Whitcher Wildlife Ltd.
Ecological Consultants.

GREEN ROAD, DODWORTH.

OS REF: SE 314 050.

ECOLOGICAL IMPACT ASSESSMENT.

Ref No: **220423/EcIA.**

Date: **19th January 2023.**

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1. INTRODUCTION.

1.1. An application is being prepared for the development of an area of land off Green Road, Dodworth.

1.2. 1.2. Whitcher Wildlife Ltd was commissioned to carry out a Preliminary Ecological Appraisal of the site to establish whether there are any issues that may affect the proposed works.

1.3. That survey was carried out on 25th April 2022. During that survey, the site was assessed to provide potential value for foraging and commuting bats and further bat transect and automated surveys were recommended. Those surveys were carried out over a course of six months from May to October inclusive.

1.4. This Ecological Impact Assessment (EcIA) has been prepared based on the findings of the surveys carried out to date and outlines all relevant mitigation and enhancements that will be incorporated into the proposed development.

1.5. Appendices I to III of this report provides additional information on specific species and are designed to assist the reader in understanding the contents of this report.

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2. SURVEY METHODOLOGY.

2.1. Prior to visiting the site, the survey area was cross referenced to maps and aerial photographs to give a general idea of the habitats and potential issues within the area and to identify potential access and walking routes.

2.2. The survey area was walked where access was agreed and public rights of way were used where no access was agreed. All habitats within and immediately around the survey area were documented and the dominant species within that habitat listed in line with the JNCC Handbook for Phase 1 Habitat surveys.

2.3. The survey area and immediate surrounding area was thoroughly searched for evidence of badger (*Meles meles*) activity by looking for the following signs in line with Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*. Mammal Society: -

* Badger setts.
* Badger latrines or dung pits.
* Badger snuffle holes and evidence of foraging.
* Badger paths.
* Badger prints in areas of soft mud.
* Badger hairs caught on fencing.

2.3. The survey area was searched for watercourses and where found all watercourses within the survey area and for approximately 100m in each direction were thoroughly searched for evidence of water vole (*Arvicola amphibius*) activity by looking for the following signs, in line with Dean M, Strachen R, Gow D and Andres R (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series).* Eds Fiona Mathews and Paul Chanin. The mammal Society, London: -

* Water vole burrows.
* Water vole faeces and latrines.
* Water vole feeding stations.
* Water vole runs.
* Water vole prints in areas of soft mud.
* Water vole lawns.
* Predator field signs.

2.5. The survey area was searched for watercourses and where found all watercourses within the survey area and for approximately 50m in each direction were thoroughly searched for evidence of otter (*Lutra lutra*) activity by looking for the following signs in line with the P Chanin (2003). *Monitoring the Otter* and *Conserving Natura 2000 Rivers: Monitoring Series No10 Guidelines: -*

* Otter prints in soft mud.
* Otter spraints.
* Otter Holts.

2.6. The survey area was searched for watercourses and waterbodies. Where found, and where safe to enter the water, all were thoroughly searched for the presence of crayfish, for approximately 50m in each direction of the site, by searching under rocks and logs. Where stated, crayfish traps were also deployed into the watercourse. All survey work was carried out in accordance with the *Conserving Natural 2000 Rivers Monitoring Series No 1, Protocol for Monitoring the White Clawed Crayfish*.

2.7. The survey area was searched for trees and structures and where found these were checked for potential bat roosting sites in line with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)* by looking for the following signs: -

* Holes, cracks or crevices.
* Bat Droppings.

2.8. The land immediately adjacent to the survey area was assessed for bat roosting potential and bat foraging potential. Connective routes and flight lines were also assessed whilst on site and using maps of the area.

2.9. The area within 500m of the survey site was cross referenced to maps to highlight all ponds close to the site. Where possible, all ponds identified were accessed using agreed access or public rights of way to assess the potential for great crested newts (*Triturus cristatus*) to be present.

2.10. The survey area was assessed for the potential for reptiles and suitable reptile habitats. Where applicable the area was also searched for the presence of reptiles.

2.11. Where appropriate, the habitat within and surrounding the survey area was searched for species such as hazel, oak, honeysuckle, bramble and other species which may provide potential habitat for hazel dormice (*Muscardinus avellanarius*). Field signs such as feeding remains and nests were also searched for where possible,

in line with P Bright, P Morris and T Mitchell-Jones *The Dormouse Conservation Handbook 2nd Edition*.

2.12. Where appropriate, the area within and surrounding the survey area was assessed for its potential to house habitat for red squirrels. Field signs of red squirrels were searched for at least every 50m, looking for any dreys, feeding signs or sightings of red squirrels.

2.13. All surveys were carried out in line with the Chartered Institute of Ecological and Environmental Management (CIEEM) survey standards and advice.

2.14. This document is prepared in line with The National Planning Policy Framework (NPPF). This sets out the government policy on biodiversity and nature conservation and places a duty on Planning Authorities to give material consideration to the effect of a development on legally protected species when considering planning applications. The NPPF and the Planning Practice Guidance on "Natural Environment" also promote sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within the development.

2.15. This report is prepared in line with the Natural Environment and Rural Communities (NERC) Act that came into force on 1st Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England.

2.16. This survey was carried out by Ruth Georgiou BSc MCIEEM. Since 2004 Ruth has had experience in a professional capacity as a Wildlife Consultant carrying out ecology surveys and phase I habitat surveys. As a full member of CIEEM Ruth is subject to peer review on an annual basis. Ruth holds Natural England survey licences in respect of bats, great crested newts and white clawed crayfish and has held her own or has been named ecologist on site specific licences for badgers, great crested newts and bats. She also holds a degree in Environmental Science (BSc) and has successfully completed a number of courses run by CIEEM, BCT and FSC in the relative protected species, carrying out phase I habitat surveys and BREEAM assessments.

2.17. Bat Transect/Automated Surveys:

2.17.1. A suitable transect route was identified across the site with stop points identified along the route providing a snapshot of activity in various separate habitats.

2.17.2. The transect route was walked on several occasions throughout the season in line with L Hundt (2012). *Bat Conservation Trust Good Practice Guidelines* based on the value of the habitats present.

2.17.3. During each transect survey static Anabat Express units were erected at several points along the transect route in line with L Hundt (2012). *Bat Conservation Trust Good Practice Guidelines.* These static units remained in place for a period of at least five consecutive days.

2.17.4. All survey work was carried out in line with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition).*

2.17.5. These surveys were carried out by:

James Campbell MCIEEM. Since 2003 James has had experience in a professional capacity as a Wildlife Consultant carrying out Ecology Surveys and Phase 1 Habitat surveys and is a full member of CIEEM. James holds licences with several licensing bodies including: -

- Natural England Survey Licences in respect of bats, great crested newts, white clawed crayfish and barn owls.
- Scottish Natural Heritage Licences in respect of bats and great crested newts.
- Countryside Council for Wales Licences in respect of bats and great crested newts.

He has also successfully completed numerous courses run by CIEEM, BCT and FSC regarding protected species and in carrying out Phase 1 Habitat surveys. He is also confined spaces trained and qualified to NVQ Level 2 in tree climbing and aerial rescue.

and

Mitchel Greenhalgh, a wildlife consultant with an array of experience in conducting ecological surveys on a variety of flora and fauna in a professional capacity. Mitchel holds a Natural England survey licence in respect of bats and has attended courses run by CIEEM and the FSC. Mitchel also holds a BSc in environmental science attained from the University of Leeds and he is a qualifying member of CIEEM.

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3. SURVEY RESULTS.

3.1. Data Search Results.

3.1.1. A data search request was submitted to the Barnsley Biological Record Centre for records of protected species or designated sites within 2km of the survey area.

3.1.2. The results show that there are various records of common birds in the area. The most relevant species record is a record of hedgehog within 100m of the survey area. No other relevant species records were provided.

3.1.3. The results also show that there are no statutory designated sites within 2km.

3.1.4. There are five Barnsley Local Wildlife Sites within the 2km radius. The closest of these lies 830m from the closest point of the site. The remaining sites lie further away and extend over the 2km buffer.

3.1.5. A data search request was submitted to the South Yorkshire Bat Group for any existing records of bat roosts within 2km of the survey area.

3.1.6. The results show a number of bat roost records within the 2km radius, but none lie within the red line boundary of the site.

3.1.7. The closest records are four separate Pipistrelle bat roosts recorded in bungalows/houses along Strafford Walk, the closest of which seems to be a property adjacent to the south east corner of the survey area. The rest are located approximately 50m, 200m and 360m from the closest point of the survey area.

3.1.8. There is a record of a maternity bat roost (species unknown) on Nostell Fold approximately 150m from the closest point of the survey area.

3.1.9. The next closest bat roost is located on St Johns Close approximately 185m from the survey area. All other roost records are located in excess of 185m from the closest point of the site.

3.1.10. The species recorded within 2km of the site include Common Pipistrelle, Soprano Pipistrelle, Noctule, Serotine, Leislers, Brown Long Eared, Whiskered, Natterers and Daubentons.

3.1.11. A data search was submitted to the South Yorkshire Badger Group for records of any existing badger setts within 2km of the survey area. The results show there are records of badger setts in the Silkstone and Stainborough area, but no records on or adjacent to the survey area.

3.1.12. Full copies of the data search results can be provided upon request but must not be placed in the public domain.

3.2. The Surveyed Area.

3.2.1. The survey area is located on the edge of the town of Dodworth, surrounded by residential properties, tree lines and open fields. In the wider surrounding area there are areas of woodland and industrial areas.

3.2.2. The aerial map below shows the location of the survey area, circled in red, and the surrounding area.

3.2.3. The survey area comprises three parcels of land owned by three separate properties that lie adjacent, but the existing main properties will be retained with just some of the land associated with them being developed.

3.2.4. The limits of the survey area are outlined in red in the aerial map below.

3.3. Description of Habitats.

3.3.1. Appendix IV of this report contains annotated maps marked up with the varying habitats that are cross referenced to target notes in Appendix V of this report. The habitats are described below, with a condition assessment table provided. The full description of each criteria provided in Appendix VI of this report. The habitats on and adjacent to the site are: -

- Dense Scrub
- Improved Grassland
- Tall Ruderal Herb
- Semi Improved Neutral Grassland
- Bare Ground
- Broadleaved Woodland
- Scattered Trees
- Building

- Running Water
- Species Poor Intact Hedgerow
- Wall
- Fence

3.3.2. Dense Scrub.

3.3.2.1. There are various areas of dense scrub across the site. S1: At the northern end of the site, there is a large garden that has some areas that have been left untended and have become very much overgrown with natural scrub species, predominantly bramble *(Rubus fruticosus)*, with some elder *(Sambucus nigra)*, cleavers *(Galium aparine)*, nettle *(Urtica dioica)*, holly *(Ilex aquifolium)*, privet *(Ligustrum sp)*, dock *(Rumex sp)*, cow parsley *(Anthriscus sylvestris)*, hebe *(Hebe sp)*, rosebay willowherb *(Chamerion angustifolium)* and forsythia *(Forsythia sp)*.

3.3.2.2. The photographs below demonstrate these areas of scrub associated with the garden.

3.3.2.3. S2: There is also some scrub habitat that extends along the banks of the watercourse that flows across the middle of the site. This scrub includes bramble *(Rubus fruticosus)*, elder *(Sambucus nigra)*, hawthorn *(Crataegus monogyna)*, buddleia *(Buddleja sp)* and tree saplings including horse chestnut *(Aesculus hippocastanum)*, sycamore *(Acer pseudoplatanus)* and ash *(Fraxinus excelsior)*. There is a ground flora throughout the scrub habitat that includes nettle *(Urtica dioica)*, rosebay willowherb *(Chamerion angustifolium)*, cleavers *(Galium aparine)*, cow parsley *(Anthriscus sylvestris)*, nettle *(Urtica dioica)*, ivy *(Hedera helix)* and lesser celandine *(Ficaria verna)*.

3.3.2.4. The photographs below show the scrub habitat along the watercourse.

3.3.2.5. S3: Finally, there is an expanse of scrub habitat that extends throughout the area of land on the southern part of the site. This is bramble *(Rubus fruticosus)* scrub that is gradually encroaching across the grassland habitat in the centre of this area. This is partly shown in the photograph below.

