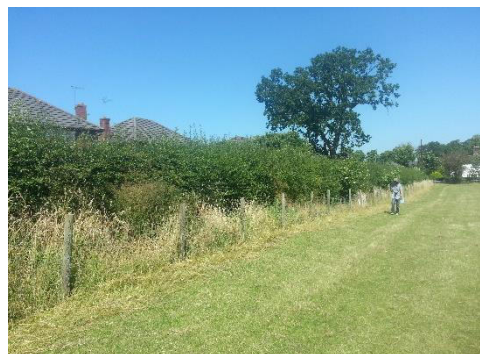
14. Where there are reasonable grounds for suspicion that there is an offence, a constable may without warrant stop and search any person or vehicle involved, and seize anything which may be evidence. In Scotland that person may be arrested if they give a satisfactory name and address.
15. A Person convicted of an offence or offences under the terms of the Act is liable to a term of imprisonment not exceeding six months per offence, and or a fine not exceeding level 5 (approx £5000).
16. Persons convicted of offences under the terms of the Act will have any badger, skin, and if the court sees fit, any weapon or article used in the commission of the offence forfeited.
17. Any dog used in the commission of an offence may be destroyed, and the offender disqualified from having custody of a dog, and made pay for the dogs destruction.

3.0 SITE DESCRIPTION

Land associated with the Bungalow known as Darland Lodge, Gamford Lane, Rossett, Wrexham, LL12 0BA site consists of semi-improved grass field areas located at grid reference SJ 577 378, between the villages of Lavister and Rossett. The section of field adjacent to Gamford Lane to the west is currently grazed by sheep and the area of field east of it comprises of cut grass for hay. Along Gamford Lane is a hawthorn hedgerow which has a small number of ash, oak, sycamore saplings and one small single horse chestnut. In the field side there is a one metre wide field margin which has been created when a stock-fence barrier has been installed. There are three partial poplar tree trunks, two which are still alive. The first field has been divided into two sections one for a hay crop the other for grazing. The northern boundary consists of a variation of exotic shrub and plants along the farm bungalow access drive-way. The southern side of the field has a tall set of leylandi trees and a large wood brash pile along the fence-line. The eastern boundary consists of stock fence and tall hawthorn trees. The north eastern boundary consist of the mown grass lawn orchard area which has a straight line of five fruit trees. This area is separated from the field with stock-fence and a hedgerow. This hedge row comprises of hawthorn, a little beech and a small number of hazel. The bungalow has a small neoprene lined wildlife pond which only eighteen inches deep. To the north on the opposite side of the site in Darland Wood is a large pond that is approximately two hundred metres from the closest part of the proposed development site. Further down Darland Lane to the north east of the site is another pond which was originally a World War II bomb site and has subsequently been landscaped in to a stocked fish pond.



Photograph 1. View of hedgerow along Gamford Lane



Photograph 2. View of hedgerow and field margin.



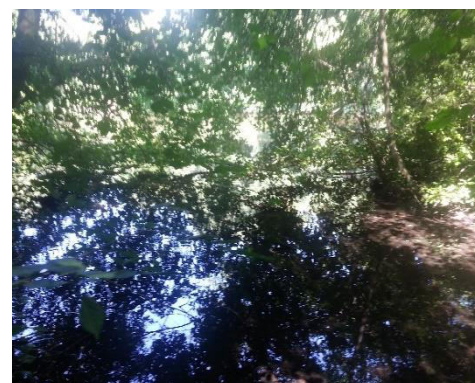
Photograph 3. View looking to north east of site.



