BAT ACTIVITY SURVEY REPORT

at

Land off Highmoor Lane
Cleckheaton
West Yorkshire
BD19 6LW

Client:
Thirteen Group

Client Address:
2 Hudson Quay
Windward Way
Middlesbrough
TS2 1QG

Client Contact:
2 Hudson Quay
Windward Way
Middlesbrough
TS2 1QG

JCA Ref:
22182b/AWe

Date of Report:
04/12/2025

JCA Limited
Arboricultural & Ecological Consultants

Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
1	15/08/24	James Foster	Apr 2025 – Oct 2025	Adam West	04/12/25	Adam West	04/12/25	Alex Donovan

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development 2018* and the *CIEEM's Code of Professional Conduct.*

This Assessment is only valid for the named client and the project described. JCA Limited. accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purpose for which it was commissioned. If the scope of works or timing of the project are altered the advice given in this report may not be valid. Information and data provided within this report is considered accurate at the time of writing.

Provided no significant changes are made to the proposals or on the site (e.g. significant changes to management practices or habitats present) subsequent to the report's issue; this report can be considered valid for 18 months from the date of issue.

As part of membership to our professional body (CIEEM) and EPS licence reporting we are required to provide our biological results to applicable biological record centres. As such, it is our intention to supply biological data collected as part of this assessment, where recorded, to the relevant BRC. If the project is sensitive in nature, we may be able to delay submitting the records until the project enters the public domain, however, this must be discussed with JCA Limited and agreed in writing.

Summary

JCA Limited was commissioned by **Thirteen Group** to provide ecological advice to inform works at **Land off Highmoor Lane** hereafter referred to as 'the site'. The site is located at **Cleckheaton, West Yorkshire, BD19 6LW,** Ordnance Survey (OS) National Grid Reference **SE 17055 24660**.

The purpose of this report is to present the findings of the survey, an interpretation of the findings and to provide recommendations for undertaking the proposed works in accordance with relevant legislation.

Bats and their roosts are protected under UK law. Development works that are likely to affect bats or their roost sites must be completed under licence from the statutory conservation body, in this case Natural England (NE).

An evaluation of the site, likely impacts of the scheme upon bats and recommendations for proceeding with works in compliance with legislation are presented in Chapters 4, 5 and 6 of this report.

Contents

1. Introduction

1.1 Background

1.1.1 In April 2025, JCA Limited was instructed by **Thirteen Group** to undertake bat activity survey of a site located at **BD19 6LW,** hereafter referred to as 'the site'. The purpose of the survey is to establish a baseline of ecological information and assess whether the proposed works, hereafter referred to as 'the scheme', have the potential to adversely affect any protected or notable habitats or species.

1.2 Scheme Location

1.2.1 The application site is located at Ordnance Survey (OS) National Grid Reference SE 17055 24660, with nearby postcode BD19 6LW. The site is bordered to the north by the A649 Halifax Road, residential properties and arable grasslands with hedgerows and lines of trees. To the east by residential properties, vegetated gardens with arable grassland and lines of trees further afield. To the south by a cricket club and to the west by lines of trees, the M62 motorway and a golf club.

1.3 Details of Proposed Development

1.3.1 The scheme is the construction of 40 residential properties which are a mixture of two story detached and semi-detached houses and apartments.

1.4 Aims and Objectives

1.4.1 The purpose of the survey is to establish a baseline of ecological information and assess whether the proposed development activities have the potential to adversely affect any protected or notable habitats or species. The following tasks have been undertaken:

- Desktop study – a review of environmental records for the surrounding area to obtain existing information on statutory and non-statutory designated sites of nature conservation interest, and the presence of bat species within the site and its environs.
- Field surveys – a bat activity survey involving one site visit per month to record bat activity on site.
- Ecological report – an assessment of the potential ecological constraints to the proposed works at the site and recommendations for avoidance, mitigation, and enhancement where appropriate. Locations of any features constituting ecological constraints or of other ecological interest and vegetation recorded on and around the development are included in an accompanying Habitat Map (Appendix 1). This report and the maps are supported by information regarding current legislation (Appendix 5).