3.3.2.6. A summary of the condition assessment of these habitats is provided below:

Condition Assessment Criteria	**Condition Achieved (Y/N)**		
	S1	**S2**	**S3**
1 – Representative of UKHab description	N	N	N
2 – Age range	N	N	N
3 – Non-native species	N	N	N
4 – Edge vegetation	N	N	N
5 – Clearings, glades or rides	N	N	N
Condition Assessment:	**Poor**	**Poor**	**Poor**

3.3.3. Improved Grassland.

3.3.3.1. The areas of improved grassland habitat mapped on the site are areas of grassland that are used as lawns associated with private houses. These are regularly mown and therefore the grassland is very short. This is demonstrated in the photographs below.

3.3.3.2. The species within this habitat are common species that are associated with garden lawns, including perennial ryegrass *(Lolium perenne)*, Yorkshire fog *(Holcus lanatus)*, fescue *(Festuca sp)*, annual meadow grass *(Poa annua)*, clover *(Trifolium repens)*, dandelion *(Taraxacum officinale)*, creeping buttercup *(Ranunculus repens)*, daisy *(Bellis perennis)*, ribwort plantain *(Plantago lanceolata)* and field woodrush *(Luzula campestris)*. There is also some lesser celandine *(Ficaria verna)* growing in this grassland where it extends close to the watercourse that flows across the middle of the site.

3.3.3.3. A summary of the condition assessment of this habitat is provided below:

Condition Assessment Criteria	**Condition Achieved (Y/N)**
1 – Species per m2	N
2 – Sward height	N
3 – Scattered scrub cover	Y
4 – Physical damage	Y
5 – Bare ground	Y
6 – Bracken cover	Y
7 – Non-native species	Y
Condition Assessment:	**Moderate**

3.3.4. Tall Ruderal Herb.

3.3.4.1. There is tall ruderal herb growing in two main areas across the site. TR1: One is along part of the north bank of the watercourse that flows across the middle of the site. This is predominantly nettle *(Urtica dioica)*, rosebay willowherb *(Chamerion angustifolium)* and ivy *(Hedera helix)* with some sparse bramble *(Rubus fruticosus)*. This is shown in the photograph below.

3.3.4.2. TR2: The second area of tall ruderal herb extends along the southern end of the site. This area is generally wet and also lies adjacent to another watercourse that flows along/outside the southern boundary of the survey area. The species growing across this area includes lesser celandine *(Ficaria verna)*, nettle *(Urtica dioica)*, rosebay willowherb *(Chamerion angustifolium)*, cleavers *(Galium aparine)*, Himalayan balsam *(Impatiens glandulifera)*, dock *(Rumex sp)*, garlic mustard *(Alliaria petiolata)*, hairy bittercress *(Cardamine hirsuta)* and ivy *(Hedera helix)*. This area is shown in the photograph below.

3.3.4.3. A summary of the condition assessment of these habitats is provided below:

Condition Assessment Criteria	**Condition Achieved (Y/N)**	
	TR1	**TR2**
1 – Vegetation structure	N	N
2 – Flowering plant species	N	N
3 – Non-native species	Y	N
Condition Assessment:	**Poor**	**Poor**

3.3.5. Semi Improved Neutral Grassland.

3.3.5.1. There is one area of semi improved neutral grassland that lies in the southern part of the site and it is enclosed by dense bramble *(Rubus fruticosus)* scrub that is

gradually superseding the grassland habitat. The grassland is predominantly tufted hair grass *(Deschampsia cespitosa)*, cocksfoot *(Dactylis glomerata)* and meadow foxtail *(Alopecurus pratensis)* with some occasional cow parsley *(Anthriscus sylvestris)*, thistle *(Cirsium sp)*, Yorkshire fog *(Holcus lanatus)*, common hogweed *(Heracleum sphondylium)* and bittercress *(Cardamine sp)*.

3.3.5.2. This grassland appears to have been subject to some level of management in recent history, with historic maps showing that the area has been cut in the past. The species composition suggests that there has been some level of management of this area.

3.3.5.3. A summary of the condition assessment of this habitat is provided below:

Condition Assessment Criteria	**Condition Achieved (Y/N)**
1 – Matches specific grassland type	N
2 – Sward height	Y
3 – Bare ground	Y
4 – Bracken cover	Y
5 – Non-native species	Y
6 – Species per m2	N
Condition Assessment:	**Moderate**

3.3.6. Bare Ground.


The areas of bare ground habitat that have been mapped refer to areas of hard standing drive way and paths associated with the private housing, and areas of bare ground where some investigation works have been carried out and now comprises just bare earth.

3.3.7. Broadleaved Woodland.

3.3.7.1. There is an area of woodland at the southern end of the survey area. This is a small, wooded bank that extends down towards the watercourse that flows along/outside the southern boundary of the site. This bank of trees is linked into other woodland habitat.

3.3.7.2. The woodland habitat is predominantly sycamore *(Acer pseudoplatanus)* trees with some holly *(Ilex aquifolium)*, hawthorn *(Crataegus monogyna)* and willow *(Salix sp)*. The ground flora includes ivy *(Hedera helix)*, lesser celandine *(Ficaria verna)*, cleavers *(Galium aparine)*, bramble *(Rubus fruticosus)* and ferns.

3.3.7.3. A summary of the condition assessment of this habitat is provided below:

Attributes and functional groupings	**Score per indicator**
1 – Age distribution of trees[1]	1
2 – Wild, domestic and feral herbivore damage	3
3 – Invasive plant species[3]	2
4 – Number of native tree species	2
5 – Cover of native tree and shrub species	3
6 – Open space within woodland[4]	3
7 – Woodland regeneration[5]	1
8 – Tree health	3
9 – Vegetation and ground flora	1
10 – Woodland vertical structure[6]	1
11 – Veteran trees[7]	1
12 – Amount of deadwood	1
13 – Woodland disturbance[8]	3
Total:	25
Condition Assessment:	**Poor**

3.3.8. Scattered Trees.

3.3.8.1. There are various scattered trees across the site, predominantly along the boundaries. These include hawthorn *(Crataegus monogyna)*, sycamore *(Acer pseudoplatanus)* and ash *(Fraxinus excelsior)*. Some of these are shown in the photographs below.

3.3.8.2. A summary of the condition assessment of the scattered trees across the site is provided below:

Condition Assessment Criteria	Condition Achieved (Y/N)
1 – Native species	N
2 – Tree canopy	N
3 – Mature/veteran trees	N
4 – Anthropogenic activities	Y
5 – Micro-habitats	Y
6 – Ground vegetation	Y
Condition Assessment:	**Moderate**

3.3.8.3. There are two tree lines associated with the garden habitats. One tree line, referenced TL1, forms a boundary between the two properties at the northern end of the site, which is a line of red cedar *(Thuja plicata)* trees with some elder *(Sambucus nigra)*. This tree line is approximately 12m in height and fairly dense, as shown in the photograph below.

3.3.8.4. There is another treeline, referenced TL2, that extends along the western boundary of the property at the north west end of the site. This is a line of mature horse chestnut trees *(Aesculus hippocastanum)*, as shown in the photograph below.

3.3.8.5. The above tree line links into a tree line that extends along the western bank of the watercourse that flows across the middle of the site (TL3). That tree line is predominantly sycamore *(Acer pseudoplatanus)* with some holly *(Ilex aquifolium)* and ash *(Fraxinus excelsior)* and an understorey of scrub that has already been described in this report.

3.3.8.6. A summary of the condition assessment of these habitats is provided below:

Condition Assessment Criteria	Condition Achieved (Y/N)		
	TL1	**TL2**	**TL3**
1 – Native species	N	N	N
2 – Tree canopy	Y	Y	Y
3 – Mature/veteran trees	N	Y	N
4 – Adjacent vegetation	N	N	N
5 – Tree health	Y	Y	Y
Condition Assessment:	**Poor**	**Moderate**	**Poor**

3.3.9. Building.

There are four structures within the survey area. These include one double garage, one garden shed, one small storage cage and a green house. These are addressed separately in the bat survey results section.

3.3.10. Running Water.

3.3.10.1. There are two watercourses within or close to the survey area. One of these flows straight through the middle of the survey area. This flows through a deep channel that appears to have been deepened to accommodate more water during high levels of rainfall. The banks are mostly shaded and bare or have some ivy *(Hedera helix)*, nettle *(Urtica dioica)* or bramble *(Rubus fruticosus)* growing. The water was very shallow at the time of this survey, an average depth of approximately 5cm with a moderate flow over a stony bed. This watercourse is shown in the photograph below.

3.3.10.2. The other watercourse flows along/just outside the southern boundary of the site. This is a slow flowing watercourse, up to 12cm deep at the time of this survey with a silt bed. It is approximately 1.5m wide and the banks are shallow and mostly shaded with some tall ruderal herb species growing as previously described in this report. This watercourse is shown in the photograph below.

3.3.11. Species Poor Intact Hedgerow.

3.3.11.1. There are three hedgerows within the survey area. The first of these forms a boundary between the gardens of the two properties at the northern end of the site and is referenced H1. It is approximately 27m in length. This hedgerow comprises predominantly hawthorn *(Crataegus monogyna)* with individual stands of sycamore *(Acer pseudoplatanus)*, holly *(Ilex aquifolium)*, rowan *(Sorbus aucuparia)* and yew *(Taxus baccata)*. This hedgerow is approximately 10m high and 4m wide, as shown in the photograph below.

3.3.11.2. There is another small length of hedgerow, referenced H2, on the eastern boundary of the site, only 19m in length. This is a conifer hedge approximately 3m high. This can just be seen in the photograph below.

3.3.11.3. Lastly, there is a hedgerow extending along two sides of an area of improved grassland that is used as a garden area, referenced H3, approximately 35m in length. This is an ornamental laurel *(Laurus nobilis)* hedgerow, approximately 2m high and 1m wide, with a gap in the middle.

3.3.11.4. A summary of the condition assessment of these habitats is provided below:

Attributes and functional groupings	**Condition Achieved (Y/N)**		
	H1	**H2**	**H3**
A1 – Height	Y	Y	Y
A2 – Width	Y	Y	N
B1 – Gap – hedge base	N	N	N
B1 – Gap – hedge base	Y	Y	N
C1 – Undisturbed ground and perennial vegetation	N	N	N
C2 – Undesirable perennial vegetation	N	N	N
D1 – Invasive neophyte species	Y	Y	Y
D2 – Current damage	Y	Y	Y
Condition Assessment:	**Poor**	**Poor**	**Poor**

3.3.12. Wall.

There are various sections of wall across the site. These comprise a mix of low and overgrown brick and stone walls. Some of these are shown in the photographs below.

3.3.13. Fence.

There are various boundary fences around the site, some of which are shown in the photographs below.

3.4. Description of Fauna.

3.4.1. No badger setts or badger field signs were identified within the survey area.

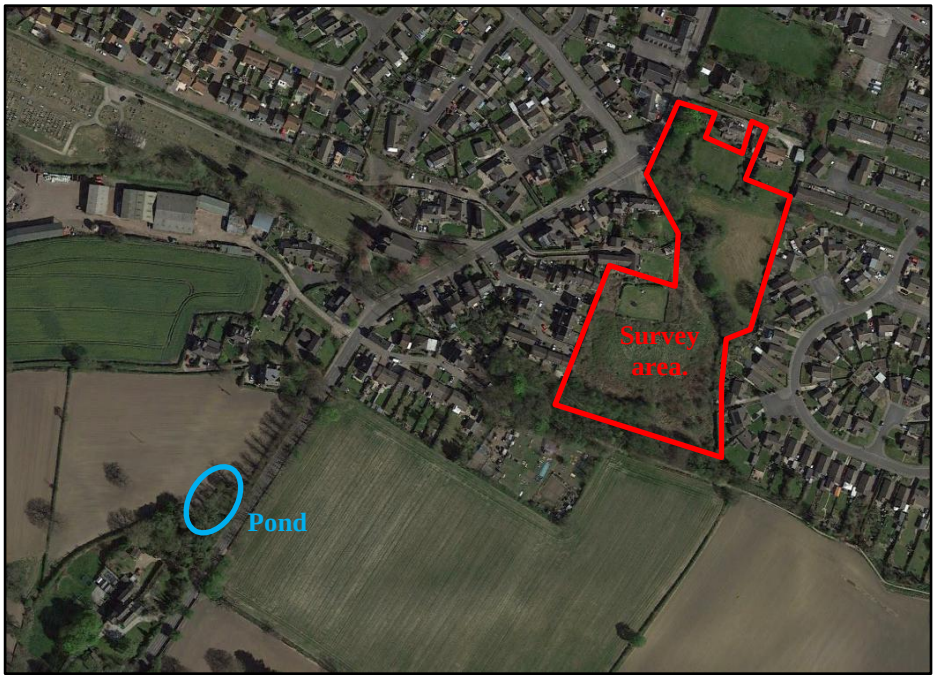
3.4.2. There are two watercourses within the survey area. Both watercourses lack suitable vegetation cover and species that are typically suitable for water voles. No water vole burrows, otter holts or any field signs for these species were identified along either watercourse.