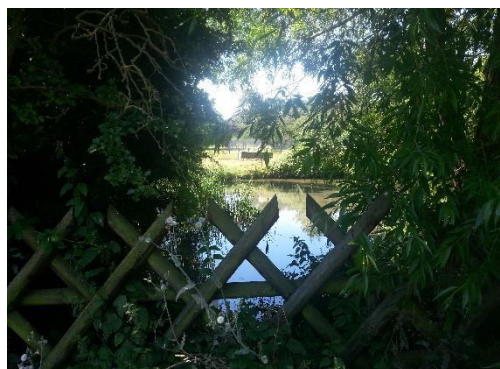
Photograph 4. View looking east across field



Photograph 5. View of hedgerow & mown hay @ north of site.



Photograph 6. View of woodland pond.



Photograph 7. View of garden roadside pond.



Photograph 8. View of hedgerow along Gamford Lane



Photograph 9. View of unusual nest site of wood pigeon nest in barn.

Figure 1. Site Boundary Plan.



Figure 2. showing Proposed Site Plan.



4.0 METHODOLOGY's

Habitat Survey Methods

The habitats surveyed on site were as follows: Semi-improved grass fields, hedgerow's, ponds, trees and road side verges. The habitat survey consisted of a site visit, a desk top survey, utilising maps and aerial photographs. The survey fields, pond and trees, recorded plant and animal species during the site visit. As recommended in the Handbook for Phase 1 habitat survey by the Nature Conservancy Council 1990 (reprinted by JNCC in 1993).

4.01 Amphibian/Reptile Methods

Reptiles

The site was surveyed for suitability for reptiles, looking for suitable refuge, potential egg laying sites, hibernation sites basking reptiles, data trawl and talking to local inhabitants collecting anecdotal evidence.

Amphibian

Access was granted to the wildlife pond, however full access was not available to the pond which is located to the north east of the site and could only be viewed from the roadside. The large woodland pond was viewed from the public footpath which runs around the edge of it. d

The methods used during survey consisted of an HIS assessment. Due to the time of year it was not possible to carry out egg search, bottle trapping, netting, torch search refuge search as recommended in the Great Crested Newt Conservation Handbook.

4.02 Owl & Bird Survey Methods

Daytime survey methods.

The signs looked for where visual sightings of birds or roosting owls, calls, hissing, screeching, pellets, splash marks, droppings and feathers.

4.03 Nesting Bird Methods

The, trees, shrubs, hedgerow and garden where surveyed for nesting birds during July 2016.

The daytime survey methods consisted of listening to the bird calls, identifying the different species within the sites boundaries, visual sightings of birds, alarm calls, pellets, splash marks, droppings and feathers. It also consisted of listening for bird song / calls, alarm calls, off the nest calls, last seasons and this seasons nests also any birds carrying food or nesting materials.

4.04 Bats Survey Methods

Survey methods

All trees were searched for hollows, cracks, ivy covering, loose bark and any defects. The signs looked for were as follows: bird nests, urine staining, droppings, feeding remains, disturbed cobwebs and visual sightings of owls or bats roosting.

4.05 Survey Methods for Badgers

The methods used during the survey were: looking for badger hair, prints/tracks, mammal paths, latrines, sett's, snuffle marks and visual sightings of badgers.

4.06 Equipment Used

The equipment used for the extended phase 1 survey: head lamp torch, ladder, 1 million candle power clue-lite, binoculars, map, pen and paper.

5.0 Survey Dates, Description & Weather and Temperature

Date	Survey Type	Daytime Nocturnal Weather	& Day Temp	Evening Temp
20 TH July 2016	Phase 1	Clear Sky & hot sunshine	27°	N/A

6.0 SURVEY RESULTS

6.01 OWL & BREEDING BIRD FINDINGS

No owl activity or signs were found in the proposed development footprint area during the July 2016 survey visit. However the owner of the site explained that he had witnessed a tawny owl hunting swallows in his hay loft during daylight in early evenings.

A ♀ blackbird (*Turdus merula*) were observed carrying food and flew across Gamford Lane to a garden hedgerow opposite the site. Swallows were nesting in the small out buildings around the farm yard. A wood pigeon nest with eggs was also observed outside the development area under a roof above the barns staircase. This nest is also outside the development footprint area.