2. Methodology

2.1 Desktop Study

2.1.1 The desktop study involved conducting database searches for statutory and non-statutory designated sites and European Protected Species (EPS) licensing applications within a 2km radius of the site. In addition, international sites designated for bats within 30km of the site were searched for. The baseline conditions are based on a review of existing available information including:

- MAGIC (Multi-Agency Geographical Information for the Countryside) website (to identify statutory designated sites and EPS licences).
- Ordnance Survey mapping (to identify potentially notable habitats including ponds).
- Aerial photography (to identify potentially notable habitats).
- Data search for records of bat species on and within 2km of the site within the last ten years (exempting bat roosts, of which all records are included) obtained from West Yorkshire Ecology Service (WYES), the local environmental records centre for West Yorkshire.

2.2 Field Surveys

2.2.1 The field survey was designed with reference to Bat Surveys: Good Practice Guidelines 4th Edition (Collins, 2023).

2.2.2 Activity surveys were undertaken by JCA as directed by JCA (report ref: 22182/JBF) survey work and assessment of habitat suitability. The static detector locations were designed to encompass the different range of habitats within the site, with those habitats determined to have high potential for bat use being the main focus of the survey.

2.2.3 The survey was carried out by Adam West (Principal Ecologist, JCA), who holds a Natural England Level 2 bat survey class licence.

2.2.4 With reference to Collins (2023), automatic bat detectors (Anabat Swift) were left at two locations across the site for five consecutive nights from April to October 2025 (inclusive).

2.2.5 The locations of the automated recorders were in positions away from disturbance from the public and secured to trees (Appendix 1). The detectors were set to record from 30 minutes before sunset until 30 minutes after dawn.

2.2.6 Recorded data were analysed using Anabat Insight software.

2.3 Survey Constraints

2.3.1 The comprehensiveness of any ecological assessment will be limited by the season in which surveys are undertaken. To determine presence or likely absence of a protected species and their status (i.e. the number of individuals present) usually requires multiple visits at suitable times of the year. The survey conditions and timings were suitable for surveying bats and therefore are not considered to be a limitation to the effectiveness of the surveys.

2.3.2 Due to an unexplained equipment failure, no static data was recorded in the month of October at Location 3. This is not unusual for such highly sensitive technical equipment. Using the data available, professional judgement can be used to extrapolate levels of activity at this location.

2.3.3 The above issue is not considered to constitute a significant constraint on the validity of the survey as sufficient data has been obtained at other times to extrapolate levels of bat activity in the absence of field data.

2.3.4 No transect was carried out on this site because the ground conditions were not safe for surveyors to walk around in darkness without significant risk of injury and could not be made safe to facilitate safe passage. The survey was designed to ascertain which species were using the site, what level of activity was present on site and if features known to be utilised by bats in general were utilised specifically on this site. These questions were answered by the deployment of static detectors. The absence of walked transects does not, therefore, pose a constraint to the survey.

2.3.5 The details of this report will remain valid for a period of 18 months. If works have not commenced within this period or land use on site changes, it is recommended that a new review of the ecological conditions is undertaken.

3. Results

3.1 Desktop Study

3.1.1 Local Data Centre Records: WYES was commissioned to provide the records held for bat species within a 2km radius of the survey site. The results have been summarised below. It should be noted that the absence of records should not be taken as confirmation bat species are absent from the search area. Please see **Table 1** below for a summary of the bat records from the last ten years obtained from WYES. Please see **Table 2** below for a summary of the bat roost records obtained from WYES.

Table 1: Summary of bat records from the last ten years held by WYES within 2km of the site.

Scientific name	Common name	Designation	Latest Date	Number of records	Distance from site (m)
Myotis sp.	Unidentified *Myotis* bat	EPS WCA	2019	2	1883
Nyctalus noctula	Noctule	EPS WCA S41 KBAP WYBAP	2020	15	368
Nyctalus sp.	Unidentified *Nyctalus* bat	EPS WCA	2019	9	1056
Pipistrellus pipistrellus	Common pipistrelle	EPS WCA WYBAP	2023	87	368
Pipistrellus pygmaeus	Soprano pipistrelle	EPS WCA S41 KBAP WYBAP	2019	3	368
Pipistrellus sp.	Unidentified *Pipistrellus* bat	EPS WCA	2014	2	1312
Plecotus auritus	Brown long-eared bat	EPS WCA S41 KBAP WYBAP	2014	1	368

Key:
EPS: European Protected Species: Species listed under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.
WCA: Schedule 5 and 6 of the Wildlife & Countryside Act 1981 (as amended)
S41: Section 41 of the NERC Act 2006
KBAP: Kirklees Biodiversity Action Plan
WYBAP: West Yorkshire Biodiversity Action Plan

The following bat roost records were received from WYES:

Table 2: Bat Roost Records Received from WYES.