3.4.3. The watercourses are assessed as unsuitable habitat for white clawed crayfish as both watercourses are shown to be heavily fragmented on maps of the area and there are no records for the species in the area.

3.4.4. One pond is shown on maps located approximately 230m from the south west corner of the survey area. This is located on private land and is not visible from the adjacent public road. Therefore, it is not possible to assess the pond for potential for great crested newts. Maps show that the pond is located in a patch of woodland. A main road extends between the pond and the survey area that is likely to act as a barrier to the movement of newts, as well as some other residential houses. If newts were to cross the main road, there is no direct access for them to the site. They would have to move around residential properties and boundaries. For this reason, as there is good terrestrial habitat close to the pond it is assessed as highly unlikely that great

crested newts would be present within the survey area and will not be considered further in this assessment.

3.4.5. The location of the pond in relation to the survey area is shown in the map below.



3.4.6. There are four ‘buildings’ that have been mapped within the survey area. These are each addressed separately below.

3.4.7. Building 1 is a double garage as shown below. This is a single storey building with a flat felt roof and pebble dash walls with wooden fascias. The roof, walls and fascias are all well sealed and therefore this is assessed to provide negligible potential for roosting bats.

3.4.8. Building 2 is a small wooden shed, as shown below. It has a flat, felt covered, wooden roof that is in very poor condition and very much dilapidated. This is assessed to provide negligible potential for roosting bats.

3.4.9. Building 3 is a caged structure, shown below, that is used to lock up garden equipment as shown in the photograph below.

3.4.10. Building 4 is a standard greenhouse that is constructed entirely of glass and very much overgrown on all sides. It provides negligible potential for roosting bats and is shown below.

3.4.11. None of the walls within the survey area provide any suitability for roosting bats.

3.4.12. There are a number of trees within the survey area. It was not possible to undertake a thorough inspection of all trees due to the high number, but no obvious features that provide potential for roosting bats were identified.

3.4.13. Some of the horse chestnut trees along the boundary in the north west corner of the site display some loose bark that could potentially be used by individual opportunistic bats. Also, there are a number of trees that have a cover of ivy on the main trunk. Such trees described above are all assessed to provide low potential for roosting bats.

3.4.14. The survey area was assessed for potential for foraging and commuting bats. The southern part of the site is heavily vegetated with scrub, woodland and trees. This provides some good foraging potential for bats. The northern part of the site is mostly improved grassland that isn't ideal for foraging bats.

3.4.15. The tree lines and hedgerows across the site also provide some potential commuting routes across and around the site.

3.4.16. With the number of bat roost records in close proximity to the site, including a maternity roost, the survey area is assessed to provide moderate suitability for foraging and commuting bats.

3.4.17. There is potential for nesting birds in the vegetation, walls and buildings within the survey area. A nesting bird survey was not included in this initial PEA as the results are only valid for a couple of days but bird activity was noted across the site in the areas of dense vegetation.

3.4.18. The survey area is assessed to provide some potential habitat for reptiles, although the site is relatively isolated from other areas of suitable reptile habitat. The only connectivity to the site is along a the woodland corridor to the south end of the site. There are no records of reptiles in the area. Therefore, it is assessed that there is low potential for low numbers of common reptile species on the site.

3.4.19. The survey area lies outside the natural range of hazel dormouse therefore there are no hazel dormouse present within the survey area.

3.4.20. There are no habitats within the survey area suitable for red squirrel and the site lies outside the natural range of the species.

3.4.21. There are records of hedgehog in the area. The nature of the site provides some potential habitat for hedgehogs, although none were identified during this survey.

3.4.22. Three invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981) were identified within the survey area.

3.4.23. A large clump of rhododendron was identified growing in one of the gardens at the north end of the site, shown in the photograph below.

3.4.24. One cotoneaster plant was identified growing on the eastern site boundary, shown in the photograph below.

3.4.25. Lastly, what appears to be Himalayan balsam seedlings were identified growing on the ground adjacent to the watercourse that flows along/outside the southern boundary of the survey area. These are shown in the photograph below.

3.5. Bat Survey Transect Results.

3.5.1. Transect Survey Results.

3.5.1.1. Six transect surveys were carried out during 2022. These were carried out during the months of May, June, July, August, September and October.

3.5.1.2. The aerial photograph below shows the bat transect survey route and stopping points. During each survey the site is walked, pausing for five minutes at each stopping point and recording bat activity throughout.

3.5.1.3. Each transect was walked by a Whitcher Wildlife Ltd ecologist and holder of a Natural England bat class licence to survey for bats. The surveyor was equipped with a Batbox Duet detector and also an Anabat recorder, which records bat activity for subsequent computer analysis using Analook Software.

3.5.1.4. The table below show the observations of the surveyors and recordings of the Anabats against the route and stopping points.

Table 1. Transect Survey Results, 31st May 2022.

The May transect survey was carried out by James Campbell. Sunset on the night of the survey was at 21.23. The weather at the time of the survey was overcast but still (BWS 1) with a temperature of 14°C at the beginning of the survey.

Location	Time (start-end)	Surveyor Results.	Anabat Recordings.
Stop 1.	21.23-21.28	21.26 Common Pipistrelle flow over the site from the northeast to the southwest.	21.26 Common Pipistrelle. 21.27 Common Pipistrelle.
Walk.	21.28-21.29	No bat activity.	No recordings.
Stop 2.	21.29-21.34	No bat activity.	No recordings.
Walk.	21.34-21.35	No bat activity.	No recordings.
Stop 3.	21.35-21.40	No bat activity.	No recordings.
Walk.	21.40.21.41	No bat activity.	No recordings.
Stop 4.	21.41-21.46	No bat activity.	No recordings.
Walk.	21.46-21.47	No bat activity.	No recordings.
Stop 5.	21.47-21.52	21.49 Common Pipistrelle foraging along the central tree line north to south.	21.49 Common Pipistrelle. 21.50 Common Pipistrelle. 21.50 Common Pipistrelle.
Walk.	21.52-21.53	No bat activity.	No recordings.
Stop 6.	21.53-21.58	No bat activity.	No recordings.
Walk.	21.58-21.59	No bat activity.	No recordings.
Stop 7.	21.59-22.04	No bat activity.	No recordings.
Walk.	22.04-22.06	No bat activity.	No recordings.
Stop 8.	22.06-22.11	No bat activity.	No recordings.
Walk.	22.11-22.12	No bat activity.	No recordings.
Stop 9.	22.12-22.17	No bat activity.	No recordings.
Walk.	22.17-22.18	No bat activity.	No recordings.
Stop 10.	22.18-22.23	No bat activity.	No recordings.
Walk.	22.23-22.24	No bat activity.	No recordings.
Stop 11.	22.24-22.29	No bat activity.	No recordings.
Walk.	22.29-22.30	No bat activity.	No recordings.

Stop 12.	22.30-22.35	No bat activity.	No recordings.
Walk.	22.35-22.36	No bat activity.	No recordings.
Stop 13.	22.36-22.41	No bat activity.	No recordings.
Walk	22.41-22.42	No bat activity.	No recordings.
Stop 14.	22.42-22.47	No bat activity.	No recordings.
Walk.	22.47-22.48	No bat activity.	No recordings.
Stop 15.	22.48-22.53	No bat activity.	No recordings.
Walk.	22.53-22.55	No bat activity.	No recordings.
Stop 16	22.55-23.00	No bat activity.	No recordings.
Walk.	23.00-23.03	No bat activity.	No recordings.

Table 2. Transect Survey Results, 24th June 2022.

The June transect survey was carried out by Mitch Greenhalgh. Sunset on the night of the survey was at 21.40 with the survey extending from 21.40 to 23.10. The weather at the time of the survey was fine with a moderate breeze (BWS 2) with a temperature of 18°C at the beginning of the survey.

Location	Time (start-end)	Surveyor Results.	Anabat Recordings.
Stop 1.	21:40 – 21:45	No bat activity.	No recordings.
Walk.	21:45 – 21:46	No bat activity.	No recordings.
Stop 2.	21:46 – 21:51	No bat activity.	No recordings.
Walk.	21.51 – 21.52	No bat activity.	No recordings.
Stop 3.	21:52 – 21:57	Two Common Pipistrelle bats continuously foraging along tree line. 21:55 Common Pipistrelle flew over east to west.	21:53 Common Pipistrelle x 3 21:54 Common Pipistrelle x 4 21:55 Common Pipistrelle x 3 21:56 Common Pipistrelle
Walk.	21.57 – 21.58	No bat activity.	No recordings.
Stop 4.	21:58 – 22:03	No bat activity.	No recordings.
Walk.	22:03 – 22:04	No bat activity.	No recordings.
Stop 5.	22:04 – 22:09	No bat activity.	No recordings.
Walk.	22:09 – 22:10	No bat activity.	22:10 Common Pipistrelle x 3

Stop 6.	22:10 – 22:15	No bat activity.	22:11 Common Pipistrelle x 4 22:12 Common Pipistrelle x 3 22:13 Common Pipistrelle x 4 22:14 Common Pipistrelle x 4 22:15 Common Pipistrelle x 4
Walk.	22:15 – 22:16	No bat activity.	22:16 Common Pipistrelle x 5 22:17 Common Pipistrelle x 4 22:18 Common Pipistrelle x 3
Stop 7.	22:16 – 22:21	22:16 – 22:18 Common Pipistrelle foraging along tree line. 22:18 – Common Pipistrelle passed over east to west.	21:19 Common Pipistrelle
Walk.	22:21 – 22:22	No bat activity.	No recordings.
Stop 8.	22:22 – 22:27	No bat activity.	No recordings.
Walk.	22:27 – 22:28	No bat activity.	No recordings.
Stop 9.	22:28 – 22:33	No bat activity.	No recordings.
Walk.	22:33 – 22:34	No bat activity.	No recordings.
Stop 10.	22:34 – 22:39	No bat activity.	No recordings.
Walk.	22:39 – 22:40	No bat activity.	No recordings.
Stop 11.	22:40 – 22:45	No bat activity.	No recordings.
Walk.	22:45 – 22:46	No bat activity.	No recordings.
Stop 12.	22:46 – 22:51	No bat activity.	No recordings.
Walk.	22:51 – 22:52	No bat activity.	No recordings.
Stop 13.	22:52 – 22:57	No bat activity.	No recordings.
Walk	22:57 – 22:58	No bat activity.	No recordings.
Stop 14.	22:58 – 23:03	No bat activity.	No recordings.
Walk.	23:03 – 23:04	No bat activity.	No recordings.
Stop 15.	233:04 – 23:09	No bat activity.	No recordings.
Walk.	23:09 – 23:10	No bat activity.	No recordings.
Stop 16	23:10 – 23:15	No bat activity.	No recordings.
Walk.	23.15 – 23:16	No bat activity.	No recordings.

Table 3. Transect Survey Results, 7th July 2022.

The August transect survey was carried out by Mitch Greenhalgh. Sunset on the night of the survey was at 21.35 with the survey extending from 21.35 to 23.06. The weather at the time of the survey was warm and humid with a temperature of 16°C at the beginning of the survey.