For full species list of birds observed during survey visits, see Bird Result Table

6.02 BAT SURVEY RESULTS

No bat signs were found during the survey. No suitable defects were in any of the trees in the proposed work area.

6.03 AMPHIBIAN & REPTILE SURVEY RESULTS.

Amphibians

No evidence of Great Crested Newts in the wildlife pond at the time of the surveys, however a small number of smooth newts use the pond each year along with common frog.

The woodland pond has a very high population of European Eel's along with pike and perch with very little plant life in it. There is also a large number of water fowl (mallard ducks).

The bomb pit garden pond is stocked with numerous fish species, yet not having access permissions to the pond an acceptable HIS survey was not possible. The aquatic plant species that were visible from the roadside were Yellow flag Iris.

Reptile

No reptile were observed during the site visit survey. Anecdotal evidence was recorded from the owners of the site who are very much wildlife orientated about breeding grass snakes. For a number of years young grass snakes have been observed by them around the old midden-area which is located along the northern boundary just outside the development foot print. This area has some old animal bedding materials and rubble. On the opposite side of the field there is a large pile of felled timber and brash which may be a suitable hibernation site for grass snake. When they were asked if they ever see any slow worms they said “they have not seen any on their land but in the village church yard which is approximately one thousand metres from the site has a very good population of slow worm that they see frequently.

7.0 BADGER SURVEY RESULTS

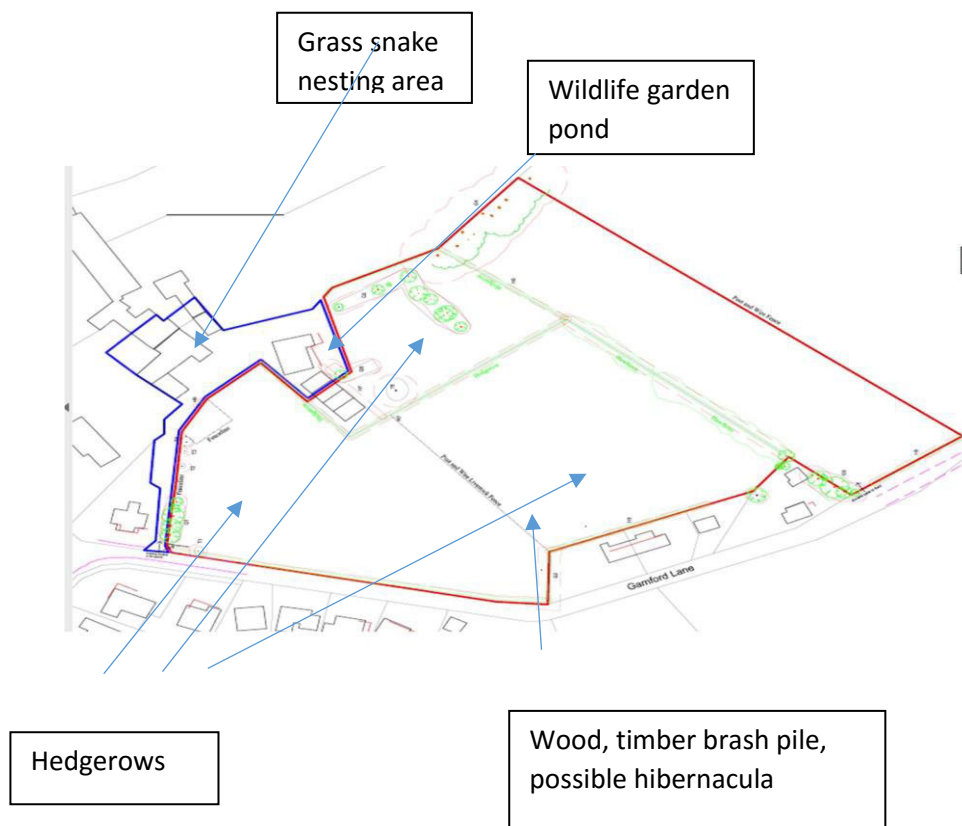
No signs of badger activity was observed within the grounds of the survey area. The signs looked for were badger hair, prints/tracks, mammal paths, latrines, sett's, snuffle marks and visual sightings of badgers. A possible badger sett was observed close to the public footpath and large woodland pond. No other sightings were made during the site visits.

