

## **Cromlet Hill Bat Survey**



**September 2021**

# Cromlet Hill Bat Survey

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## EXECUTIVE SUMMARY

Envirocentre was commissioned by Ian Duncan Architects to undertake a Preliminary Roost Assessment (PRA) and late-season bat activity survey of a derelict residential outbuilding proposed for re-development into a Pool House at Cromlet Hill Guest House.

The aim of the survey was to inform the redevelopment of the building, in regards to constraints pertaining to bats.

No field evidence of bats was identified during the PRA conducted on the 14<sup>th</sup> September 2021, ahead of the dusk activity survey. The building is largely intact and well-sealed, and therefore offers only limited opportunities for bat access. The small area of enclosed roof space is thick with spider's webs suggesting limited internal flight by bats and an open access hatch in the ceiling would cause thermal properties of the roof space to fluctuate, both of these features are considered suboptimal for roosting bats. Therefore, the building is assessed as providing **low potential** for roosting bats in reference to BCT guidance.

No features considered suitable for hibernation (i.e. wall cavities) were noted during the internal inspection and the construction of the building is unlikely to provide the constant cool temperatures and humid conditions required by hibernating bats, and is therefore considered to offer **negligible potential for hibernating bats**.

No bats were identified emerging from roosts within the building during the dusk activity survey. Frequent passes from common pipistrelle, soprano pipistrelle and brown long eared bats were observed and recorded commuting through and foraging within proximity to the building during the survey.

The surrounding habitats were assessed as offering moderate suitability for foraging and commuting bats, due to the mature mixed woodland and garden habitats on and surrounding the site. These habitats on site connect to surrounding pastureland, arable farmland and woodland habitats that dominate the wider landscape.

The following impacts (negative and positive) may occur as a result of the development of the outbuilding occurring between October 2021 and early April 2022:

- Disturbance of foraging, commuting and potential roosting resources as a result of enhanced artificial lighting post development.
- Roof space conditions can be maintained and improved post development for roosting bats as a result of use of traditional roofing materials, re-installing the roof hatch and the heated pool providing warmer summer roosting condition for bats in the locale.

No further survey is considered necessary at this point in time and **a European Protected Species (EPS) licence for bats is not required** from NatureScot to undertake proposed works. If works on site do not commence/ are not completed prior to May 2022, a survey to update the status of the building with regards to summer roosting bats is recommended.

Through applying mitigation (section 4.3) below, it is considered that the works will not affect the overall favourable conservation status of the local bat population. Enhancement opportunities are also detailed in section 4.4.

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# 1 INTRODUCTION

## 1.1 Terms of Reference

Envirocentre Ltd was commissioned by Ian Duncan Architects to undertake a Preliminary Roost Assessment (PRA) and late-season bat activity survey of a derelict steading and stables proposed for re-development into a Pool House at Cromlet Hill Guest House.

## 1.2 Scope of Report

The aim of the survey was to provide a baseline ecological evaluation of the building in relation to bats to inform the proposed re-development plans. The objectives were as follows:

- Conduct a desk study to gather pre-existing biological data relating to the presence of bats in the locale;
- Identify Potential Roost Features (PRFs) within the building which could be utilised by bats and assess their suitability to host roosting bats;
- Identify any field evidence of bats within the building;
- Identify any bat roosts via a dusk emergence survey of the building;
- Identify the potential impacts to bats as a result of proposed redevelopment;
- Make recommendations for any further survey and/or species licensing requirements;
- Identify any mitigation measures to avoid, minimise and compensate for the predicted negative ecological effects associated with the proposed redevelopment; and
- Identify the opportunities offered by the proposed redevelopment to deliver ecological enhancements.

## 1.3 Site Description

The building is situated to the north of the Cromlet Hill Guest House, South Road in Oldmeldrum, centred at NJ 81087 27087, 124m above sea level.

