



**LOWER COATES FARM, BLACKERGREEN
LANE, SILKSTONE COMMON, BARNSELY.**

OS REF: SE 2827 0404.

BAT SURVEY.

Ref No: 210503.

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1. INTRODUCTION.

1.1. There are plans to renovate the two largest stone barns at Lower Coates Farm along Blackergreen Lane in Silkstone.

1.2. Whitcher Wildlife Ltd was therefore commissioned to carry out a bat survey of the two stone barns closest to the farmhouse to establish whether there are any issues that may affect any proposed works.

1.3. The initial daytime and first dusk survey were carried out on 2nd June 2021, the dawn survey was carried out on 16th June 2021 and the second dusk survey on 14th July 2021. This report outlines the findings of these surveys and makes appropriate recommendations.

1.4. Appendix I of this report provides additional information on bats and the protection afforded to them and is designed to assist the reader in understanding the contents of this report.

2. SURVEY METHODOLOGY.

2.1. The buildings were thoroughly checked internally and externally for potential bat roosting sites by looking for the following signs: -

- * Holes, cracks or crevices.
- * Bat droppings.
- * Prey remains.
- * Staining on external walls.

2.2. Unless otherwise stated, all lofts were accessed and inspected using a high-powered torch and where necessary an endoscope.

2.3. A thorough external inspection was carried out from ground level for any gaps or openings in the roof and ridge tiles, behind soffits and fascia's and in the walls of the structure for suitable roost access points and field signs to indicate possible use by bats.

2.4. All window cills, walls and the ground around the structure were checked for signs of bat droppings or staining to indicate possible use by bats. Where necessary, ladders were utilised to gain access within the limits of health and safety. Any access constraints encountered are outlined within the following report.

2.5. All survey work was carried out in line with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*, with an assessment of the buildings suitability for roosting bats made in accordance with these guidelines.

2.6. The subsequent emergence and return surveys were also conducted in accordance with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. It was conducted by a sufficient number of surveyors to cover all areas of roosting potential, in suitable weather conditions.

2.7. All surveyors were equipped with Batbox Duet bat detectors, or similar. The use of static recording devices such as Anabat SD2's and video cameras with infrared lights were also utilised where appropriate.

2.8. The survey was undertaken by James Campbell, Ashley Reaney and another experienced surveyor.

2.9. 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, water voles and barn owls.
- Scottish Natural Heritage Licences in respect of bats and great crested newts.
- Natural Resources 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.

2.10. Ashley has had experience in a professional capacity as an Assistant Ecologist focusing primarily on survey work for birds, protected species and Phase 1 Habitat surveys. He has also successfully completed numerous courses run by CIEEM, BCT and FSC regarding protected species and in carrying out Phase 1 Habitat surveys. Ashley joined Whitcher Wildlife Ltd in June 2021 as an Ecological Consultant.

3. SURVEY RESULTS.

3.1. Data Search Results.

3.1.1. A desktop data search has been requested from the South Yorkshire Bat Group for records of bats and bat roosts within 2km of the survey area.

3.1.2. The data search returned recent records of Brown Long-eared and Common Pipistrelle roosts 1.3km from the survey area.

3.1.3. Other roosts of Brown Long-eared bats, Natterer's and Common Pipistrelle were all recorded over 2km from the survey site