Location	Time (start-end)	Surveyor Results.	Anabat Recordings.
Stop 1.	21:35 – 21:40	No bat activity.	No recordings.
Walk.	21:40	No bat activity.	No recordings.
Stop 2.	21:40 – 21:45	No bat activity.	No recordings.
Walk.	21:45 – 21:46	No bat activity.	No recordings.
Stop 3.	21:46 – 21:51	No bat activity.	No recordings.
Walk.	21:51	No bat activity.	No recordings.
Stop 4.	21:51 – 21:56	No bat activity.	No recordings.
Walk.	21:56 – 21:57	No bat activity.	No recordings.
Stop 5.	21:57 – 22:03	No bat activity.	No recordings.
Walk.	22:03	No bat activity.	No recordings.
Stop 6.	22:03 – 22:08	22:03 Common Pipistrelle passed over west to east. 22:04 Common Pipistrelle foraging along tree line. 22:05 Second bat foraging along tree line.	No recordings.
Walk.	22:08	No bat activity.	No recordings.
Stop 7.	22:08 – 22:13	22:11 Common Pipistrelle continuously foraging overhead.	22:11 Common Pipistrelle x2 22:12 Common Pipistrelle x4 22:13 Common Pipistrelle x2
Walk.	22:13 – 22:14	No bat activity.	No recordings.
Stop 8.	22:14 – 22:19	No bat activity.	22:16 Common Pipistrelle
Walk.	22:19	No bat activity.	No recordings.
Stop 9.	22:19 – 22:24	No bat activity.	No recordings.
Walk.	22:24 – 22:25	No bat activity.	No recordings.
Stop 10.	22:25 – 22:30	No bat activity.	No recordings.
Walk.	22:30 – 22:31	No bat activity.	No recordings.
Stop 11.	22:31 – 22:36	No bat activity.	No recordings.

Walk.	22:36 – 22:7	No bat activity.	No recordings.
Stop 12.	22:37 – 22:42	No bat activity.	No recordings.
Walk.	22:42 – 22:43	No bat activity.	No recordings.
Stop 13.	22:43 – 22:48	No bat activity.	No recordings.
Walk	22:48 – 22:49	No bat activity.	No recordings.
Stop 14.	22:49 – 22:54	No bat activity.	No recordings.
Walk.	22:54 – 22:55	No bat activity.	No recordings.
Stop 15.	22:55 – 23:00	No bat activity.	No recordings.
Walk.	23:00 – 23:01	No bat activity.	No recordings.
Stop 16	23:01 – 23:06	No bat activity.	No recordings.
Walk.	23:06 – 23:07	No bat activity.	No recordings.

Table 4. Transect Survey Results, 7th August 2022.

The July transect survey was carried out by Mitch Greenhalgh. Sunset on the night of the survey was at 20:11 with the survey extending from 20:11 to 21:44. The weather at the time of the survey was clear and warm with a temperature of 19°C at the beginning of the survey.

3.5.6.3. The table below shows the results from the transect survey.

Location	**Time (start-end)**	**Surveyor Results.**	**Anabat Recordings.**
Stop 1.	20:11 – 20:16	Common Pipistrelle flew over north to south	20:12 Common Pipistrelle
Walk.	20:16 – 20:17	No bat activity.	No recordings.
Stop 2.	20:17 – 20:22	20:21 Two Common Pipistrelles foraging along tree line then flew south	20:21 Common Pipistrelle
Walk.	20:22	No bat activity.	No recordings.
Stop 3.	20:22 – 20:27	20:23 Common Pipistrelle foraging along tree line. 20:25 Common Pipistrelle flew over north to south. 20:27 Common Pipistrelle heard not seen.	20:23 Common Pipistrelle x3 20:26 Common Pipistrelle
Walk.	20:27 – 20:28	No bat activity.	No recordings.

Stop 4.	20:28 – 20:33	20:32 Common Pipistrelle heard not seen	20:32 Common Pipistrelle
Walk.	20:33 – 20:34	No bat activity.	No recordings.
Stop 5.	20:34 – 20:39	No bat activity.	No recordings.
Walk.	20:39 – 20:40	No bat activity.	No recordings.
Stop 6.	20:40 – 20:45	20:43 Common Pipistrelle flew east to west along tree line	20:43 Common Pipistrelle
Walk.	20:45 – 20:46	No bat activity.	No recordings.
Stop 7.	20:46 – 20:51	No bat activity.	No recordings.
Walk.	20:51 – 20:52	No bat activity.	No recordings.
Stop 8.	20:52 – 20:57	No bat activity.	No recordings.
Walk.	20:57 – 20:58	No bat activity.	No recordings.
Stop 9.	20:58 – 21:03	No bat activity.	No recordings.
Walk.	21:03	No bat activity.	No recordings.
Stop 10.	21:03 – 21:08	No bat activity.	No recordings.
Walk.	21:08 – 21:09	No bat activity.	No recordings.
Stop 11.	21:09 – 21:14	No bat activity.	No recordings.
Walk.	21:14 – 21:15	No bat activity.	No recordings.
Stop 12.	21:15 – 21:20	No bat activity.	No recordings.
Walk.	21:20 – 21:21	No bat activity.	No recordings.
Stop 13.	21:21 – 21:26	No bat activity.	No recordings.
Walk	21:26 – 21:27	No bat activity.	No recordings.
Stop 14.	21:27 – 21:32	No bat activity.	No recordings.
Walk.	21:32 – 21:33	No bat activity.	No recordings.
Stop 15.	21:33 – 21:38	No bat activity.	No recordings.
Walk.	21:38 – 21:39	No bat activity.	No recordings.
Stop 16	21:39 – 21:44	No bat activity.	No recordings.

Table 5. Transect Survey Results, 6th September 2022.

The September transect survey was carried out by Mitch Greenhalgh. Sunset on the night of the survey was at 19:42 with the survey extending from 19:42 to 21:16. The weather at the time of the survey was warm and humid with a temperature of 19°C at the beginning of the survey.

Location	Time (start-end)	Surveyor Results.	Anabat Recordings.
Stop 1.	19:42 – 19:47	No bat activity.	No recordings.
Walk.	19:47 – 19:48	No bat activity.	No recordings.
Stop 2.	19:48 – 19:53	19:49 Bat seen not heard flying over east to west.	19:49 Common Pipistrelle
Walk.	19:53 – 19:54	No bat activity.	No recordings.
Stop 3.	19:54 – 19:59	19:58 Common Pipistrelle flying east to west along tree line.	19:58 Common Pipistrelle
Walk.	19:59 – 20:00	No bat activity.	No recordings.
Stop 4.	20:00 – 20:05	No bat activity.	No recordings.
Walk.	20:05 – 20:06	No bat activity.	No recordings.
Stop 5.	20:06 – 20:11	No bat activity.	No recordings.
Walk.	20:11	No bat activity.	No recordings.
Stop 6.	20:11 – 20:16	No bat activity.	No recordings.
Walk.	20:16 – 20:17	No bat activity.	No recordings.
Stop 7.	20:17 – 20:22	No bat activity.	No recordings.
Walk.	20:22 – 20:23	No bat activity.	No recordings.
Stop 8.	20:23 – 20:28	No bat activity.	No recordings.
Walk.	20:28 – 20:29	No bat activity.	No recordings.
Stop 9.	20:29 – 20:34	No bat activity.	No recordings.
Walk.	20:34 – 20:35	No bat activity.	No recordings.
Stop 10.	20:35 – 20:40	Common Pipistrelle heard not seen.	No recordings.
Walk.	20:40 – 20:41	No bat activity.	No recordings.
Stop 11.	20:41 – 20:46	No bat activity.	No recordings.
Walk.	20:46 – 20:47	No bat activity.	No recordings.
Stop 12.	20:47 – 20:52	No bat activity.	No recordings.
Walk.	20:52 – 20:53	No bat activity.	No recordings.
Stop 13.	20:53 – 20:58	No bat activity.	No recordings.
Walk	20:58 – 20:59	No bat activity.	No recordings.
Stop 14.	20:59 – 21:04	No bat activity.	No recordings.
Walk.	21:04 – 21:05	No bat activity.	No recordings.
Stop 15.	21:05 – 21:10	No bat activity.	No recordings.
Walk.	21:10 – 21:11	No bat activity.	No recordings.
Stop 16	21:11 – 21:16	No bat activity.	No recordings.

Table 6. Transect Survey Results, 24th October 2022.

The October transect survey was carried out by Mitch Greenhalgh. Sunset on the night of the survey was at 17:51 with the survey extending from 17:51 to 19:26. The weather at the time of the survey was warm and humid with a temperature of 11°C at the beginning of the survey.

Location	Time (start-end)	Surveyor Results.	Anabat Recordings.
Stop 1.	17:51 – 17:56	No bat activity.	No recordings.
Walk.	17:56 – 17:57	No bat activity.	No recordings.
Stop 2.	17:57 – 18:02	No bat activity.	No recordings.
Walk.	18:02 – 18:03	No bat activity.	No recordings.
Stop 3.	18:03 – 18:08	No bat activity.	No recordings.
Walk.	18:08 – 18:09	No bat activity.	No recordings.
Stop 4.	18:09 – 18:14	No bat activity.	No recordings.
Walk.	18:14 – 18:15	No bat activity.	No recordings.
Stop 5.	18:15 – 18:20	No bat activity.	No recordings.
Walk.	18:20 – 18:21	No bat activity.	No recordings.
Stop 6.	18:21 – 18:26	No bat activity.	No recordings.
Walk.	18:26 – 18:27	No bat activity.	No recordings.
Stop 7.	18:27 – 18:32	No bat activity.	No recordings.
Walk.	18:32 – 18:33	No bat activity.	No recordings.
Stop 8.	18:33 – 18:38	No bat activity.	No recordings.
Walk.	18:38 – 18:39	No bat activity.	No recordings.
Stop 9.	18:39 – 18:44	No bat activity.	No recordings.
Walk.	18:44 – 18:45	No bat activity.	No recordings.
Stop 10.	18:45 – 18:50	18:46 Common Pipistrelle heard not seen.	18:47 Common Pipistrelle x2
Walk.	18:50 – 18:51	No bat activity.	No recordings.
Stop 11.	18:51 – 18:56	No bat activity.	No recordings.
Walk.	18:56 – 18:57	No bat activity.	No recordings.
Stop 12.	18:57 – 19:02	No bat activity.	No recordings.
Walk.	19:02 – 19:03	No bat activity.	No recordings.
Stop 13.	19:03 – 19:08	No bat activity.	No recordings.
Walk	19:08 – 19:09	No bat activity.	No recordings.
Stop 14.	19:09 – 19:14	No bat activity.	No recordings.

Walk.	19:14 – 19:15	No bat activity.	No recordings.
Stop 15.	19:15 – 19:20	No bat activity.	No recordings.
Walk.	19:20 – 19:21	No bat activity.	No recordings.
Stop 16	19:21 – 19:26	No bat activity.	No recordings.

3.5.2. Static Survey Results.

3.5.2.1. In combination with each transect survey, two Anabat Express units were mounted on trees. One in the tree line extending across the centre of the site and one to the south due to restricted access. These were left to record bat activity on the site over five consecutive nights. The location and direction of the Anabat Express units are shown on the aerial photograph below.

The tables below summarise the recorded results from the three static Anabat recorders. A further breakdown of these recordings is provided in Appendix IX of this report.

3.5.2.2. May Static Surveys Results.

AB1	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
31st May			36		36
1st Jun					
2nd Jun	1		2		3
3rd Jun			3		3
4th Jun			1		1
Total.	1		42		43

AB2	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
31st May			10		10
1st Jun			1		1
2nd Jun					
3rd Jun					
4th Jun			81		81
Total.			92		

3.5.2.3. June Static Surveys Results.

AB1	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
24th Jun		1	2		3
25th Jun					
26th Jun					
27th Jun					
28th Jun					
Total.		1	2		3

AB2	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
24th Jun			39		39
25th Jun	1		12		3
26th Jun	5		151		153
27th Jun		2	12		14
28th Jun	1		30		31
Total.	7	2	200		209

3.5.2.4. July Static Surveys Results.

AB1	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
2nd Jul	4		34		38
3rd Jul			119		119
4th Jul	1		97		98
5th Jul	1		125		126
6th Jul	1		351		352
Total.	7		726		733

AB2	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
2nd Jul			2		2
3rd Jul			5		5
4th Jul			1		1
5th Jul			3		3
6th Jul			2		2
Total.			13		13

3.5.2.5. August Static Surveys Results.

AB1	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
27th Aug	12	1	47		60
28th Aug	8		100	1	109
29th Aug	9		28		37
30th Aug	16		52		68
31st Aug	8		36		44
Total.	53	1	263	1	318

AB2	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
27th Aug		4	30		34
28th Aug	2	4	20	1	27
29th Aug	2	1	3		6
30th Aug	1	1	18		20
31st Aug	2		7		9
Total.	7	10	78	1	96

3.5.2.6. September Static Surveys Results.

AB1	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
1st Sep	16		46		62
2nd Sep	5		24		29
3rd Sep	12	1	21		34
4th Sep					
5th Sep	1		7	5	13
Total.	34	1	98	5	138

AB2	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
1st Sep	2	2	21	1	26
2nd Sep		5	19	1	25
3rd Sep	1	5	24		30
4th Sep					
5th Sep		5	3		8
Total.	3	17	67	2	69

3.5.2.7. October Static Surveys Results.

AB1	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
24th Oct			3		3
25th Oct					
26th Oct			3		3
27th Oct					
28th Oct					
Total.			6		6

AB2	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
24th Oct		1			1
25th Oct				1	1
26th Oct					
27th Oct					
28th Oct					
Total.		1		1	2

3.5.2.5. Overall Summary of Static Recorder Results.

The table below summarises the bat activity recorded during two static recorder surveys carried out at the peak of the bat activity season.