The building consists of a rendered stone two storey outhouse with a slate roof and a dormer window on the north of the west aspect, with a wooden and Perspex lean-to to the north. The surrounding garden is made up of a managed lawn, mature mixed woodland and a beech hedgerow.

## 1.4 Project Description

The proposed redevelopment is for the installation of a swimming pool and skylights in the roof. The original roof space and materials will be retained/replaced, but the dormer on north west aspect will be removed.

## 1.5 Legislation

Bats are a European Protected Species (EPS) listed in the EC Directive (92/43) The Conservation of Natural Habitats and of Wild Flora and Fauna (the "Habitats Directive"), which is transposed into Scottish law through the Conservation (Natural Habitats &c.) Regulations 1994 (the "Habitat Regulations") as amended. Under this legislation it is an offence to deliberately or recklessly:

- capture, injure or kill such an animal;

- harass an animal or group of animals;
- disturb an animal while it is occupying a structure or place used for shelter or protection;
- disturb an animal while it is rearing or otherwise caring for its young;
- obstruct access to a breeding site or resting place, or otherwise deny an animal use of a breeding site or resting place;
- disturb an animal in a manner or in circumstances likely to significantly affect the local distribution or abundance of the species;
- disturb an animal in a manner or in circumstances likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;
- disturb an animal while it is migrating or hibernating; and - possess, control, transport, sell or exchange specimens of any animal listed on Annex IV of the Habitats Directive. This applies to living or dead specimens and to their derivatives.

It is an offence of strict liability to damage or destroy a breeding site or resting place of such an animal. These sites and places are protected even when the animal isn't present.

A licence may be issued to permit the otherwise unlawful activities listed above if these three tests are satisfied:

- There must be a licensable purpose which includes 'preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;'
- There is 'no satisfactory alternative'; and
- The derogation (i.e. any permission/licence granted) is 'not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range'

## 1.6 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre.

If this report is to be submitted for regulatory approval more than 12 months following the report date, it is recommended that it is referred to EnviroCentre for review to ensure that any relevant changes in data, best practice, guidance or legislation in the intervening period are integrated into an updated version of the report.

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## 2 METHODS

### 2.1 Desk Study

A desk study for the presence of bat records, statutory and non-statutory designated sites and ancient woodland in proximity to the site was carried out using the following sources:

- NatureScot Sitelink<sup>1</sup> for information on statutory and non-statutory designated sites within 5km of the site;
- Aberdeenshire Council Local Development Plan (2017)<sup>23</sup> for non-statutory designated sites within 5km of the site;
- Scotland's Environment Map<sup>4</sup> website to locate and identify ancient woodland within 2 km of the site;
- The North East Scotland Biological Records Centre (NESBReC)<sup>5</sup> for records of bat species within a 2km radius of the site.
- NBN Atlas<sup>6</sup> for bat records within 2.5km of the site which are licenced for commercial use; and
- Scottish Biodiversity List (SBL<sup>7</sup>) for priority species potentially relevant to the site.

### 2.2 Preliminary Roost Assessment

A Preliminary Roost Assessment (PRA) was undertaken by Gemma Nixon (Bat licence No. 188623), who is a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and Scott Fraser, on the 14<sup>th</sup> September 2021, based on the methods detailed within the Bat Conservation Trust (BCT) survey guidelines<sup>8</sup>.

An internal and external inspection of the building was undertaken to search for field signs of bats and locate any PRFs. Table 2-1 lists the common indicators used to determine the actual or potential presence of roosting bats.

Habitat connectivity to the wider landscape was also considered during the assessments, via a review of aerial imagery and site observations. The suitability of the building to host roosting bats as well as commuting and foraging habitats on site were classified as outline within Table 2-2.

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<sup>1</sup> <https://sitelink.nature.scot/map> (Accessed September 2021).

<sup>2</sup> <https://www.aberdeenshire.gov.uk/media/20616/local-development-plan-2017-part-1.pdf> (Accessed September 2021).