Scientific Name	Common Name	Roost type	Date	Distance from Site (m)
Nyctalus leisleri	Leisler's bat	Unspecified	2006	1223

Pipistrellus pipistrellus	Common pipistrelle	Unspecified	2022	1718
Pipistrellus pipistrellus	Common pipistrelle	Unspecified	2007	1005
Pipistrellus pipistrellus	Common pipistrelle	Unspecified	2013	1268
Pipistrellus pipistrellus	Common pipistrelle	Unspecified	2013	1275
Pipistrellus pipistrellus	Common pipistrelle	Unspecified	2015	1275
Pipistrellus pipistrellus	Common pipistrelle	Unspecified	2017	1004
Vespertilionidae	Unidentified bat	Unspecified: 1 individual	2004	396
Vespertilionidae	Unidentified bat	Unspecified	2008	1598
Vespertilionidae	Unidentified bat	Unspecified: 6 individuals	2003	1330

3.1.2 119 field records of 4 confirmed species and 10 roost records of two confirmed species, within 2km of the site were returned by WYES. There is potentially suitable habitat on site to support commuting, foraging and roosting bats. The other neutral grassland, woodland, bramble scrub, scattered trees and line of trees on site have the potential to support commuting and foraging bats and

3.2 Automated Surveys

3.2.1 The following tables summarise the data obtained from the static detectors which were deployed at two locations across the site (Appendix 1). The data are presented as the number of passes recorded for each species per night.

3.2.2 <u>April</u>

Table 3: Number of passes recorded for each species per night at Location 1.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
20/04/2025	127	41	1
21/04/2025	84	30	-
22/04/2025	78	19	1
23/04/2025	158	-	-
24/04/2025	73	12	3
Total	**520**	**102**	**5**

Table 4: Number of passes recorded for each species per night at Location 2.

Date	Common pipistrelle	Soprano pipistrelle
20/04/2025	57	-
21/04/2025	33	-
22/04/2025	42	11
23/04/2025	56	-
24/04/2025	12	9
Total	**200**	**20**

Table 5: Number of passes recorded for each species at Location 3.

Date	Common pipistrelle	Soprano pipistrelle	Myotis sp.
20/04/2025	21	15	-
21/04/2025	242	20	2
22/04/2025	234	49	-
23/04/2025	67	12	-
24/04/2025	46	25	-
Total	**610**	**121**	**2**

3.2.3 May

Table 6: Number of passes recorded for each species per night at Location 1.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
21/05/2025	230	72	-
22/05/2025	162	40	-
23/05/2025	148	142	10
24/05/2025	208	52	-
25/05/2025	134	26	2
Total	**882**	**332**	**12**

Table 7: Number of passes recorded for each species per night at Location 2.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
21/05/2025	13	0	0
22/05/2025	22	5	0
23/05/2025	16	0	1
24/05/2025	9	1	1
25/05/2025	6	0	0
Total	**66**	**6**	**2**

Table 8: Number of passes recorded for each species at Location 3.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
21/05/2025	104	4	82
22/05/2025	32	10	-
23/05/2025	66	12	2
24/05/2025	10	6	-
25/05/2025	30	18	-
Total	**242**	**30**	**90**

3.2.4 June

Table 9: Number of passes recorded for each species per night at Location 1.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
12/06/2025	218	28	-
13/06/2025	126	22	10
14/06/2025	368	28	4
15/06/2025	208	26	-
16/06/2025	266	36	18
Total	**1186**	**140**	**32**

Table 10: Number of passes recorded for each species per night at Location 2.