Overall Summary	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total
May	1	0	134	0	135
June	7	3	202	0	212
July	7	0	739	0	746
August	60	11	341	2	414
September	37	18	165	7	227
October	0	1	6	1	8
Total	112	33	1,587	10	1,742

3.5.2.5.1. The results show that the site is predominantly used by Common Pipistrelle bats, with the occasional myotis, noctule and soprano pipistrelle.

3.5.2.5.2. It is acknowledged that AB1 may have failed to record for four of the nights during the June static survey, although when checked after the surveys it was found to be working normally. Despite this, the results overall give a good overall picture of the bat activity across the site.

3.5.2.5.3. The results indicate that the central areas of the site are utilised significantly less than the linear vegetation features, with bats utilising the tree line across the centre of the site; although the numbers of bats recorded overall were surprisingly low considering the number of bat roost records in the vicinity.

3.5.2.5.4. Further analysis of the results show that the majority of the bat calls were recorded in the first couple of hours after sunset and the few hours prior to sunrise. The transect results show that these are limited to individual bats commuting across the site and very little evidence of significant foraging.

3.5.2.4.5. The overall frequency of bat calls recorded on the site is approximately 7.5 calls per hour or a bat passing approximately every eight minutes.

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4. ASSESSMENT OF IMPACTS, MITIGATION AND RESIDUAL EFFECTS.

4.1. Designated Sites.

4.1.1. Assessment.

The data search results from Barnsley Biological Records Centre show that there are five Barnsley Local Wildlife Sites within 2km. The closest of these lies approximately 830m from the closest point of the site. The proposed development of the site will have no impact on any of the Local Wildlife Sites in the area.

4.1.2. Mitigation.

As there will be no impacts on any designated sites there is no requirement for any mitigation.

4.1.3. Residual Effects.

The proposed development will have **No Negative Residual Impact** on any designated sites within a 2km radius.

4.2. Habitats.

4.2.1. Impact Assessment.

4.2.1.1. The habitats on the site are all locally common habitats with locally common species although they do provide some good value for small fauna and bird species.

4.2.1.2. Biodiversity calculations were carried out using the Biodiversity Metric 3.1 of the habitats that lie within the red line boundary. The baseline on the site was calculated at 8.10 Habitat Biodiversity Units (Bu) and 0.56 Hedgerow Bu, as shown in the tables below.

Habitat Type	Extent (ha)	Distinctiveness	Condition Assessment	Biodiversity units
Bramble scrub	0.13	Medium	Condition Assessment N/A	0.52
Mixed scrub	0.15	Medium	Poor	0.60
Bramble scrub	0.39	Medium	Condition Assessment N/A	1.56
Modified grassland	0.58	Low	Moderate	2.32
Ruderal/Ephemeral	0.04	Low	Poor	0.08
Ruderal/Ephemeral	0.17	Low	Poor	0.34
Other neutral grassland	0.19	Medium	Moderate	1.52
Developed land; sealed surface	0.19	V.Low	N/A - Other	0.00
Other woodland; broadleaved	0.09	Medium	Poor	0.36
Urban Tree	0.1	Medium	Moderate	0.80
Total	**2.03**			**8.10**

Hedgerow Type	Extent (km)	Distinctiveness	Condition Assessment	Biodiversity units
H1 Native Hedgerow	0.03	Low	Poor	0.06
H2 Hedge Ornamental Non Native	0.02	V.Low	Poor	0.02
H3 Hedge Ornamental Non Native	0.02	V.Low	Poor	0.02
TL1 Line of Trees	0.05	Low	Moderate	0.20
TL2 Line of Trees	0.13	Low	Poor	0.26
Total	**0.25**			**0.56**

4.2.1.3. There are also two watercourses within/immediately adjacent to the survey area. The BNG assessment for these is dealt with in a separate report prepared by an accredited person.

4.2.1.4. One of the properties included within the red line boundary will be retained and some trees will be retained where feasible along the watercourse through the middle of the site or around the edges of the site. The remaining habitats will be lost, resulting in an overall loss of 7.90 Bu.

4.2.2. Mitigation.

4.2.2.1. On site mitigation will be provided in the form of retaining as many trees as feasibly possible, and the planting of good range of new habitats across the site, with an aim to ensure green corridors are retained across the site.

4.2.2.2. The amenity POS areas will be seeded with an amenity grassland mix that includes a high percentage of wildflowers that can also tolerate regular mowing. An area of wildflower meadow will also be created in the south east corner that will be managed accordingly for that purpose. Some native bulbs will also be planted within the amenity grassland in the middle of the site.

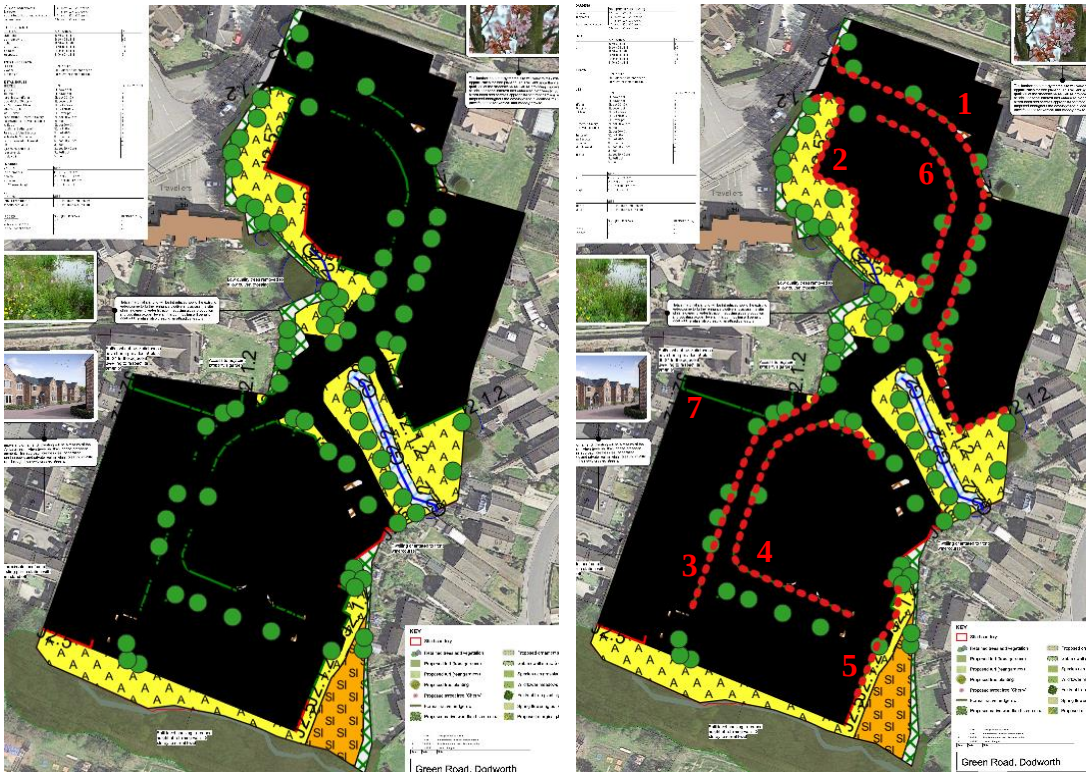
4.2.2.3. Some mixed native scrub will be planted along some of the edges of the site. This will contain at least six species of native scrub species.

4.2.2.4. Some new marginal planting will be carried out along the main stretch of the retained section of watercourse across the middle of the site. This will contain a mix of native marginal species, and for the purpose of the BNG metric, has been classified as ‘Other neutral grassland’.

4.2.2.5. A variety of trees will be planted across the site, all native species including cherry street trees that will provide a valuable source of pollen and bear fruit, which will attract a variety of invertebrates and birds. Some fruit/nut trees will also be planted, as well as a number of standard native species. The trees contribute to creating green corridors across the site.

4.2.2.6. A number of lengths of native hedgerows will be planted throughout the site, in particular along garden boundaries. These will be planted in short lengths, therefore for the purpose of the BNG assessment, the hedgerows have been categorised into six connective routes across the site and are considered as ‘defunct hedgerows’. The maps below demonstrate the six connective defunct hedgerow corridors across the site post development, plus one longer length of intact hedgerow. The map on the left shows the green corridors that will be created across the site. Each hedgerow corridor

is labelled 1-7 on the map on the right, with the corridors defined by the dotted red lines.



4.2.2.7. Therefore, to supplement the number of biodiversity units delivered on the site, the landscaping scheme will deliver a continued functionality of the site for fauna species to utilise.

4.2.2.8. The biodiversity units to be delivered on the site post development is demonstrated in the tables below, outlining what habitats will be retained and created.

Habitat Type	Extent (ha)	Distinctiveness	Condition Assessment	Biodiversity units
Retained habitats:				
Developed land; sealed surface	0.006	V.Low	N/A – Other	0.00
Urban Tree	0.025	Medium	Moderate	0.20
Created habitats:				
Developed land; sealed surface	1.02	V.Low	N/A - Other	0.00

Vegetated garden	0.45	Low	Condition Assessment N/A	0.87
Mixed scrub	0.05	Medium	Fairly Poor	0.27
Modified grassland	0.32	Low	Fairly Good	1.34
Other neutral grassland	0.02	Medium	Fairly Good	0.16
Introduced shrub	0.01	Low	Condition Assessment N/A	0.02
Other neutral grassland	0.05	Medium	Good	0.42
Urban Tree	0.2	Medium	Moderate	0.61
Total				**3.88**

Hedgerow Type	**Extent (km)**	**Distinctiveness**	**Condition Assessment**	**Biodiversity units**
Retained:				
Line of Trees	0.05	Low	Moderate	0.20
Line of Trees	0.11	Low	Poor	0.22
Created:				
Native Hedgerow	0.18	Low	Poor	0.35
Native Hedgerow	0.11	Low	Poor	0.21
Native Hedgerow	0.09	Low	Poor	0.17
Native Hedgerow	0.12	Low	Poor	0.23
Native Hedgerow	0.04	Low	Poor	0.08
Native Hedgerow	0.07	Low	Poor	0.14
Native Hedgerow	0.048	Low	Poor	0.09
Total				**1.69**

4.2.2.9. Once the proposed on site measures have been agreed and approved by the local authority, off site compensation for the loss of biodiversity units will be sought.

4.2.3. Residual Effects.

The number of units that the landscaping of the site will deliver is 3.88 area habitat Bu and 1.69 linear habitat Bu. This equates to an overall loss of 4.22 area habitat Bu and a net gain of 1.31 linear habitat Bu. Taking into account the functionality of the site that the landscaping plan will deliver, it is assessed that the development will have a **Moderate Negative Residual Impact** on the habitats at a site level.

4.3. Species – Bats.

4.3.1. Assessment.

4.3.1.1. There are a number of buildings within the survey area and various walls that all provide negligible potential for roosting bats and therefore the development of the site will have no impacts on roosting bats in any structures.

4.3.1.2. There are a number of trees within the survey area. None were identified to provide any significant potential for roosting bats, although the row of horse chestnut trees in the north west of the site have some loose bark that provide some low potential for roosting bats and there are a number of ivy covered trees throughout the survey area that also provide low potential for roosting bats. There will be a requirement to remove some of these trees with low bat roost potential to facilitate the development and access onto the site.

4.3.1.3. The site was initially assessed to provide moderate potential for foraging and commuting bats due to the habitats across the site and as there are a number of known bat roosts in close proximity to the site, including a maternity roost.