3.2. Site Description.

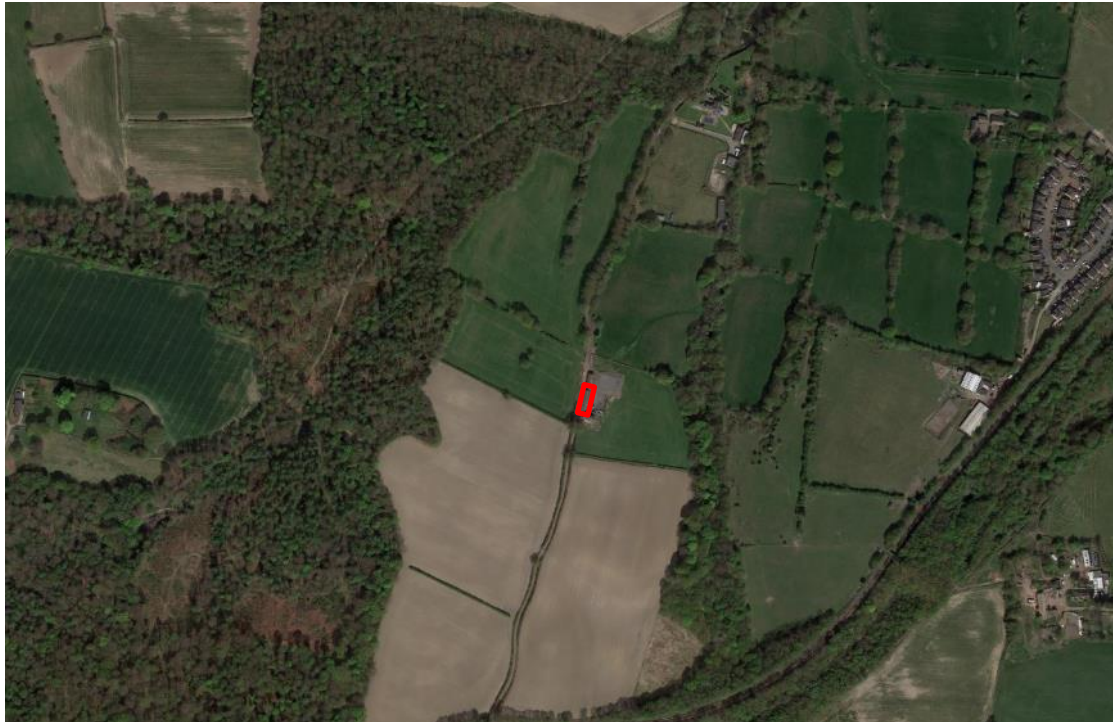
3.2.1. The survey area is two attached stone barns at the south end of Lower Coates Farm off Blackergreen Lane, Silkstone (outlined in red below). The aerial photograph below shows the survey.



3.2.2. There is a small brick building attached to the northernmost barns that was also considered for this survey despite not being part of the planning application for this site.

3.2.3. The surrounding area comprises a rural environment surrounded by agricultural land. The pastoral and arable fields immediately surrounding the property are bordered by trees and hedgerows with a large parcel of mixed woodland to the west of the site providing good connectivity to woodlands in the surrounding landscape.

3.2.4. The aerial photograph below shows the surrounding landscape where the site is situated.



3.2.5. The survey area is two large, attached barns with a pitched roof covered with stone tiles. Internally there is a loft space in the northernmost barn, which is accessible from the stairs in the adjoining brick building.

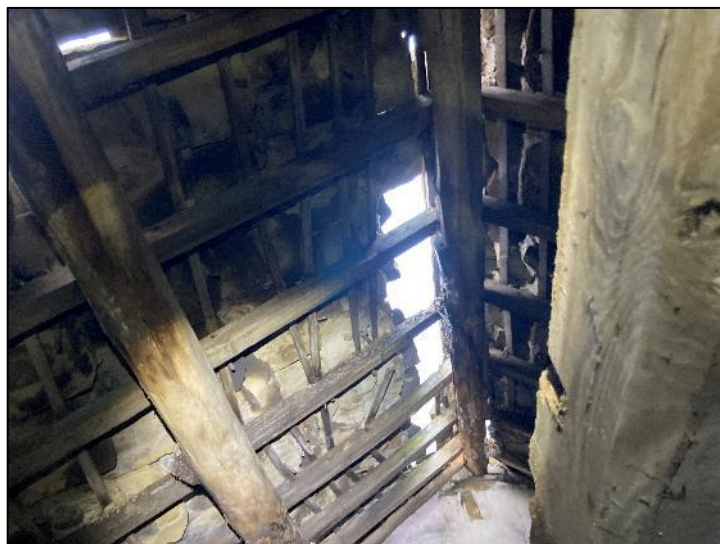
3.3. Daytime Survey Results.

3.3.1. The walls of the building are in poor condition with cracks and crevices between the stone bricks on both the west and east facing walls. There were multiple holes, likely used for timber beams, allowing for potential access points in and out of the building for bats.



3.3.2. There are multiple open doors and windows on both sides of the barns with large entrances that are continuously left open to the external environment.

3.3.3. The roofs of the barns are in a state of disrepair with sagging ridge tiles with numerous gaps in the mortar below them and multiple slipped and missing tiles. A large amount of light can be seen penetrating the roof at ridge height as a result of the numerous slipped and missing tiles. Most gaps are small in size though some are large enough to pass a hand through, see photograph below.



