CAUSEWAY FARM, BALDERSTONE

BAT ACTIVITY SURVEY

FINAL REPORT

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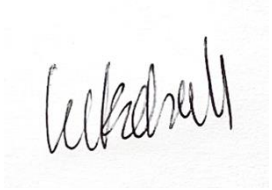	

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Executive Summary

This report presents the findings of a bat activity survey at Causeway Farm near Balderstone, Lancashire, which was commissioned by Avison Young to inform works involving the construction of a number of industrial units within the site boundaries outlined on the survey plan in Appendix A.

In line with Bat Conservation Trust guidance, the site was subject to three transect visits carried out across optimal survey season (May-September inclusive) along with a static bat detector left in situ to determine overall bat activity. The results of these surveys determined the site to be subject to **low** levels of bat activity, mainly focused along linear features and the watercourse at the south-eastern extent of the site. Peak activity levels on all visits occurred approximately 20 minutes after sunset and lasted between 15 and 20 minutes consisting mainly of foraging behaviour.

Given high levels of lighting from the A59 it is considered that the site does not provide high value habitat for commuting and foraging bats. However, surveys confirm the use of the site by several bat species for commuting and foraging. On this basis suitable mitigation should be deployed:

- Minimising disturbance during construction.
- A sensitive lighting scheme, designed in accordance with the Bat Conservation Trust guidelines (ILP 2018).
- The hedgerow/woody habitat on the eastern side of the site should be maintained as a 'dark corridor' and suitable bat boxes installed onto trees to provide an overall enhancement to local bat populations.
- Additional planting of hedgerows using native species incorporated into the landscaping scheme for the site.

1. Introduction

1.1 Bowland Ecology Ltd was commissioned by Avison Young to undertake a bat activity survey at the Causeway Farm, Balderstone. This survey work is required to determine the levels of bat activity throughout the site.

Site description

1.2 The application site is centred at Ordnance Survey Grid Reference SD 64587 31486, to the south-east of Balderstone, Lancashire (Figure 1, below). The site consists of two fields, grazed by livestock at the time of survey with a linear hedgerow separating the two and a small watercourse running along the south-eastern extent of the site.

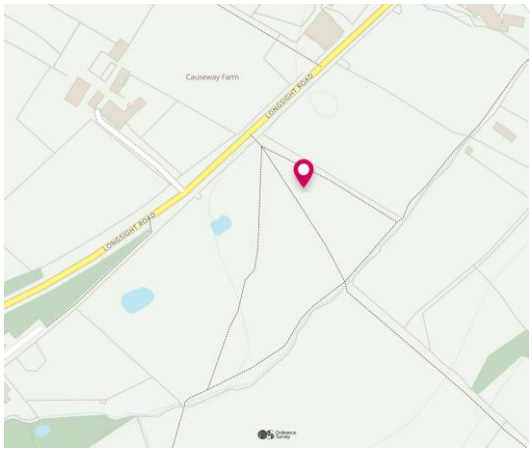

Figure 1: Location of application site. Ordnance Survey data.

2. Methodology

2.1 Guidance issued within Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), states that a minimum of three bat activity surveys should be undertaken on sites with low suitability habitat for bats alongside one static deployed three times for five consecutive days. The transect survey commenced at sunset and continued until 2 hours after sunset. The survey was conducted using electronic bat detectors, both handheld and static, and experienced surveyors to facilitate the detection of bats and to aid in the determination of species of bat using the site.

2.2 The dusk emergence surveys were undertaken on the 12th July, 17th August and 14th September 2022. The survey methodology followed the guidelines as described in Collins, 2016. Details regarding the date, start time, weather condition and surveyors is shown in Table 1 below.

2.3 Static detector (location available on survey plan Appendix A) deployed for five consecutive days after each transect survey. Data recovered was analysed by appropriately trained and experienced surveyors and assistants with Anabat Insight software.