4.3.1.4. The subsequent bat transect and automated surveys concluded that the level of bat activity across the site is surprisingly low, mostly limited to Common Pipistrelle bats. The bats that do use the site tend to utilise the tree line along the watercourse across the middle of the site.

4.3.1.5. There will be a requirement to create a road crossing over that watercourse to connect the north and south areas of the site, which will require the removal of some of the trees along the watercourse corridor.

4.3.2. Mitigation.

4.3.2.1. Mitigation will be provided in the first place by retaining as many healthy trees on the site as feasibly possible.

4.3.2.2. Where there is a requirement to fell the small number of horse chestnut trees and any other trees with ivy, in line with the Bat Conservation Trust Good Practice Guidelines, these will be soft felled by cutting the trees down in sections, gently lowering each section to the ground and leaving in situ on the ground for a minimum of twenty-four hours before chipping or removing from site.

4.3.2.3. Although the bat activity surveys do not show that the site is of any high significance to foraging and commuting bats, the landscaping for the site has been designed in a way to maintain some good connective routes for bats across the site, maintaining commuting corridors that connect the northern part of the site to the adjacent habitats to the south. A significant green corridor along the watercourse will also be retained. The new road crossing over the watercourse will create a gap that is less than 10m in width, with some overhanging trees that will help to bridge the gap. This is not considered as a fragmentation of the habitat.

4.3.2.4. The planting schedule for the site will attract a variety of invertebrate species that will be a good food source for bats.

4.3.2.5. In addition to the above, a sensitive lighting scheme will be implemented across the site that will ensure that any external lighting will be downward directional and directed away from any green corridors across the site.

4.3.3. Residual Effects.

With the above mitigation measures in place it is assessed that there will be **No Negative Residual Impact** on roosting, foraging or commuting bats at a site level as a result of the proposed development.

4.4. Species – Nesting Birds.

4.4.1. Assessment.

There is potential for nesting birds throughout survey area in the vegetation, walls and buildings. The nesting bird season extends from March to September each year. Any proposed vegetation/site clearance during the nesting bird season could potentially have a high impact on nesting birds.

4.4.2. Mitigation.

4.4.3. Where possible initial site clearance or vegetation clearance will be carried out outside the nesting bird season. Where it is necessary to undertake such works within the nesting bird season, these works will be immediately preceded by a nesting bird survey. Any active nests found, as well as a suitable buffer around them, will be left undisturbed until the young have fledged from the nest.

4.4.4. The landscaping for the site will include the planting of some scrub and trees that will provide some mitigation for the loss of nesting opportunities for birds on the site.

4.4.3. Residual Effects.

With the above mitigation measures in place there will be a **No Negative Residual Impact** on nesting birds at a site level.

4.5. Species – Reptiles.

4.5.1. Assessment.

The site is assessed to provide limited potential for low numbers of individual reptiles therefore it is assessed that the proposed works could potentially have a low impact on reptiles.

4.5.2. Mitigation.

4.5.2.1. All personnel working on site will be briefed on the identification of reptiles and their potential presence on site in line with the toolbox talk document provided at the end of this report.

4.5.2.2 Clearance of dense ground vegetation, such as the scrub habitats, will initially be carried out to a minimum of 150mm to avoid harming fauna species at ground level, including reptiles. This will encourage any animals to move away from the area and make it less attractive before the area is then cleared down to the ground level.

4.5.2.3. In the event that a reptile is found during the works, it will be left to escape the area unharmed and on its own accord before the works proceed.

4.5.2.4. In the unlikely event that high numbers (5+) or hibernating reptiles are found, professional advice will be sought from an experienced ecologist who will assess the remaining works and will advice how to proceed.

4.5.3. Residual Effect.

With the above precautionary measures in place, there is **unlikely to be any residual impact** on reptiles at a site level.

4.6. Species – Hedgehogs.

4.6.1. Assessment.

There is potential for hedgehogs to be present on the site, in particular the areas of dense scrub where hedgehogs may take shelter.

4.6.2. Mitigation.

4.6.2.1. Clearance of dense ground vegetation, such as the scrub habitats, will initially be carried out to a minimum of 150mm to avoid harming fauna species at ground level, including hedgehogs. This will encourage any animals to move away from the area and make it less attractive before the area is then cleared down to the ground level.

4.6.2.2. The landscaping proposals will retain corridors across the site for hedgehogs to use and gaps 13cm x 13cm wide will be created in the base of the boundary fences between the gardens that extend up to the site boundaries. These will be signposted as hedgehog highways in an attempt to encourage residents to maintain these features.

4.6.3. Residual Effects.

With the above mitigation in place, at the most there could potentially be a **low negative impact** on hedgehogs at a site level.

4.7. Species – Invasive Plants.

4.7.1. Assessment.

4.7.1.1. Rhododendron, cotoneaster and Himalayan balsam were all identified growing within the survey area. These are invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981). It is an offence to allow or cause these plants to spread into the wild.

4.7.1.2. Rhododendrons spread via lateral horizontal growth and therefore, when any part of this plant is removed, if it is not disposed of or destroyed appropriately it can allow the plant to spread.

4.7.1.3. Cotoneaster plants spread via seeds in the berries that are normally present on the plant during the autumn and winter months. Berries can also drop to the ground around the plant contaminating the ground.

4.7.1.4. Himalayan balsam plants spread via seeds that are held in the seed pods during late summer/autumn and when touched the seed pods eject the seeds up to 7m from the plant. Therefore any ground within 7m of the plants is potentially contaminated with seeds.

4.7.1.5. Any works that will make contact with the ground or these plants could result in and moving the plants and soils around and off the site could cause the plants to spread.

4.7.2. Mitigation.

4.7.2.1. Until such time that all invasive plants have been eradicated from the site, exclusion zones will be put in place around all invasive plants and contaminated soils to prevent machinery and personnel from entering those areas.

4.7.2.2. The cotoneaster plants will be removed from the site at a time of year when no berries are present on the plants. The plants will be removed in their entirety, including the root system.

4.7.2.3. The Himalayan balsam plants will be removed at a time when there are no seed pods present on the plants.

4.7.2.4. All potentially contaminated soils around the plants will be excavated and disposed of as contaminated waste. All machinery and equipment that comes into contact with those soils in the process, will be washed in situ before leaving the area. All washed arisings will be caught in a membrane and disposed of as contaminated waste.

4.7.3. Residual Effect.

4.7.3.1. By implementing the above mitigation, this will result in the eradication of invasive plant species from the site, without causing the plants to spread and will therefore have a **high positive impact** at a site level.

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5. BIODIVERSITY ENHANCEMENT MEASURES.

5.1. In line with the NPPF some biodiversity enhancements for fauna species will be provided on the site.

5.2. This will be achieved by providing integrated swift boxes into at least 10% of the new buildings on the site and integrated bat boxes into at least 10% of the new buildings on the site.

5.3. Integrated bat boxes will be the Habibat Bat Box – Custom Facing, similar to shown adjacent. Six of these will be incorporated into gable ends of the new buildings, at least 4m above ground level where they are away from any direct artificial light interference.

5.4. Six pairs of integrated swift boxes will be provided, similar to that shown adjacent. These will again be positioned in the walls of the new buildings. These will be positioned close to the eaves, away from any regular disturbance and not above windows or doors to prevent a build-up of droppings on the cills.

5.5. Log piles will be provided in or along the edges of the native scrub planting on the site. At least two log piles will be created on the site.

5.6. Two hedgehog houses will be placed within the newly planted scrub habitat on the site. One will be positioned on the eastern edge of the site and the other on the western edge of the site.

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Prepared by:	
Ruth Georgiou. BSc, MCIEEM.	Date: 19th January 2023.

Checked by:	
Derek Whitcher, BSc, MCIEEM, MCMI	Date: 20th January 2023.

6. REFERENCES.

Chartered Institute of Ecology and Environmental Management. 2017. ***Guidelines for Preliminary Ecological Appraisal, Second Edition.*** CIEEM, Hampshire.

Chartered Institute of Ecology and Environmental Management. 2017. ***Guidelines for Ecological Report Writing, Second Edition.*** CIEEM, Hampshire.

1981. ***Wildlife and Countryside Act.*** *http://www.legislation.gov.uk/ukpga/1981/69* (accessed 18/02/16)

2000. ***Countryside and Rights of Way Act.***
http://www.legislation.gov.uk/ukpga/2000/37/contents.

2017. ***The Conservation of Habitats and Species Regulations.***
http://www.legislation.gov.uk/uksi/2010/490/contents/made.

2012. ***National Planning Policy Statement.***
https://www.gov.uk/government/publications/national-planning-policy-framework--2

Anon. 1995. ***Biodiversity: the UK Steering Group report. Vol 2: Action Plans.*** HMSO, London.

Joint Nature Conservation Committee. 2004 (ed.). ***Handbook for Phase 1 habitat survey: A technique for environmental audit.*** JNCC, Peterborough.

1992. ***Protection of Badgers Act.*** *https://www.legislation.gov.uk/ukpga/1992/51/contents*.

Harris S, Cresswell P and Jefferies D. 1989. ***Surveying Badgers.*** Mammal Society. London.

Dean M, Strachen R, Gow D and Andres R (2016). ***The Water Vole Mitigation Handbook*** (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The mammal Society, London

Chanin P. 2003(a). ***Ecology of the European Otter.*** Conserving Natura 2000, Ecology Series No.10. English Nature, Peterborough.

Chanin P. 2003(b) ***Monitoring the Otter Lutra.*** Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough.

Peay S. 2003. ***Monitoring the White-Clawed Crayfish Austropotamobius pallipes.*** Conserving Natura 2000 Rivers Monitoring Series No. 1. English Nature, Peterborough.

English Nature. 2001. ***Great Crested Newt Mitigation Guidelines.***

Langton T, Beckett C, Foster J. 2001. ***Great Crested Newt: Conservation Handbook.*** Froglife, Suffolk.

Oldham et al. 2000. ***Great Crested Newt Habitat Suitability Assessment. ARG UK Advice Note 5, May 2010.***

Collins J. (ed.) 2016. ***Bat Surveys for Professional Ecologist: Good Practice Guidelines.*** 3rd ed. The Bat Conservation Trust, London.

English Nature. 2004. ***Bat Mitigation Guidelines.*** English Nature, Peterborough, UK.

BTHK 2018. ***Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals.*** Exeter: Pelagic Publishing.

BOCC4 Eaton et al. 2015. ***Birds of Conservation Concern 4: The Population Status of Bird's in the UK, Channel Islands and Isle of Man.***

Joint Nature Conservation Committee. 2004. ***Common Standards Monitoring Guidance for Birds.*** 2004 ed. JNCC, Peterborough.

Froglife. 1999. ***Froglife Advice Sheet 10: Reptile Survey.*** Froglife, London.

Bright P, Morris P, Mitchell-Jones T. 2006. ***The Dormouse Conservation Handbook*** 2nd edition. English Nature, Peterborough.

Joint Nature Conservation Committee. 2004 (ed.). ***Common Standards Monitoring Guidance for: Reptiles and Amphibians.*** JNCC, Peterborough.

Joint Nature Conservation Committee. 1996. ***UK Strategy for Red Squirrel Conservation.*** JNCC, Peterborough.

Appendix I. BAT INFORMATION.

Ecology

There are currently 18 species of bat residing in Britain, 17 of which of which are known to breed here. They are extremely difficult to identify in the hand and even more so in flight.

All appear to be diminishing in numbers, probably due to habitat change and shortage of food, caused by pesticides, as insects are their sole diet.

As their diet consists solely of insects, bats hibernate during the winter when their food source is at its most scarce. They will spend the winter in hollow trees, caves, mines and the roofs of buildings.

Certain species, particularly the pipistrelle (the commonest and most widespread British bat) can quickly adapt to man-made structures and will readily use these to roost and to rear their young.

Surveys

During walkover surveys, bat roosts can be identified by looking for:

- Suitable holes, cracks and crevices within any building, tree or other structure.
- Bat droppings along walls, window cills, or on the ground.
- Prey remains, such as insect wings.

Further investigations can be made using endoscopes, by carrying out aerial inspections of trees or by conducting bat activity surveys during dusk and dawn over summer months.