8.0 HABITATS

The habitats to be found on and around this site are as follows:

Semi-improved grassland fields, broad leaved trees, hedgerow, pond, road side verges, and wood brash pile.

9.0 Figure 3. Target Notes Plan



Plan showing the key features to the Darland Lodge site.

10. SURVEY TABLES

10.1 VEGETATION SURVEY TABLE

COMMON NAME	SCIENTIFIC NAME	COMMENTS
Vegetation		
Spear thistle	<i>Cirsium vulgare</i>	Along field margin
Hawthorne	<i>Crataegus monogyna</i>	Dominant hedgerow species
Nettle	<i>Urtica dioica</i>	Along lane hedgerow
Creeping Thistle	<i>Cirsium arvense</i>	Field margin & lane verge
Ash	<i>Fraxinus excelsior</i>	Small numbers of sapling along lane hedgerow
Ivy	<i>Hedera helix</i>	Patch in lane hedgerow
Goose grass/clever	<i>Galium aparine</i>	Odd patch along lane hedgerow
Broad-leaved dock	<i>Rumex sanguineus</i>	Intermittent
Ragwort	<i>Senecio jacobaea</i>	Roadside verge & field margin
Ribwort/Narrow leaved plantain	<i>Plantago lanceolata</i>	Roadside verge
Sycamore	<i>Acer pseudoplatanus</i>	Odd sapling along lane hedgerow
Horse chestnut	<i>Aesculus hippocastanum</i>	Single sapling in lane hedgerow
Beech	<i>Fagus sylvatica</i>	Odd stunted plant in north eastern Hedgerow
Bramble	<i>Rubus fruticosus</i> agg	Patches in lane hedgerow
Dandelion	<i>Taraxacum officinale</i>	Roadside verge
Rose-bay-willow-herb	<i>Epilobium angustifolium</i>	Odd plant
Mosses	<i>Calogeron cuspidatum</i>	Along Lane hedgerow bottom
Apple tree	<i>Malus</i>	Garden orchard & driveway
Garlic hedge mustard	<i>Alliaria petiolata</i>	Lane hedgerow verge
Bitter sweet	<i>Solanum dulcanara</i>	Patches in hedgerow
Herb robert	<i>Geranium robertianum</i>	Roadside verge

Hogweed		In lane verge
Yarrow	<i>Achillea millefolium</i>	In lane verge
Ragwort	<i>Senecio jacobaea</i>	Odd plant in margin
Holly	<i>Ilex aquifolium</i>	Odd bush in lane hedgerow
Privot	<i>Ligustrum vulgare</i>	In amongst hawthorn lane hedgerow
Oak	<i>Quercus robur</i>	Three saplings along lane hedgerow

10.2 POND VEGETATION

Wildlife / Garden lined pond		
Yellow Iris	<i>Iris pseudacorus</i>	
Duck-weed	<i>Lemna minor</i>	Patches
Flote-grass	<i>Glyceria fluitans</i>	Patches

Woodland Pond		
Yellow Flag Iris	<i>Iris pseudacorus</i>	Odd plant

Bomb shell Pond		
Yellow Flag Iris	<i>Iris pseudacorus</i>	Floating mat & bank-side
Flote-grass	<i>Glyceria fluitans</i>	On bank-side
Duck-weed	<i>Lemna minor</i>	On pond

10.3. MAMALS RECORDED DURING SURVEY

Badger	<i>Meles meles</i>	Possible sett near woodland pond
Wood Mouse	<i>Apodymus sylvaticus</i>	Burrows/ under hedgerow