Date	Common pipistrelle	Noctule
17/06/2022	27	2
18/06/2022	26	2
19/06/2022	14	0
20/06/2022	10	0
21/06/2022	17	0
Total	**94**	**4**

Table 11: Number of passes recorded for each species at Location 3.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
12/06/2025	146	22	4
13/06/2025	72	66	6
14/06/2025	22	12	2
15/06/2025	38	10	4
16/06/2025	374	22	12
Total	**652**	**132**	**28**

3.2.5 July

Table 12: Number of passes recorded for each species per night at Location 1.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
11/07/2025	32	18	12
12/07/2025	116	24	14
13/07/2025	80	46	10
14/07/2025	32	18	2
15/07/2025	94	42	6
Total	**354**	**148**	**44**

Table 13: Number of passes recorded for each species per night at Location 2.

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.
11/07/2025	12	2	0	0
12/07/2025	23	0	2	0
13/07/2025	27	2	4	0
14/07/2025	36	4	98	1
15/07/2025	72	2	3	1
Totals	**170**	**10**	**107**	**2**

Table 14: Number of passes recorded for each species at Location 3.

Date	Common pipistrelle	Soprano pipistrelle	Noctule	*Myotis* sp.
11/07/2025	41	22	12	-
12/07/2025	83	18	10	-
13/07/2025	67	32	10	1
14/07/2025	33	-	-	-
15/07/2025	49	-	1	-
Total	**273**	**72**	**33**	**1**

3.2.6 August

Table 15: Number of passes recorded for each species per night at Location 1.

Date	Common pipistrelle	Soprano pipistrelle	Noctule	*Myotis* sp.
15/08/2025	40	38	4	-
16/08/2025	34	26	16	-
17/08/2025	108	46	8	2
18/08/2025	20	40	18	2
19/08/2025	16	6	10	4
Total	**218**	**156**	**56**	**8**

Table 16: Number of passes recorded for each species at Location 2.

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.
15/08/2025	21	2	0	1
16/08/2025	12	0	0	0
17/08/2025	30	1	1	2
18/08/2025	14	5	4	5
19/08/2025	24	0	2	1
Total	**101**	**8**	**8**	**9**

Table 17: Number of passes recorded for each species at Location 3.

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.
15/08/2025	3	1	4	1
16/08/2025	19	5	4	6
17/08/2025	17	4	3	3
18/08/2025	30	3	4	4
19/08/2025	30	8	4	0
Totals	**99**	**21**	**19**	**14**

3.2.7 September

Table 18: Number of passes recorded for each species at Location 1.

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.
15/09/2022	3	0	0	2
16/09/2022	1	0	0	1
17/09/2022	9	0	0	5
18/09/2022	11	2	1	1
19/09/2022	16	1	0	3
Total	**40**	**3**	**1**	**12**

3.2.8 No data were obtained at Location 2 in September (see 2.3.3).

Table 19: Number of passes recorded for each species at Location 3.

Date	Common pipistrelle	Soprano pipistrelle	Noctule	Myotis sp.
17/09/22	13	1	0	1

18/09/22	10	0	0	1
19/09/22	8	0	3	0
20/09/22	11	0	1	1
21/09/22	29	1	1	0
Total	**71**	**2**	**5**	**3**

3.2.9 October

Table 20: Number of passes recorded for each species per night at Location 1.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
10/10/2025	-	-	1
11/10/2025	21	2	-
12/10/2025	3	2	-
13/10/2025	3	-	-
14/10/2025	-	-	-
Total	**27**	**4**	**1**

Table 21: Number of passes recorded for each species per night at Location 2.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
10/10/2025	-	-	1
11/10/2025	21	2	-
12/10/2025	3	2	-
13/10/2025	3	-	-
14/10/2025	-	-	-
Total	**27**	**4**	**1**

Table 22: Number of passes recorded for each species per night at Location 3.

Date	Common pipistrelle	Soprano pipistrelle	Noctule
10/10/2025	-	-	1
11/10/2025	21	2	-
12/10/2025	3	2	-
13/10/2025	3	-	-
14/10/2025	-	-	-
Total	**27**	**4**	**1**

4. Evaluation

4.1.1 The activity surveys have revealed a total of four species commuting and foraging across the site. The majority of these are common species: common and soprano pipistrelle; and noctule. Calls from bats of the rarer genus *Myotis* were also recorded but could not be identified to species level. Common pipistrelle was the most frequently recorded species.