3.2.4. Internally, the loft space are not lined with material and the space above the barn closest to the farmhouse had no floorboards and hence was only inspected from ground level during the internal building inspection.

3.3.5. The roof of the building was in poor condition with multiple missing and slipped tiles. From the inside a substantial amount of light could be seen at ridge height resulting in much of the barn being exposed to the external environment.

3.3.6. A small number of bat droppings and an insect wing were found on the floor of the barn closets to the farmhouse. The size and shape of these droppings indicated they were from a pipistrelle bat and the insect wing suggests the presence of a feeding roost present within the barn, see right photograph.



3.3.8. Overall, the building provides **high** potential for roosting bats. The gaps in the stone walls offer a lot of potential for crevice dwelling bats and the loft space provides easy access into and out of the barns. The size and number of gaps in the roof eliminates the potential for a high number of roosting bats in the property due to high temperature fluctuations.

3.3.7. It should also be noted the survey area is within a rural environment with little light pollution and ample connectivity to foraging habitat.

3.3.9. A pair of Barn Swallows (*Hirundo rustica*) were seen emerging from the adjoining brick building to the north of the barns suggesting this space may be used as a nesting site. Three domed nests, constructed with mud and twigs were also seen in the loft space of the southern barn but these were not in use at the time of the survey.

3.4. First Dusk Emergence Survey Results

3.4.1. Three surveyors carried out a dusk emergence survey on the evening of 2nd June 2021. The evening was dry and clear with a temperature of 14°C at 21:00. There was a slight breeze throughout the survey. Sunset was at 21:26 and the survey commenced at 21:25.

3.4.2. The surveyors were positioned in a manner which allowed for clear and unhindered views of the three exterior walls. The position of each surveyor (S) was as shown on the aerial photograph below. Each surveyor was equipped with a Batbox Duet detector and a two-way radio for communication. A static Anabat recorder was

also placed close by to record bat activity for subsequent computer analysis using Analook software.



3.4.3. One of the surveyors holds a current Natural England bat survey licence and the other two surveyors were experienced assistants.

3.4.4. The following are the observations of the surveyors.

3.4.4.1. Surveyor 1.

21:31 – Common Pipistrelle emerged from the southern gable end of the barn.

21:46 – Common Pipistrelle emerged from the same location on the barn.

22:02 to 22:51 – Intermittent Common Pipistrelle foraging along the track to the west of the farm and over the garden.

Anabat 11 located with Surveyor 1 confirmed the findings of the surveyor, recording 12 common pipistrelle passes between 22:30 and 22:51.

3.4.4.2. Surveyor 2.

21:31 – Common Pipistrelle was seen passing over the barn from west to east.

22:02 to 22:42 – Intermittent Common Pipistrelle activity with individuals foraging and passing over the area.

The Anabat 10 with Surveyor 2 confirmed the findings of surveyor 2 and recorded 18 bat passes.

3.4.4.3. Surveyor 3.

21:31 – Common Pipistrelle emerged from the southern gable end of the barn.

21:46 – Common Pipistrelle emerged from the same location on the barn.

22:05 – Common Pipistrelle feeding at the eastern side of the barn and was seen entering the building from the west before exiting on the east side of the barn.

22:06 – Soprano Pipistrelle feeding at the southern gable end of the barn.

22:03 to 22:44 – Intermittent Common Pipistrelle foraging to the east of the barn and over the garden.

The Anabat 13 with Surveyor 3 recorded passes of Common Pipistrelle and the occasional Soprano Pipistrelle confirmed the findings of surveyor 3 and recorded 12 bat passes.

3.4.5. Overall, Common Pipistrelle bats were found to emerge from the building, with foraging or commuting activity within the survey area. Soprano Pipistrelle were also recorded foraging within the survey site.

3.5. Dawn Survey Results

3.5.1. Two surveyors carried out the first dawn survey on the early hours of 16th June 2021. The morning was dry and clear with a temperature of 14°C at 03:00. There was a slight breeze throughout the survey. Sunrise was at 04:35 and the survey commenced at 03:05.

3.5.2. The two surveyors took up positions S1 and S3 marked on the aerial photograph above, a third Anabat was placed inside the southernmost barn.