Table 1: Date, time, weather condition and surveyors during bat surveys

Date	Start and end time and time of sunset/ sunrise	Weather Conditions	Surveyors (Transect route walked to be found in Appendix A)
12-07-2022	Start: 21:36 End: 23:36 Sunset: 21:36	Start Temp – 20°C End Temp – 18°C Beaufort wind scale – F1 Precipitation – none Cloud cover – 1/8	Rhiannon Kamink MSc, BSc (Hons) QCIEEM and Lucy Brookfield (*Licenced bat surveyor*)
17-08-2022	Start: 20:36 End: 22:36 Sunset: 20:36	Start Temp – 16°C End Temp – 13°C Beaufort wind scale – F1 Precipitation – none Cloud cover – 7/8	Rhiannon Kamink and Lucy Brookfield
14-09-2022	Start: 19:30 End: 21:30 Sunset: 19:30	Start Temp – 16°C End Temp – 14°C Beaufort wind scale – F1 Precipitation – none Cloud cover – 7/8	Sam Robinson Ba (Hons), QCIEEM and Rhiannon Kamink

2.4 The surveys were completed at an appropriate time of year and the weather conditions were suitable.

2.5 During the surveys, surveyors followed a predetermined transect route designed to give the best coverage of the site and focused in on those areas with the most potential value for bats.

3. Results

Bat Activity Survey

3.1 The results of visit 1 determined low activity levels consisting of small numbers (individuals) of common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and Myotis sp, (*Myotis*) commuting through and foraging within the site. Peak activity levels occurred from approximately 22:21 until 23:00.

3.2 Visit 2 yielded similar results. Activity levels were low and consisted of the same species as found on visit 1 demonstrating the same behaviour of commuting through and foraging within the site. Peak activity levels occurred from approximately 21:23 until 21:39.

3.3 Visit 3 further confirmed low levels of activity within the site, again consisting of commuting and foraging. This visit returned records of common and soprano pipistrelle but no myotis. Peak activity occurred from 19:58 until 20:07.

3.4 Across all visits activity was focused along linear features associated with the site (hedgerows in the centre and northern edge of the site) and along the watercourse at the south-eastern edge.

3.5 The static detector data analysis revealed further confirmation of the sites low levels of activity throughout the survey period, also confirmed is the importance of the watercourse as a foraging and commuting feature for a multitude of species.

3.6 Species detected include common pipistrelle, soprano pipistrelle, myotis, brown long eared (*Plecotus auritus*) and noctule (*Nyctalus noctula*). Activity included foraging, commuting and social calling. The site occasionally had high numbers of bat calls detected (deployment 2 Appendix B), however, due to the temporal spacing of the recordings this is considered evidence of multiple foraging passes of low numbers of bats as opposed to low numbers of passes by a high number of individuals.

3.7 Full table of results available in Appendix B.

4. Discussion and Conclusions

4.1 The survey demonstrates that the site supports low levels of bat activity, as mentioned previously, this activity is mainly limited to the linear hedgerows and the watercourse.

4.2 Works affecting either the watercourse or hedgerows on site are likely to have a negative impact on local bat populations. The dividing hedge in the centre, along with the hedge to the north and the watercourse to the south east appear to be used by small numbers of bats as commuting and foraging features on site. Removal or disturbance of any of these features should be appropriately mitigated with supplementary planting of linear features to aid in sustaining the local bat activity levels at the site.

4.3 Works within this site are not anticipated to cause significant disturbance to local bat populations (with appropriate mitigation planting of linear features). Proposals should however be designed to minimise light spillage during works and post construction. This is recommended due to the proximity of the site to the A59 (adjacent to the north-western extent of the site) which already produces a lot of light and noise pollution and further increases in this area could lead to the site losing value to local bat populations in the area.

4.4 In summary, suitable mitigation should take the form of:

- Minimising disturbance during construction i.e., avoidance of night working and avoiding artificial light spill onto adjacent habitats.

- The completed development should incorporate a sensitive lighting scheme, designed in accordance with the Bat Conservation Trust guidelines (ILP 2018).

- There will be no light spillage onto adjacent foraging habitats with particular attention to the retained habitats on the eastern boundary of the site. The hedgerow/woody habitat on the eastern side of the site should be maintained as a ‘dark corridor’ and suitable bat boxes installed onto trees to provide an overall enhancement to local bat populations.

- Additional planting of hedgerows using native species incorporated into the landscaping scheme for the site. Specifically involving the eastern hedgerow running along the back of the site to extend a ‘dark corridor’ from the treeline surrounding the watercourse (See Appendix D)

- The use of LED luminaries with a warm colour temperature (< 2700K) will also reduce disturbance to foraging and commuting bats, as will using dimmer settings or motion sensors overnight.