10.4 AMPHIBIAN DATA

Smooth Newt	<i>Trituris vulgaris</i>	Garden Wildlife Pond
Common Frog	<i>Rana temporaria</i>	Garden Wildlife Pond

10.5 REPTILE DATA

Grass Snake	<i>Natrix natrix</i>	Around site
Slow-worm	<i>Anguis fragilis</i>	Village Churchyard

10.6 BIRDS RECORDED DURING SURVEY

Common Name	Scientific Name	Resident/ migrant	Comments
Starling	<i>Sturnus vulgaris</i>	R	7 birds observed flew past site
Blackbird	<i>Turdus merula</i>	R	Carrying food
Carrion crow	<i>Corvus corone</i>	R	Pair observed over site
Blue tit	<i>Parus caeruleus</i>	R	2 in trees
Great tit	<i>Parus major</i>	R	3 observed
Tawny Owl	<i>Strix aluco</i>	R	Anecdotal
House sparrow	<i>Passer domesticus</i>	R	Farmyard
Wood pigeon	<i>Columa palumbus</i>	R	birds nesting in barn
Mallard	<i>Anas platyrynchos</i>	R	High numbers in woodland & bomb pit ponds

Moorhen	<i>Gallinula chloropus</i>	R	In both Woodland 7 bomb pit ponds
Swallow	<i>Hirundo rustica</i>		4 pair around farm buildings
Common buzzard	<i>Buteo buteo</i>	R	Pair with young begging for food
Wren	<i>Troglodytes troglodytes</i>	R	Near Farm
Goldfinch	<i>Carduelis carduelis</i>	R	Flock around site

11. RECOMMENDATIONS

Grass snakes are the only protected species to be identified as utilising the proposed development site along with nesting birds. The best practise will be to produce a reptile mitigation method statement and its implementation to ensure no animals are harmed during any of the construction phases of work. This can be achieved by erecting Temporary Reptile/Amphibian Exclusion Fence (TRAEF), with mats and tins placed in and around the development area. Also a careful destructive search of the large wood brash pile required.

Due to the time of the season and not having access permissions to survey two water bodies within the two hundred and fifty metre distance from the proposed development site. A GCN and HIS survey of the ponds has not been possible. However none of the three ponds are likely to be GCN breeding sites, due to numbers of fish in the woodland, bomb pit ponds and that they are almost at the 250m survey outer limit. The small garden wildlife pond does not have sufficient depth or vegetation to meet GCN's preferred requirements. However due to the grass snakes known to the area, mats and trays being set will enable the capture of them and their release safe receptor area away from the pending works. In the unlikely event a GCN is found beneath a mat or tin, all will would cease and the appropriate European Protected Species License from the Welsh Assembly Government would be applied for. Only when receipt of a EPSL would work commence.

12. BIBLIOGRAPHY

EXPLANATORY MEMORANDUM TO THE CONSERVATION OF HABITATS AND SPECIES (AMENDMENT) REGULATIONS 2012 2012 No. 1927

NBN Gateway Species Records (National Biodiversity Network).

Google Earth

Biodiversity Audit of North West England 1999 Regional Biodiversity Steering Group
for North West England

Great Crested Newt Habitat Suitability Index. Oldham *et a.* (2000) & modified version by
Mr Lee Brady

Collins Field Guide of Amphibians and Reptiles (*Trevor Beebee and Richard Griffiths*
2000).

The New Naturalist, Collins Harper.

Collins Field Guide. *Nests, Eggs & Nestlings Of Britain & Europe*

Colin Harrison & Peter Castell.

Collins Pocket Guide. *Birds of Britain & Europe.* Hermann Heinzel, Richard Fitter and
John Parslow

Collins Field Guide of Trees

Collins Complete British Wildlife by Paul Sterry

Bat Workers Manual

The Bat Conservation Trust (BCT) Good Practise Guidelines 2016.