<sup>3</sup> <https://www.aberdeenshire.gov.uk/media/20619/local-development-plan-2017-part-2.pdf> (Accessed September 2021).

<sup>4</sup> <https://map.environment.gov.scot/sewebmap/> (Accessed September 2021).

<sup>5</sup> <http://www.nesbrec.org.uk/> (Records received 20/9/2021)

<sup>6</sup> NBN Atlas occurrence download at [NBN Atlas](https://www.nbnatlas.org/) accessed on Tue Sep 21 07:27:08 UTC 2021.

<sup>7</sup> SBL available at:

<https://www.webarchive.org.uk/wayback/archive/20150218221128/http://www.gov.scot/Topics/Environment/Wildlife-Habitats/16118/Biodiversitylist/SBL> (Accessed September 2021).

<sup>8</sup> Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition, Bat Conservation Trust. (Accessed September 2021).

**Table 2-1: Active Bat Roost Indicators and Suitable Roosting features in Buildings**

Signs indicating possible use by bats	Access points in structures frequently used as bat roosts	Frequently used roosting locations in structures
Live bats, corpses or skeletons.	Gaps in windowsills and window panes	Top of chimney breasts, gable ends and dividing walls
Droppings and the relative freshness, shape and size of droppings.	Underneath peeling paintwork or lifted rendering	All beams and roof beams (ridge, hip etc.)
Feeding remains, amount and type of prey.	Behind hanging tiles, weatherboarding, eaves, soffit boxes, fascias and lead flashing	Junction of timber joints, mortise and tenon joints
Staining from urine or grease marks around crevices and holes.	Under tiles and slates	Behind purlins
Distinctive smell of bats.	Gaps in brickwork and stonework	Between tiles/slates and the roof lining
	Gaps in rendering behind gutters	Under flat roof materials

**Table 2-2: Suitability Classification of Roosting, Commuting and Foraging Habitats for Bats**

Suitability	Roosting Features	Foraging and Commuting Habitats
<b>High</b>	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edges.
		High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.
		The site is close to and connected to known roosts.
<b>Moderate</b>	A structure with one or more potential roost sites that could be used by bats due their size, shelter, protection, conditions and/or surrounding habitat but unlikely to support a roost of high conservation status.	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.
		Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
<b>Low</b>	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated.
		Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or a patch of scrub.
<b>Negligible</b>	A structure with negligible features likely to be used by roosting bats.	Negligible habitat features likely to be used by foraging or commuting bats.

## **2.3 Bat Activity Survey**

Emergence surveys aim to establish roost presence or absence and characterise any roosts found within, or adjacent to the site. Foraging and commuting routes in the surrounding landscape are also noted. The resulting data is used to inform the requirement for, and design of, mitigation and/or compensation, in line with current wildlife legislation. The survey effort (i.e. number of survey visits) is scoped from the suitability of the structures to host roosting bats, as determined by the Preliminary Roost Assessment (PRA) results.

Frequency division bat detectors (Bat Box Duet) coupled with audio recorders and time expansion detectors (Echo Meter Touch (EMT) and Anabat Swift) were used to gather digital sound files of bat activity during the survey. Observations of bat activity were noted with species, time identified, location and behaviour all recorded.

Accurate numbers of bats can be difficult to identify during flight, therefore bat passes are used as a proxy measurement for activity levels. A bat pass comprises one sound file triggered by a bat call being detected by the EMT or Anabat Swift. Post survey analysis was conducted to confirm species identification and any observed species that were not possible to identify at the time of survey.

A dusk emergence survey was conducted on the outbuilding on the 14th September 2021. During the activity survey, surveyors were positioned at vantage points to gain visual and audible coverage of all PRFs. One covered the north and east aspects (Photo 1), the other covered the south and west aspects (Photo 2) where they also deployed the EMT & Anabat.