4.1.2 The numbers of individual bats occurring across the site is not considered to be high and the populations of these species present within the majority of the site boundary are assessed as valuable at the local level.

4.1.3 The automated surveys showed that Location 1 and Location 3 are utilised by bats more frequently and consistently than Location 2. Given the linear nature of the habitat at Location 1 it is likely a valuable commuting resource for bats. The more closed canopy structure of the vegetation at Location 3 suggests this is more likely to be utilised for foraging in addition to commuting.

5. Impacts

5.1.1 In the absence of any mitigation measures, the proposed development would be anticipated to have an adverse impact at the Local level. The impact would be the result of loss and degradation of commuting and foraging habitat.

6. Recommendations

6.1.1 The design of the development is to incorporate a dark corridor along the entirety of the western and southern boundaries of the site. This will ensure the commuting habitat at the adjacent to the site is preserved in a favourable condition for bats.

6.1.2 Bat boxes are to be incorporated into those buildings on site where such provision would be in a suitable location. The advice of an experienced ecologist is to be sought regarding all aspects of bat mitigation and enhancement.

7. References

Bat Conservation Trust, (2007) Bats, Development & Planning in England. London.

Bats: surveys and mitigation for development projects, https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects Accessed 2018-06-21

Collins (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition*. Bat Conservation Trust, London

Guidance note 8: bats and artificial lighting in the UK, bats and the built environment series, Bat Conservation Trust and ILP, produced 2018, accessed November 2018. https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

Mitchell-Jones, A. and McLeish, A. (ed.). (2004) Bat Workers' Manual. 3rd ed. JNCC.

The Bat Worker's Manual, Anthony J. Mitchell-Jones, 2015

Appendices

Appendix 1: Static Detector Locations

Site name & address

Land off Highmoor Lane, Cleckheaton, West Yorkshire, BD19 6LW

Key

- Static Detector Locations
- Red Line Boundary

Scale 0 25 50 m

Site Land off Highmoor Lane	Client Thirteen Group
Project Bat Activity Survey	Author AWe
Plan ref 22182b	Revision 0

Appendix 2: Proposed Development Plan

N

DO NOT SCALE

All dimensions to be checked on site and Architect to be notified of any discrepancies prior to commencement

DESIGNERS RISK ASSESMENT

Construction (Design and Management) Regulations 2015

RESIDUAL RISKS

REF	DATE	DESCRIPTION

Kirklees - Highmoor Lane

(GIA)

Thirteen Group/Henry Boot

idp PARTNERSHIP NORTHERN

	ha	acres
GROSS SITE AREA	1.53	3.78
NET SITE AREA	1.17	2.90

HOUSE TYPE	BEDROOM	APPROVED DOCUMENT M COMPLIANCE	CONFIG	STOREYS	NO	MIX %	SQFT	SQM	TOTAL SQFT	TOTAL SQM
HT6	2B3P	CAT M4(2)	HOUSE	2	7	18	784.69	72.9	5493	510.30
HT9	3B5P	CAT M4(1)	HOUSE	2	6	15	1020.42	94.80	6123	568.80
HT10	3B5P	CAT M4(2)	HOUSE	2	1	3	1020.42	94.80	1020	94.80
HT11	3B5P	CAT M4(2)	HOUSE	2	8	20	1020.42	94.80	8163	758.40
HT12	3B5P	CAT M4(2)	HOUSE	2	4	10	1032.26	95.90	4129	383.60
HT24	4B6P	CAT M4(1)	HOUSE	2.5	8	20	1357.33	126.10	10859	1008.80
APT (G)	2B3P	CAT M4(2)	APARTMENT	1	3	8	659.83	61.30	1979	183.90
APT (1)	2B3P	CAT M4(1)	APARTMENT	1	3	8	731.95	68.00	2196	204.00
OVERALL TOTALS					40	100			39962	3713

OVERALL DENSITY	
UNITS / ha	34.19
UNITS / ACRE	13.79
SQ M / ha	3173
SQ FT / ACRE	13780

OVERALL MIX			TOTAL	%
2 BED			13	33
3 BED			19	48
4 BED			8	20
			40	100

OVERALL MIX APPROVED DOCUMENT M			TOTAL	%
CAT M4(1)			17	43
CAT M4(2)			23	58
CAT M4(3)			0	0
			40	100

TOTAL NO	40

NOTE: Nett area excludes all public open space and associated structural landscaping / buffer planting / halfroad

KEY:

Cricket Netting Within Development Site

0 2 5 10 25 metres

Scale 1:500 @ A2

REV	DATE	INITIAL	DESCRIPTION
P2	12.05.25	GP	Patio sizes altered following clien: instruction.