5. References

Bat Conservation Trust (2015) Encouraging bats. Available at: https://cdn.bats.org.uk/uploads/pdf/Resources/Encouraging-Bats.pdf?v=1646658894

British Standards Institution (2013) BS 42020:2013 Biodiversity: Code of practice for planning and development. British Standards Institution, London.

CIEEM (2017a) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2017b) Guidelines for Preliminary Ecological Appraisal 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.

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

Institute of Lighting Professionals (2018) Bats and artificial lighting in the UK. The Bat Conservation Trust, London.

National Planning Policy Framework (2021) Ministry of Housing, Communities and Local Government, London.

Appendix A – Survey Plan and Results

Appendix B – Bat Activity Survey Results

Visit 1

Reference Number	Time	Species	Number	Behaviour
1	22:21	C pip, S pip, Myotis	1 of each	Commuting
2	22:29	C pip, S pip	2 x S pip, 1 x C pip	Commuting and Foraging
3	22:50	Myotis	1	Commuting
4	23:06	C pip	1 bat, 4 passes	Foraging
5	23:09	S pip	1	Commuting

Visit 2

Reference Number	Time	Species	Number	Behaviour
1	20:57	C pip	2	Commuting
2	21:20	S pip	1	Foraging
3	21:23	C pip, S pip	2	Foraging
4	21: 25	Myotis	1	Commuting
5	21:31	C pip	1	Commuting
6	21:39	C pip	1	Commuting

Visit 3

Reference Number	Time	Species	Number	Behaviour
1	19:58	C pip	1	Foraging
2	20:07	S pip	1	Foraging
3	20:22	S pip	1	Foraging

Static Deployment 1

Night	Myotis sp.	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Plecotus auritus	Ppgy Social Call	Ppip Social Call	Unknown Pip Social Call	Nyctalus noctula
12/07/2022	15	6	0	0	0	0	0	0
13/07/2022	24	50	6	0	0	0	1	2
14/07/2022	72	12	4	0	0	0	1	0
15/07/2022	52	8	0	0	0	0	0	7
16/07/2022	82	21	2	0	0	0	1	11

Static Deployment 2

Night	Myotis sp.	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Plecotus auritus	Ppgy Social Call	Ppip Social Call	Unknown Pip Social Call	Nyctalus noctula
17/08/2022	45	339	541	1	481	4	1	2
18/08/2022	40	191	180	2	130	8	133	5
19/08/2022	37	392	112	0	2	3	84	5
20/08/2022	44	270	60	0	2	3	31	0
21/08/2022	65	207	232	0	148	0	148	1

Static Deployment 3

Night	Myotis sp.	Pipistrellus pipistrellus	Pipistrellus pygmaeus	Plecotus auritus	Ppgy Social Call	Ppip Social Call	Unknown Pip Social Call	Nyctalus noctula
14/09/2022	62	27	35	0	2	0	13	1
15/09/2022	50	68	19	1	0	1	2	0
16/09/2022	16	50	15	0	0	0	0	0
17/09/2022	28	99	35	0	0	0	10	3
18/09/2022	29	45	51	0	0	0	0	0

Appendix C – Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2017.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Species that are protected by European and national legislation			
Bats *European protected species*	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately[1] capture, injure or kill a bat; Deliberate disturbance[2] of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. https://www.gov.uk/bats-protection-surveys-and-licences *European Protected Species: Mitigation Licensing- How to get a licence* (NE 2010) *Bat Mitigation Guidelines* (English Nature 2004) *Bat Workers Manual* (JNCC 2004) *BS8596:2015 Surveying for bats in trees and woodland* (BSI, 2015)
	Wildlife and Countryside Act 1981 (as amended)[4] S.9	Intentionally or recklessly[3] obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
	Wildlife and Countryside Act 1981 (as amended)[4] S.9	Intentionally or recklessly[3] obstruct access to any structure or place used for shelter or protection or disturb a great crested newt in such a place.	Licences issued for science (survey), education and conservation by NE.

[1] Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing [2] Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong. Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance. [3] The term 'reckless' is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk. [4] The Wildlife and Countryside Act (1981) has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. A full list of amendments can be found at https://jncc.gov.uk/our-work/wildlife-countryside-act/

Appendix D – Bat Mitigation Plan