Legislation

Bats are protected under Appendix II and III of the Bern Convention (1982), Schedule 5 and 6 of the Wildlife and Countryside Act (1981), Annex IV of the Habitats Directive (some species under Annex II), Annex II of the Conservation of Habitats and Species Regulations (2010) and EUROBATS agreement. Numerous species are also listed under section 41 of the Natural Environment and Rural Communities Act (2006) making them species of principal importance.

All bats and their roosts are therefore protected in the UK. This makes it an offence to kill, injure or take any bat, to interfere with any place used for shelter or protection, or to intentionally disturb any animal occupying such a place.

The UK has designated maternity and hibernacula areas as Special Areas of Conservation (SAC's) under the Habitats Directive. Implementation of the UK Biodiversity Action Plan also includes action for a number bat species and the habitats which support them.

Where development proposals are likely to affect a bat roost site, a licence is required from Natural England.

Appendix II. NESTING BIRD INFORMATION.

Ecology

The nesting season will vary according to the weather each year but generally commences in March, peaks during May and June and continues until September. It is also worth remembering that some birds nest in trees and scrub, but others are ground nesting or prefer man- made structures or buildings.

Surveys

Nesting bird surveys search for potential nest sites in vegetation, buildings etc. Potential nesting sites are observed over a suitable period of time for bird movements or calling male birds that would indicate the presence of a nest. The presence of a nest can be identified from the field signs without the necessity to see the nest itself, thereby avoiding any disturbance of the nests. The best way to avoid this issue is to plan for vegetation clearance to be carried out outside the bird-nesting season.

Legislation

Nesting birds are protected under The Wildlife and Countryside Act 1981.

Part 1. -(1) Of the Act states that: - If any person intentionally: - kills, injures or takes any wild bird; takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or takes or destroys an egg of any wild bird, he shall be guilty of an offence.

Part 1. -(5) of the Act states that: - If any person intentionally: - disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on, or near a nest containing eggs or young; or disturbs young of such a bird, he shall be guilty of an offence and liable to a special penalty.

The Countryside and Rights of Way Act 2000 amends the above by inserting after “intentionally” the words “or recklessly”.

Appendix III. INVASIVE PLANT SPECIES INFORMATION.

Ecology

The Government has acknowledged the problems that can be caused by non-native invasive species. In 2008 the Government launched "The Invasive Non-Native Species Framework Strategy for Great Britain". The strategy provides a framework for a more co-ordinated approach to invasive species management. It seeks to create a stronger sense of shared responsibility across government, key organisations, land managers and the public.

The Non-Native Species Secretariat has been established to oversee the implementation of the strategy. Details of the secretariat including risk assessments and action plans for some species are available at www.nonnativespecies.org.

In general, there are four basic methods of controlling weeds; mechanical, chemical, natural and environmental.

- ***Mechanical control*** *includes cultivation, hoeing, pulling, cutting, raking, dredging or other methods to uproot or cut weeds.*
  Where this method is used all plant material must be considered "controlled waste" and must be disposed of properly.
- ***Chemical control*** *uses approved herbicides.*
- ***Natural control*** *uses pests and diseases of the target weed to weaken it and prevent it from becoming a nuisance.*
- ***Environmental control*** *works by altering the environment to make it less suitable for weed growth, for example by increasing or decreasing water velocity.*

Surveys

A site will be searched for invasive plant species growing on site, from mature plants to new shoots. A site will also be searched for dead stems indicating that plants that may have seasonally died back are present.

Legislation

Invasive species listed under Schedule 9 are prohibited from release into the wild. Schedule 9, Section 14(2) prohibits 'planting' or 'causing to grow' in the wild of any plant listed in Part 2 of Schedule 9.

The following is a list of all the species of plant listed under Schedule 9 of The Wildlife and Countryside Act 1981.

Common Name	**Scientific Name**	**England & Wales**	**Scotland**
Alexanders, Perfoliate	*Smyrnium perfoliatum*	✓	
Algae, Red	*Grateloupia luxurians*	✓	
Archangel, Variegated Yellow	*Lamiastrum galeobdolon subsp. Argentatum*	✓	
Azalea, Yellow	*Rhododendron luteum*	✓	
Balsam, Himalayan	*Impatiens glandulifera*	✓	
Cotoneaster	*Cotoneaster horizontalis*	✓	
Cotoneaster, Entire Leaved	*Cotoneaster integrifolius*	✓	
Cotoneaster, Himalayan	*Cotoneaster simonsii*	✓	
Cotoneaster, Hollyberry	*Cotoneaster bullatus*	✓	
Cotoneaster, Small Leaved	*Cotoneaster microphyllus*	✓	
Creeper, False Virginia	*Parthenocissus inserta*	✓	
Creeper, Virginia	*Parthenocissus quinquefolia*	✓	
Dewplant, Purple	*Disphyma crassifolium*	✓	
False-acacia	*Robinia pseudoacacia*		✓
Fanwort	*Cabomba caroliniana*	✓	✓
Fern, Water	*Azolla filiculoides*	✓	✓
Fig, Hottentot	*Carpobrotus edulis*	✓	✓
Garlic, Three-Cornered	*Allium triquetrum*	✓	
Hogweed, Giant	*Heracleum mantegazzianum*	✓	✓
Hyacinth, water	*Eichhornia crassipes*	✓	✓
Kelp, Giant	*Macrocystis angustifolia*	✓	✓
Kelp, Giant	*Macrocystis integrifolia*	✓	✓
Kelp, Giant	*Macrocystis laevis*	✓	✓
Kelp, Giant	*Macrocystis pyrifera*	✓	✓
Kelp, Japanese	*Laminaria japonica*	✓	✓

Knotweed, Giant	*Fallopia sachalinensis*	✓	
Knotweed, Hybrid	*Fallopia japonica x Fallopia sachalinensis*	✓	
Knotweed, Japanese	*Fallopia japonica*	✓	
Knotweed, Japanese	*Polygonum cuspidatum*		✓
Leek, Few-flowered	*Allium paradoxum*	✓	✓
Lettuce, water	*Pistia stratiotes*	✓	✓
Montbretia	*Crocosmia x crocosmiiflora*	✓	
Parrot's-feather	*Myriophyllum aquaticum*	✓	
Pennywort, Floating	*Hydrocotyle ranunculoides*	✓	
Potato, Duck	*Sagittaria latifolia*	✓	
Primrose, Floating Water	*Ludwigia peploides*	✓	
Primrose, Water	*Ludwigia grandiflora*	✓	
Rhododendron	*Rhododendron ponticum*	✓	
Rhubarb, Giant	*Gunnera tinctorial*	✓	
Rose, Japanese	*Rosa rugosa*	✓	
Salvinia, Giant	*Salvinia molesta*	✓	✓
Seafingers, Green	*Codium fragile*	✓	
Seafingers, Green	*Codium fragile tomentosoides*		✓
Seaweed, Californian Red	*Pikea californica*	✓	✓
Seaweed, Hooked Asparagus	*Asparagopsis armata*	✓	✓
Seaweed, Japanese	*Sargassum muticum*	✓	✓
Seaweeds, Laver (except native species)	*Porphyra sp. except -* *P. amethystea* *P. leucosticta* *P. linearis* *P. miniata* *P. purpurea* *P. umbilicalis*	✓	✓
Shallon	*Gaultheria shallon*		✓
Stonecrop, Australian swamp	*Crassula helmsii*	✓	✓
Wakame	*Undaria pinnatifida*	✓	✓
Waterweed, Curly	*Lagarosiphon major*	✓	✓
Waterweeds	*All species of the genus Elodea*	✓	

Appendix IV. ANNOTATED MAP OF THE SURVEY AREA – PRE DEVELOPMENT

- Target Note
- Scattered Trees
- G2.1 - Running water - eutrophic
- J2.1.2 - Intact hedge - species-poor
- J2.4 - Fence
- J2.5 - Wall
- A1.1.1 - Broadleaved woodland - semi-natural
- A2.1 - Scrub - dense/continuous
- B2.2 - Neutral grassland - semi-improved
- B4 - Improved grassland
- C3.1 - Other tall herb and fern - ruderal
- J3.6 - Buildings
- J4 - Bare ground

Site: Green Road, Dodworth	Prepared by: Ruth Georgiou. BSc, MCIEEM
Reference: 220423	Date: 27th April 2022

Appendix V. ANNOTATED MAP OF THE SURVEY AREA – POST DEVELOPMENT

PostDevelopmentScatteredTrees

PostDevelopmentLinearHabitats

~~32.2~~ G2.2 - Running water - mesotrophic

~~J2.1.2~~ J2.1.2 - Intact hedge - species-poor

~~J2.5~~ J2.5 - Wall

PostDevelopmentHabitats

A2.1 - Scrub - dense/continuous

B2.2 - Neutral grassland - semi-improved

F2.1 - Marginal and inundation - marginal vegetation

J1.2 - Cultivated/disturbed land - amenity grassland

J1.4 - Introduced shrub

J3.6 - Developed area -buildings, hard landscaping (70%) and vegetated gardens (30%)

Site: Green Road, Dodworth

Prepared by: Ruth Georgiou. BSc, MCIEEM

Reference: 220423

Date: 19th January 2023

Appendix VI. TARGET NOTES.

T1 – Building 3.
T2 – Building 4.
T3 – Rhododendron plant.
T4 – Building 2.
T5 – Building 1.
T6 – Cotoneaster plant.
T7 – Area of Himalayan balsam.

Appendix VII. HABITAT CONDITION ASSESSMENT CRITERIAS.

Scrub:

Condition Assessment Criteria	
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover.
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.

Improved Grassland:

Condition Assessment Criteria	
1	There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type. **NB - this criterion is essential for achieving moderate condition.**
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
4	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.
5	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
6	Cover of bracken less than 20%.
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).

Tall Ruderal Herb:

Condition Assessment Criteria	
CORE CRITERIA - applicable to **all urban habitat types:**	
1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.
2	There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. **NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife). Note that Biodiverse green roofs are exempt from this requirement, and can include non-native sedums, as set out in footnote 1.**
3	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. **NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**
ADDITIONAL CRITERION - only applicable to **Open mosaic on previously developed land** habitat type:	
4a	The site shows spatial variation, forming a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate AND pools. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.
ADDITIONAL CRITERION - only applicable to **Bioswale and SUDS** habitat types:	
4b	The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.
ADDITIONAL CRITERION - only applicable to **green roof** habitat types (select as necessary):	
4c1	**Intensive green roofs** – have a minimum of 50% native and non-native wildflowers - 70% of the roof area is soil and vegetation (including water features)
4c2	**Biodiverse green roofs** - have a varied depth of 80 - 150mm at least 50% is at 150mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. To achieve Good condition some additional habitat, such as sand piles, logs etc should be present.

Semi Improved Neutral Grassland:

Condition Assessment Criteria	
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. **NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.**
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition1 and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.
Additional Group (non-acid types only)	
6	There are greater than 9 species per metre squared. **NB - This criterion is essential for achieving good condition (non-acid grassland types only**).

Woodland:

Condition Assessment Criteria				
Indicator:		Good (3 points)	Moderate (2 points)	Poor (1 point)
1	**Age distribution of trees[1]**	Three age classes present	Two age classes present	One age class present
2	**Wild, domestic and feral herbivore damage**	No significant browsing damage evident in woodland[2]	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland
3	**Invasive plant species[3]**	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover
4	**Number of native tree species**	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel
5	**Cover of native tree and shrub species**	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native
6	**Open space within woodland[4]**	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space
7	**Woodland regeneration[5]**	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland
8	**Tree health**	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present
9	**Vegetation and ground flora**	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community

10	**Woodland vertical structure[6]**	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots
11	**Veteran trees[7]**	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland
12	**Amount of deadwood**	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps
13	**Woodland disturbance[8]**	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground

Scattered Trees:

Condition Assessment Criteria	
1	The tree is a native species(or more than 70% within the block are native species).
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
3	The tree is mature[2] or veteran[3] (or more than 50% within the block are mature[2] or veteran[3]).
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.
5	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark
6	More than 20% of the tree canopy area is oversailing vegetation beneath.

Line of Trees:

Condition Assessment Criteria	
1	More than 70% of trees are native species.
2	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.
3	Includes one or more mature[1] or veteran[2] tree.
4	There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.
5	At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.

Species Poor Hedgerow:

Attributes and functional groupings	Criteria	Description
A1. Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).
A2. Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice[4]).