PROJECT / CLIENT: Highmoor Lane, Thirteen	PROJECT NO.: N81:3165	
DRAWING TITLE: Proposed Site Layout	DRAWING STATUS: PLANNING	
	DRAWING NO.: 1002	
PROJECT LEADER: GP	DRAWN BY: SQ	CHECKED BY: IDP
SCALE: 1:500 @ A2	DATE: 27/03/24	DRAWING REVISION: P2

idp Architecture Masterplanning Urban Design

IDPartnership Northern, St. Jude's, BarkerStreet, Shieldfield, Newcastle Upon Tyne, NE2 1AS. T: 0191 2 614442
E: info@idpartnership.com | W: idpartnership.com

Appendix 3: Bat Survey Calendar

Figure 1: Survey timings calendar (taken from BCT: Bat Surveys for Professional Ecologists: Good Practice Guidelines; 4th Edition).

Survey type	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Daytime Bat Walkover (DBW)												
PRA – structures[a]												
Emergence survey for maternity or summer roosts[b]												
Emergence survey for transitional/ occasional roosts[b]												
Re-entry surveys[c]												
Emergence survey for mating roosts[b]												
Hibernation survey – structures[a]												
GLTA[d]												
PRF inspection survey – trees												
Ground-level bat activity survey – night-time walkover surveys and automated/static												
Pre-, during and post-hibernation – automated/static bat activity survey												
Swarming survey[e]												
Back-tracking survey												
Trapping and radio-tagging survey[f]												

= optimal period = sub-optimal period

= weather or location dependent (i.e. may not be suitable due to spring and autumn conditions in any one year or in more northerly latitudes). Note that October emergence surveys are not acceptable in Scotland.

= it is not acceptable to trap bats when they are heavily pregnant and have dependent pups. Mothers need to optimise foraging due to the physiological demands of pregnancy and lactation, and pups need to be regularly fed. Interrupting these activities could potentially have an impact on breeding success in the year in question. The timing of birth can vary between years – it may be as early as the end of May or as late as the start of August, therefore caution should be exercised and local information gained on birth dates before trapping activities are carried out during the summer months. Any information gained and decisions made should be kept as a record.

Appendix 4: Glossary

Activity surveys - are used to assess the level of bat activity at a site. This can be done either by using equipment such as an AnaBat device, or manually walking around a site with a heterodyne detector, documenting the number of bat passes and interceptions.

Dawn surveys - begin around 2 hours before and up to sunrise when bats are returning to their roosts from foraging, and swarming behaviour can be seen close to roost entrances.

Dusk surveys - begin around 30 minutes before sunset and up to 2 hours afterwards. These are done in order to see bats emerging from their roost sites at night.

Echolocation – is a system similar to sonar that allows bats to travel and forage even in total darkness. Bats make a call and then listen to the returning echoes in order to build up a map of their surrounding area. This allows bats to gauge the identity and distance of an object by how long the echo takes to return to them.

Habitat - the ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism.

Hibernation - is a state of inactivity and metabolic depression characterized by lower body temperature, slower breathing, and lower metabolic rate. Hibernating animals conserve energy, especially during winter when food is short, tapping energy reserves, i.e. body fat, at a slow rate.

Hibernacula - typically consist of underground sites, such as caves and cellars, which remain relatively cold and humid. Bats will hibernate to conserve energy over the winter months when falling temperatures cause a drop in the abundance of insects. These will typically be colonised around November to around March.

Insectivorous – is when an organism feeds exclusively on insects.

Nocturnal - a behaviour characterized by being active during the night and sleeping during the day.

Maternity roosts – colonised around late May early June and consist of mature females and their young. These roosts need to be warm and quiet, and are used up until around August, with females typically leaving first and then the young.