The survey began at 19:15, 15 minutes prior to sunset and continued until 23:35, until surveyors were satisfied enough time had elapsed to record any late-emerging bats within the survey results. The survey took place on a dry, clear (cloud cover 40%), and calm night with temperatures 14°C at the start of the survey, falling to 13°C at the end of the survey and with a light easterly breeze throughout.

## **2.4 Survey Constraints**

### **2.4.1 Desk Study**

Desk studies are limited by the reliability of third-party information and the geographical availability of biological and/or ecological records and data. This emphasises the need to collate up-to-date, site-specific data based on field surveys by experienced surveyors. The absence of a species from biological records cannot be taken to represent actual absence. Species distribution patterns should be interpreted with caution as they may reflect survey/reporting effort rather than actual distribution.

### **2.4.2 Field Survey**

The survey was commissioned outside of the main bat surveying season (considered May to August inclusive) therefore data on early or maternity roosting bats could not be collated. However, a thorough inspection to search for field evidence and PRFs did not indicate that the building supports such a colony.

## 3 RESULTS

### 3.1 Desk Study

#### 3.1.1 Statutory Designated Sites

No statutory designated sites relevant to bats are present within or directly adjacent to the site.

Red Moss, Oldtown<sup>9</sup>, a basin fen containing bottle sedge (*Carex rostrata*), sphagnum mosses and hydrologic features, is designated a SSSI and is relevant to bats, as its features will attract insects for bats to forage. Red Moss is located 5km to the north west of the site and is connected through woodland, pastureland and arable farmland.

#### 3.1.2 Non-Statutory Designated Sites

No non statutory designated sites relevant to bats are present within or bordering the boundary. Two sites relevant to bats are present within a 5km radius of the site boundary, as detailed in Table 3-2.

**Table 3-1: Non-Statutory Designated Sites**

Site Name	Designation <sup>1011</sup>	Distance and Orientation
Burreldale Moss	Local Nature Conservation Site	3.4km SE
Sunnybrae Moss	Local Nature Conservation Site	4km SW

Burreldale Moss contains a variety of wet habitats including fen, bog and rush pasture, with woodland, dry heath and acid grassland surrounding the margins, this provides potential feeding and commuting resources for bats and is connected to the site via woodland, pastureland and arable farmland.

Sunnybrae Moss is a small area of fen and grassland habitats that helps connect these habitats throughout the local area and are important for small pearl bordered fritillary butterfly (*Boloria selene*). This provides potential foraging resource for bats and is connected to the site via woodland, pastureland and arable farmland.

#### 3.1.3 Ancient Woodland

No ancient woodland is located within or directly bordering the site boundary. Six long established plantations lie within a 2.5km radius of the boundary as detailed in Table 3-3.

**Table 3-2: Ancient Woodland**

Site Name	Designation	Distance & Orientation
Foredalehouse wood	Long established plantation	1km SE
Unnamed woodland	Long established plantation	2.25km SE
Unnamed woodland	Long established plantation	2.4km SW
Unnamed woodland	Long established plantation	1km NE
Unnamed woodland	Long established plantation	1.25km N
Unnamed woodland	Long established Plantation	2km NW

<sup>9</sup> <https://sitelink.nature.scot/site/1343>

<sup>10</sup> [https://www.aberdeenshire.gov.uk/dpmedia/5e\\_Landward\\_sites\\_Part2.pdf](https://www.aberdeenshire.gov.uk/dpmedia/5e_Landward_sites_Part2.pdf)

<sup>11</sup> [https://www.aberdeenshire.gov.uk/dpmedia/5f\\_Landward\\_sites\\_Part3.pdf](https://www.aberdeenshire.gov.uk/dpmedia/5f_Landward_sites_Part3.pdf)

Foredalehouse wood is directly linked to the site through a corridor of trees and garden features running alongside Mill Road and the A920, which provides foraging, commuting and potential roosting resources through the green and dark infrastructure the treeline provides.

The other areas of woodland are connected to the site via the pasture and arable farmland that dominates the wider landscape and sections of isolated treeline.