3.5.3. The following are the observations of the two surveyors on 16th June 2021.

3.5.3.1. Surveyor 1.

03:07 – 03:21 - Intermittent Common Pipistrelle passes and foraging activity
03:41 – Long-eared bat passing along the farm track
03:53 - Common Pipistrelle recorded entering the barn from the west side
03:57 – Two Common Pipistrelles recorded entering the barn from the east side

Anabat 5 located with Surveyor 1 confirmed these findings of Common Pipistrelle but did not detect a Long-eared species during the survey. Anabat 5 recorded 3 Common Pipistrelles swarming around the farmhouse at 03:47.

Two to four Common Pipistrelles were recorded at 03:47 swarming around the south side of the farmhouse and entering under the gutter on its southern face. Two more were seen exiting a gap in the mortar on the west facing gable end of the farmhouse at 03:52.

3.5.3.2. Surveyor 2.

03:11 – 03:15 - Intermittent Common Pipistrelle passes and foraging activity
03:16 – Noctule pass was heard by the surveyor but not seen
04:00 – Long-eared foraging inside the northernmost barn
04:12 – Long-eared bat foraging/swarming inside the building and entered a roost under the ridge tiles from the upstairs window.

Anabat 5 located with Surveyor 2 confirmed these findings of Common Pipistrelle but did not detect a Noctule bat during the survey.

Three Common Pipistrelles were also recorded by Anabat 5 and were seen by the surveyor around the farmhouse around the same time they were seen swarming on the south side by Surveyor 1.

Anabat 2 was placed inside the northernmost stone barn for the duration of the survey and recorded three instances of Common Pipistrelle using the building but did not detect a Long-eared bat.

3.6. Second Dusk Emergence Survey Results

3.6.1. Two surveyors also carried out a dusk emergence survey on the evening of 14th July 2021. The evening was dry and clear with a temperature of 22°C at 21:15. There was a slight breeze throughout the survey. Sunset was at 21:24 and the survey commenced at 21:25.

3.6.2. The two surveyors took up positions S1 and S3 marked on the aerial photograph above, a third Anabat was placed inside the southernmost barn.

3.6.3. The following are the observations of the two surveyors on 14th July 2021.

3.6.3.1. Surveyor 1.

21:42 – Common Pipistrelle pass from east side of survey area

22:02 – 22:05 Intermittent foraging of Common Pipistrelle

22:15 – 22:22 Intermittent foraging of Common Pipistrelle

22:26 – Common Pipistrelle foraging along the farm track

22:34 – Common Pipistrelle foraging along the farm track

Anabat 18 located with Surveyor 1 confirmed these findings of Common Pipistrelle foraging activity and also recorded three instances of Myotis within the survey area at 22:15, 22:19 and 22:26.

3.6.3.2. Surveyor 2.

21:42 – Common Pipistrelle pass was heard but not seen

21:55 – Unidentified species emerged underneath a roof tile of southern barn.

22:09 – Possible Brown Long-eared bat seen flying around the inside of the southern barn.

22:12 – Brown Long-eared bat entered a roost on the top wall separated the two stone barns.

22:19 to 22:21- Common Pipistrelle foraging in the area east of the barns.

22:26 – Brown Long-eared bat flying along the full length of the southern barn occasionally landing on beams.

22:33 – Common Pipistrelle foraging from north to south.

Anabat 14 was placed with Surveyor 2 and confirm the foraging activity recorded by the surveyor.

Anabat 19 was placed inside the northernmost stone barn for the duration of the survey in order to detect the Long-eared bat that was roosting inside. The Anabat did not detect any calls but the presence of the Long-eared bat was confirmed by visual sightings by both surveyors.

4. EVALUATION OF FINDINGS.

4.1. The building is assessed as providing **high** potential for roosting bats as the building provides opportunities for bats but is unlikely to support a significant roost due to the numerous large spaces in the roof leading to high fluctuations of temperature inside the barn.

4.2. A few bat droppings and an insect wing were identified during the initial survey suggesting the presence of a feeding roost within the loft space of the southern barn. This was confirmed via visual sightings of a Brown Long-eared bat during the dawn and second dusk survey. The likely location of the roost was identified as a gap between two timber beams dividing the roof space between the large stone barns.

4.3. Two Common Pipistrelle bats were identified emerging from inside the southern barn building during the first dusk survey. No bats were seen entering or emerging from roosts during the following two surveys. The roost is therefore assessed as an occasional Common Pipistrelle day roost.