Mating roosts – mating begins around late October to November. Males of most species use special mating calls to attract females. These can include purrs, clicks and buzzing.

Roost – a site where bats live during the day, rear young and hibernate. These can be in man made structures, such as buildings, bridges, tunnels, cellars and mines, or natural features such as mature trees and caves.

Roosts in buildings – many types of buildings will be used by bats. The most likely sites are agricultural buildings (e.g. farmhouses and barns), buildings with exposed wooden beams (greater than 20cm thick), buildings with weather boarding and/or hanging tiles, and buildings close to woodland and/or water.

Roosts in trees – these are typically in mature trees with deep sheltered cracks, under loose sections of bark, or in woodpecker holes.

Species – a group of organisms in which all members can interbreed and produce viable offspring.

Summer roosts (non-breeding) - these are generally occupied by groups of males and immature females during the summer, and are usually only occupied for a short period before the group moves to another location.

Swarming – a behaviour exhibited by bats returning to their roost sites at dawn. Bats can be seen repeatedly flying to and from the roost entrance, making it much easier for consultants to identify where roosts are on a building or structure.

Temporary/Transitory roosts – These are used after hibernation (March – April) before mature females disperse to maternity roosts and male/immature females colonise summer (non-breeding) roosts. Similarly, temporary roosts form before hibernation (August -October).

Underground Roosts – these are typically used during the winter and can be mines, caves, tunnels or cellars.

Appendix 5: Legislation Pertaining to the Protection of Bats

All bat species have, for some time, been protected under **Schedule 5: Animals which are Protected** and **Schedule 6: Animals which may not be Killed or Taken by Certain Methods** of the **Wildlife & Countryside Act 1981**. However, the effective protection for bats now comes from **Schedule 2 European Protected Species of Animals** of **The Conservation of Habitats and Species Regulations (CHSR) 2017**, which is retained in UK lay post-Brexit by **CHSR (Amendment) (EU Exit) 2019**. Changes to legislation, and devolution, mean the law is difficult to summarise succinctly across the UK, but the strong legal protection for bats and roosts remains.

It is an offence across the UK to:

- deliberately or recklessly capture, injure or kill a bat
- deliberately or recklessly disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, breed or rear young
- damage or destroy a bat roost (breeding site, resting place, or any place used for shelter or protection, this is an 'absolute' offence)
- disturb bats while occupying a bat roost
- intentionally or recklessly obstruct access to a bat roost
- impair their ability to survive, breed, reproduce, or to rear or nurture their young
- impair their ability to hibernate or migrate
- possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat, or publish or cause to be published any advertisements likely to be understood as conveying the buying or selling, or intention to buy or sell, any of those things.

'Deliberately' in this context may be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action will most likely have.

In this interpretation, a bat roost is "any structure or place which any wild [bat]...uses for shelter or protection". Because bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time.

For full legislative context, see:

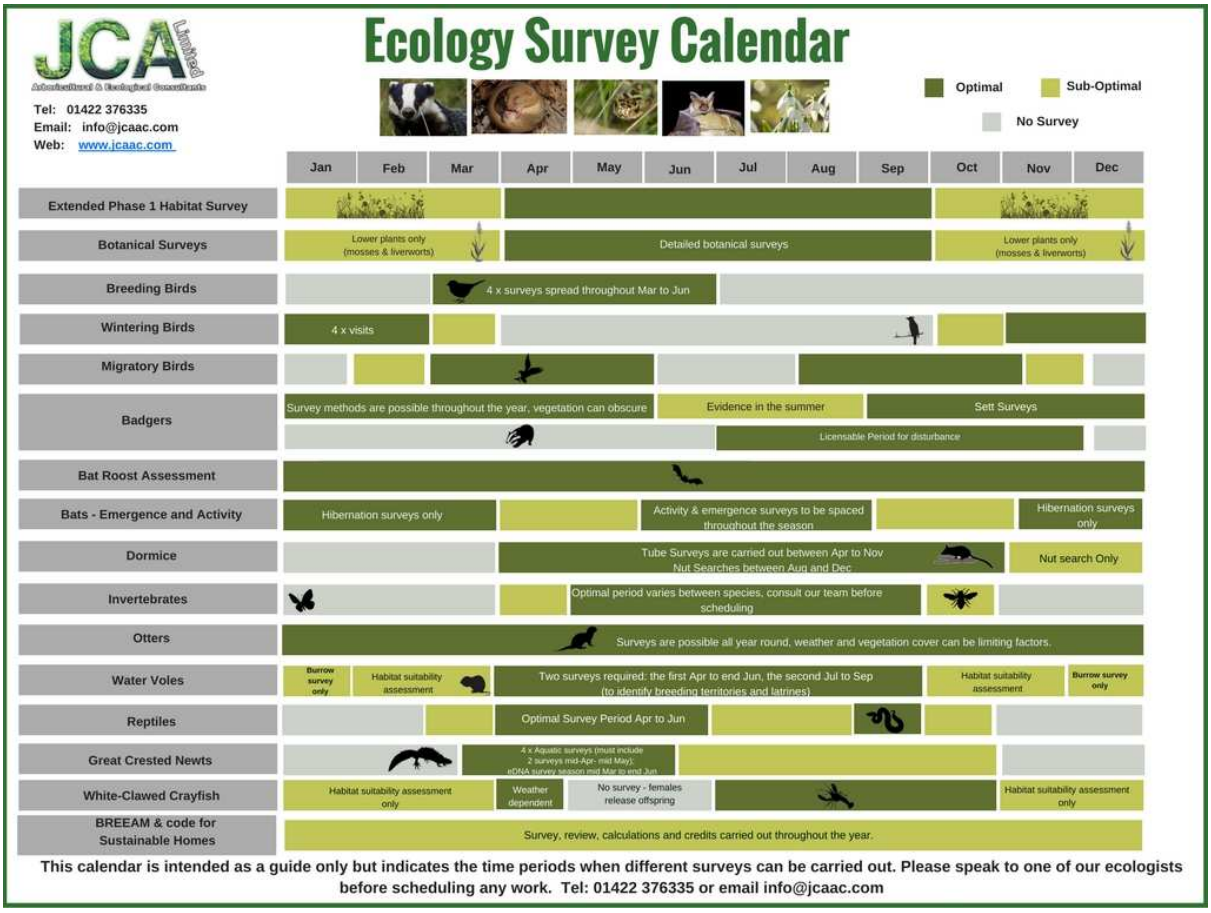
- CHSR 2017 Part 3: Protection of Species, Sections 42-45: Protection of Animals.
- WCA Part 1: Wildlife, Sections 9-12: Protection of other animals and prevention of poaching.

Additionally, the following species are listed as priority species under **Section 41** of the **Natural Environment and Rural Communities (NERC) Act 2006**, designating them as species of principal importance for the purpose of conserving biodiversity:

- Barbastelle bat *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Brown long-eared bat *Plecotus auritus*
- Greater horseshoe bat *Rhinolophus ferrumequinum*
- Lesser horseshoe bat *Rhinolophus hipposideros*

Appendix 6: Survey Calendar

Figure 2: Survey calendar for protected species and habitat surveys.



Appendix 7: Author Qualifications

Adam West, Principal Ecologist

BSc (Hons) Animal and Wildlife Management, ACIEEM.

Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Batchelor's degree in Animal and Wildlife Management, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence and a Natural England Level 2 bat survey class licence.

Alex Donovan, Assistant Ecologist

MBiol BSc (Hons) Biology (Industrial).

Alex joined JCA in 2023 after graduating from the University of Leeds with a First Class Honours Integrated Master's degree in Biology, including an industrial placement year working in the Uplands Research Department of the Game and Wildlife Conservation Trust. Alex is a CIEEM Qualifying Member, and a member of the BTO's Bird Ringing Scheme and Nest Record Scheme. Alex holds Natural England licences for barn owls (CL29) and great crested newts (level 1, CL08), and is working towards additional survey licences for bats and white-clawed crayfish.

The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and *bona fide* opinions.

Signed

.....

Adam West *BSc (Hons), ACIEEM*

04/12/2025

Reviewed by

.....

Alex Donovan *MBIOL BSc (Hons)*

04//12/2025

For and on behalf of ***JCA Ltd***

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ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

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