B1. Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
B1. Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge. Undisturbed ground should be present for at least 90% of the hedgerow length, greater than 1m in width and must be present along at least one side of the hedge. This criterion recognises the value of the hedge base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.
C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (Urtica spp.), cleavers (Galium aparine) and docks (Rumex spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.
D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).

Appendix VIII. PROPOSED LANDSCAPING.

Appendix IX. BAT AUTOMATED SURVEY RESULTS.

31st May to 1st June.

AB1

Time	Common Pipistrelle	Total Calls
21		
22	1	1
23	33	33
00		
01		
02	1	1
03	1	1
04		
05		
Grand Total	36	36

AB2

Time	Common Pipistrelle	Total Calls
21	8	8
22		
23		
00		
01		
02		
03		
04	2	2
05		
Grand Total	10	10

1st – 2nd June.

AB1

No bats recorded.

AB2

Time	Common Pipistrelle	Total Calls
21	1	1
22		
23		
00		
01		
02		
03		
04		
05		
Grand Total	1	1

2nd – 3rd June.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
21	1		1
22	1		1
23			
00			
01		1	1
02			
03			
04			
05			
Grand Total	2	1	3

AB2

No bats recorded.

3rd – 4th June.

AB1

Time	Common Pipistrelle	Total Calls
21		1
22	1	
23		
00		
01		
02		
03	1	1
04	1	1
05		
Grand Total	3	3

AB2

No bats recorded.

4th – 5th June.

AB1

Time	Common Pipistrelle	Total Calls
21		
22	1	1
23		
00		
01		
02		
03		
04		
05		
Grand Total	1	1

AB2

Time	Common Pipistrelle	Total Calls
21	6	6
22	69	69
23	1	1
00		
01		
02		
03	1	1
04	4	4
05		
Grand Total	81	81

24th – 25th June.

AB1

Time	Common Pipistrelle	Noctule	Total Calls
21			
22		1	1
23			
00			
01	1		1
02			
03	1		1
04			
05			
Grand Total	2	1	3

AB2

Time	Common Pipistrelle	Total Calls
21		
22	16	16
23	2	2
00	1	1
01	4	4
02	9	9
03	6	6
04	1	1
05		
Grand Total	39	39

25th – 26th June.

AB1

No bats recorded.

AB2

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	10	1	11
23	2		2
00			
01			
02			
03			
04			
05			
Grand Total	12	1	13

26th – 27th June.

AB1

No bats recorded.

AB2

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	60	5	65
23	11		11
00	22		22
01			
02	2		2
03	33		33
04	23		23
05			
Grand Total	151	5	156

27th – 28th June.

AB1

No bats recorded.

AB2

Time	Common Pipistrelle	Noctule	Total Calls
21			
22	11		11
23	1		1
00			
01			
02			
03			
04		2	2
05			
Grand Total	12	2	14

28th – 29th June.

AB1

No bats recorded.

AB2

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	28	1	29
23	1		
00			
01			
02			
03	1		1
04			
05			
Grand Total	30		30

2nd – 3rd July.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	32	3	35
23	1		1
00			
01		1	1
02			
03	1		1
04			
05			
Grand Total	34	4	38

AB2

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	32	3	35
23	1		1
00			
01		1	1
02			
03	1		1
04			
05			
Grand Total	34	4	38

3rd – 4th July.

AB1

Time	Common Pipistrelle	Total Calls
21	36	36
22		
23	7	7
00	18	18
01	13	13
02	26	26
03	16	16
04	3	3
05		
Grand Total	119	119

AB2

Time	Common Pipistrelle	Total Calls
21	1	1
22	3	3
23		
00		
01		
02		
03		
04	1	1
05		
Grand Total	5	5

4th – 5th July.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	1		1
23	10		10
00	10		10
01	31	1	32
02	3		3
03	5		5
04	37		37
05			
Grand Total	97	1	98

AB2

Time	Common Pipistrelle	Total Calls
21		
22		
23		
00		
01		
02		
03		
04	1	1
05		
Grand Total	1	1

5th – 6th July.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	38		38
23	31		31
00	7		7
01	1		1
02	10		10
03	38		38
04		1	1
05			
Grand Total	125	1	126

AB2

Time	Common Pipistrelle	Total Calls
21		
22		
23		
00		
01		
02	1	1
03	1	1
04	1	1
05		
Grand Total	3	3

6th – 7th July.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
21			
22	114	1	115
23	80		80
00	30		30
01			
02	49		49
03	56		56
04	22		22
05			
Grand Total	351	1	352

AB2

Time	Common Pipistrelle	Total Calls
21		
22	2	2
23		
00		
01		
02		
03		
04		
05		
Grand Total	2	2

27th – 28th August.

AB1

Time	Common Pipistrelle	Myotis	Noctule	Total Calls
20	42	1		43
21	1			1
22	1			1
23				
00	1			1
01		4		4
02		3		3
03	1	1	1	3
04		3		3
05	1			1
Grand Total	47	12	1	60

AB2

Time	Common Pipistrelle	Noctule	Total Calls
20	3	1	4
21			
22	1		1
23		2	2
00			
01			
02			
03		1	1
04			
05	26		26
Grand Total	30	4	34

28th – 29th August.

AB1

Time	Common Pipistrelle	Myotis	Soprano Pipistrelle	Total Calls
20	59	1		60
21	2			2
22				
23				
00	4	2		6
01	1	3		4
02		1		1
03	1	1		2
04				
05	33		1	34
Grand Total	100	8	1	109

AB2

Time	Common Pipistrelle	Myotis	Noctule	Soprano Pipistrelle	Total Calls
19	1				1
20	2	1	3	1	7
21	1				1
22					
23	1				1
00					
01					
02					
03			1		1
04					
05	15	1			16
Grand Total	20	2	4	1	27

29th – 30th August.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
20	28		28
21			
22			
23			
00			
01		1	1
02			
03		2	2
04		2	2
05		4	4
Grand Total	28	9	37

AB2

Time	Common Pipistrelle	Myotis	Noctule	Total Calls
20		1		1
21	2			2
22	1		1	2
23				
00				
01				
02		1		1
03				
04				
05				
Grand Total	3	2	1	6

30th – 31st August.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
20	50		50
21	4		4
22			
23			
00			
01			
02	1		1
03		4	4
04		3	3
05	1	9	9
Grand Total	52	16	68

AB2

Time	Common Pipistrelle	Myotis	Noctule	Total Calls
20		1		1
21	1			1
22	1		1	2
23	1			1
00	1			1
01				
02				
03				
04				
05	14			14
Grand Total	18	1	1	20

31st August – 1st September.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
20	21		21
21			
22			
23			
00		1	1
01	1	2	3
02		2	2
03		1	1
04		1	1
05	14	1	15
Grand Total	36	8	44

AB2

Time	Common Pipistrelle	Myotis	Total Calls
20		2	2
21	2		2
22	1		1
23	2		2
00			
01			
02			
03			
04			
05	2		2
Grand Total	7	2	9

1st – 2nd September.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
20	29		29
21		2	2
22			
23		3	3
00		3	3
01		3	3
02		1	1
03		1	1
04		2	2
05	17	1	18
Grand Total	46	16	62

AB2

Time	Common Pipistrelle	Myotis	Noctule	Soprano Pipistrelle	Total Calls
20			1		1
21	3		1		4
22	2				2
23		1			1
00	1				1
01					
02					
03					
04		1			1
05	15			1	16
Grand Total	21	2	2	1	26

2nd – 3rd September.

AB1

Time	Common Pipistrelle	Myotis	Total Calls
19	7		7
20	9		9
21			
22			
23			
00			
01			
02	1	2	3
03			
04	1	1	2
05	6	2	8
Grand Total	24	5	29

AB2

Time	Common Pipistrelle	Myotis	Noctule	Soprano Pipistrelle	Total Calls
20	1		1		2
21	1		1		2
22					
23	1		1		2
00	1				1
01	1				1
02	1				1
03			1		1
04	4				4
05	9		1	1	11
Grand Total	19		5	1	25

3rd – 4th September.

AB1

Time	Common Pipistrelle	Myotis	Noctule	Total Calls
19	5			5
20	5		1	6
21				
22	1			1
23	1			1
00		2		2
01	1	3		4
02		2		2
03	3	2		5
04	1	1		2
05	4	2		6
Grand Total	21	12		34

AB2

Time	Common Pipistrelle	Myotis	Noctule	Total Calls
19	2			2
20	2		2	4
21		1		1
22			1	1
23	1			1
00				
01			2	2
02				
03				
04				
05	18			18
06	1			1
Grand Total	24	1	5	

4th – 5th September.

AB1

No bats recorded.

AB2

No bats recorded.

5th – 6th September.

AB1

Time	Common Pipistrelle	Myotis	Soprano Pipistrelle	Total Calls
19	1			1
20		1	4	5
21			1	1
22	1			1
23	5			5
Grand Total				

AB2

Time	Common Pipistrelle	Noctule	Total Calls
20	1	4	
21	1	1	
22			
23	1		
00			
01			
02			
03			
04			
05			
Grand Total			

24th – 25th October.

AB1

Time	Common Pipistrelle	Total Calls
21	2	2
22		
23		
00		
01		
02		
03		
04	1	1
05		
Grand Total	3	3

AB2

Time	Noctule	Total Calls
21	1	1
22		
23		
00		
01		
02		
03		
04		
05		
Grand Total	1	1

25th – 26th October.

AB1

No bats recorded.

AB2

Time	Soprano Pipistrelle	Total Calls
21	1	1
22		
23		
00	1	1
01		
02		
03		
04		
05		
Grand Total	2	2

26th – 27th October.

AB1

Time	Common Pipistrelle	Total Calls
21	1	1
22	2	2
23		
00		
01		
02		
03		
04		
05		
Grand Total	3	3

AB2

No bats recorded.

27th – 28th October.

AB1

No bats recorded.

AB2

No bats recorded.

28th 29th October.

AB1

No bats recorded.

AB2

No bats recorded.

Toolbox Talk: Reptiles

Whitcher Wildlife Ltd

Ecological Consultants

Identification: Grass Snakes.

The grass snake can be up to 120cm long. It is generally dark green in colour but may occasionally appear grey with vertical black bars and spots that run along its sides. There is usually a yellow marking around the neck.

Identification: Adders.

The adder is the only native species that is venomous, but it is rarely harmful to humans. Adult adders are generally up to 66cm long. Back ground colouration is a light shade of grey or brown with a black zigzag marking along the length of the back. As with all reptiles, colouration varies and becomes duller as sloughing (skin shedding) approaches.

Identification: Slow Worms.

Slow worms grow to around 45cm in length. The males and females display a marked difference in colour when fully grown. In general, the species displays colouring that varies from light brown, dark brown, grey, bronze or brick red with the females often displaying a dark vertebral stripe and both males and females displaying occasional markings on the flanks.

Identification: Common Lizards.

Common lizards grow to around 16cm. They are grey brown to dark brown, often with a darker streak that may run the entire length of the spine. A continuous dark band bordered by light yellow or white spots is often seen on either side of the body. The underside of the males is egg yolk yellow to orange spotted with black. Females are yellowish grey.

Other Reptiles.

In addition to the reptiles outlined on this document, there are also two other reptile species in Great Britain, the smooth snakes and the sand lizard. These reptiles are a lot less common than the four species covered with the smooth snake being predominantly found on heathland in southern England and the sand lizard found throughout Great Britain in coastal dune areas.

These species are also afforded a higher level of protection because they are European Protected Species.

Habitat.

Maintaining the right body temperature is vital to reptiles' survival. In the morning they find a warm basking site to heat up their bodies and then later they may move back into the shade so as not to overheat. Hence, reptiles require a habitat that provides a range of suitable refugia for shelter such as dense vegetation, rubble or log piles, or crevices and open areas for basking such as bare ground, rocks or railway ballast shoulders. During hot summers reptiles may be found in damper, cooler sites. Reptiles hibernate, spending the winter in burrows or under logs protected from the cold and predators.

When disturbed in their natural habitat reptiles will usually move away quickly.

Legislation.

Reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981. They received greater protection following reviews of the schedules published in 1988 and 1991. This means they are protected against intentional or recklessly killing and injuring and against sale or transporting for sale.

If reptiles are identified during works, stop all works and contact Whitcher Wildlife Ltd directly on 01226 753271 or at info@whitcher-wildlife.co.uk