4.4. All dusk and dawn surveys found a moderate level of bat activity with numerous Common Pipistrelle passes and the occasional Soprano Pipistrelle and Myotis passes. Common Pipistrelle were also seen emerging from the southern gable end of the barn during the first dusk survey.

4.5. Therefore, the proposed works will have a significant impact on roosting bats and a mitigation strategy will be required in the resulting structure following completion of construction works along with sufficient roosting space provided during the works themselves.

4.6. The survey area is assessed as providing high suitability for foraging and commuting bats, which was further confirmed during the dusk emergence survey. The plans for the site will not fragment the habitat and considerate lighting schemes have the opportunity to reduce any impact for foraging and commuting bats within the survey area.

4.7. The surveyed buildings provide suitable habitat for nesting birds during the nesting season which extends between March and September each year. Some old Swallow nests were identified during this survey, therefore any works undertaken on the buildings during the nesting bird season will potentially have a direct impact on nesting birds.

5. MITIGATION STRATEGY.

5.1. Once full planning consent has been issued, prior to any works being carried out that will have any impact on the roost, a Natural England licence will be applied for to ensure that the favourable conservation status of the species will be maintained throughout.

5.2. Full details of the mitigation proposals will be included in the licence application, which are summarised below.

5.3. Before any works are carried out that will impact on the bat roost, a new roost in the form of a bat loft will be created to mitigate for the loss of the roof space from the two stone barns that is occupied by a brown long eared bat.

5.4. To mitigate the impacts on the Brown long-eared roost, the dimensions of the roof space in the new building will need to be a minimum of 5 square metres at its base and a minimum apex height of 2.5 metres.

5.5. Additional roosting features will also be provided by fixing small sections of rafters approximately 600mm long to the side of the false rafters with spacers forming a narrow slot butted up to the ridge board at the top end and with the upper half bridged over with 75mm x 15mm untreated sawn timbers, or equivalent, to form a long narrow cavity. Six such features (three pairs) will be provided in the new loft. Examples of these features are shown in the photograph below.



5.6. Internal partitioning of the loft apex will be provided with triangular shaped pieces of rough faced ply boards, fastened to the rafters and hanging down 500mm below the ridge. A second piece of ply board will be fixed onto this hanging down 300mm below the ridge, to provide a cavity between the two boards and an area for the bats to land on before crawling up into the cavity. These will be fixed on using 25mm spacers between the boards. These will be provided at three locations in the loft between the false rafter features. Examples of these features are shown in the photograph below.



5.7. Two access points will be created for the bats to gain access inside the new loft. These will be in the form of narrow slots 75mm x 20mm between the roof tiles constructed from lead flashing but will be timber lined inside to provide a rough surface for bats to crawl on.

5.8. As the exact location of the Common Pipistrelle roost identified during the first survey is not known due to it being an occasional roost it will not be possible to carry out any exclusion measures. As the building provides no potential for hibernating bats, upon receipt of the Natural England licence, the building will be demolished during the winter months between October and March when the overnight temperatures are consistently below 10°C and bats will not be present in the building.

5.9. One Vivara Pro WoodStone Bat Box (see picture adjacent) will be installed on the western or southern aspect of the main farmhouse by the following March to provide a roost location for bats to use until replacement bat roosts are incorporated into the new houses on the site.



5.10. Upon receipt of the Natural England licence, the bat(s) will be excluded from the roost(s) by removing every fifth ridge tile along the ridge within the vicinity of the bat roost carefully by hand to make it more open and draughty and less attractive to the bats. This will be undertaken at least one week prior to demolition of the roost during either late September/October or March/early April when bats are least likely to be present in the roost.

5.11. When the time comes to remove the roof tiles, the areas within the vicinity of the bat roosts will be inspected using a bright torch and an endoscope and the roof tiles will be removed carefully by hand under direct supervision of a licenced ecologist.

5.12. In the event that a bat is found at any time, the ecologist will remove the bat by hand and will place the bat in the mitigation loft provided.

5.13. Once the ecologist is satisfied that no bats remain the building will be released for the remainder of the works to be completed.

Prepared by:	
Ashley Reaney MBio, PhD	Date: 25 th July 2021.

Checked by:	
Derek Whitcher. BSc, MCIEEM, MCMI	Date: 10 th August 2021

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Appendix I. BAT INFORMATION.

Ecology

There are currently 18 species of bat residing in Britain, 17 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.