### **3.1.4 NBN Biological Records**

One soprano pipistrelle (*Pipistrellus Pygmaeus*) was recorded <1km to the north of the building in the summer of 2015.

### **3.1.5 NESBReC Records**

One common pipistrelle (*Pipistrellus pipistrellus*) and one brown long-eared bat (*Plecotus auritus*) were recorded 1.2km to the north east of the site in the summer of 2012.

## **3.2 Preliminary Roost Assessment**

### **3.2.1 Building Assessment**

No field evidence of roosting bats, such as droppings or staining, was identified during the internal and external inspection of the outbuilding.

#### Internal

Internally, the building presents a deteriorating plasterboard and wood panelled surround (Photo 3), with a fireplace present on both floors of the north aspect (Photo 4). There is a small heavily cobwebbed loft space extending the full length of the building (Photo 5). There were no obvious signs of daylight gaps in the roofing or at the wall heads. A former stable is present at the south of the building (Photo 6).

#### External

The rendered exterior walls were largely intact and well-sealed, with water staining from drainage failure around the building's exterior (Photo 7). The wooden door and window frames were also intact and well-sealed (Photo 8 & 9). There were no noted gaps between the roof and the wall at the guttering.

Some gaps were noted under and around the roof slates and ridge tiles (Photo 10), which are considered to present a roosting feature for opportunistic individual bats.

## **3.3 Activity Survey**

### Dusk Activity Survey, 17<sup>th</sup> September 2021

No bats were identified emerging from the outbuilding.

Bat activity was present around the building with five pipistrelle bats and two common pipistrelles identified commuting east and south throughout the survey, and two Brown Long Eared bats were

identified, one foraging around the courtyard 45 minutes after sunset and the other commuting from the south to the east 1 hour after sunset.

The Anabat (using auto id software) recorded nine common pipistrelle, five soprano pipistrelle and one Brown Long eared passes, over the course of the survey.

### **3.4 Assessment**

The loose slates and ridge tiles would be suitable for crevice dwelling bats such as common and soprano pipistrelle bats, known to be present in the locale and would most likely be utilised as a day roost by male or non-breeding females.

The former stables and loft space structure have potential to host bats that require a void space (such as brown long eared bats), that are known to be present in the locale. However, the roof space is thick with spider's webs suggesting no internal flight by roosting bats and an open access hatch to the loft and the damaged wedged open door to the stables would cause thermal properties of the void space to fluctuate, all of these features are considered suboptimal for roosting bats.

The building was assessed as low in reference to Table 2-2: *A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis.*

No features considered suitable for hibernation (i.e. wall cavities) were noted during the internal inspection and the construction of the building is unlikely to provide the constant cool temperatures and humid conditions required by hibernating bats, and is therefore considered to offer negligible potential for hibernating bats.

The mature garden habitat surrounding the building was assessed as moderate in reference to Table 2-1: *Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.*

## **4 POTENTIAL IMPACTS, FURTHER SURVEY AND MITIGATION**

### **4.1 Further Survey and Licensing**

No further survey is considered necessary at this point in time and a European Protected Species (EPS) licence for bats is not required from NatureScot to undertake proposed works.

If works on site do not commence/ are not completed prior to May 2022, a survey to update the status of the building with regards to summer roosting bats is recommended.

### **4.2 Potential Impacts**

The following impacts (negative and positive) may occur depending on the timing and duration of the development at the outbuilding:

- Disturbance of foraging, commuting and potential roosting resources as a result of enhanced artificial lighting post development.
- Roof space conditions can be maintained and improved post development for roosting bats as a result of use of traditional roofing materials, re-installing the roof hatch and the heated pool providing warmer summer roosting condition for bats in the locale.

Through applying mitigation (section 4.3) below, it is considered that the works will not affect the overall favourable conservation status of the local bat population.

### **4.3 Mitigation**

The following mitigation should be applied to the project during works to ensure any potential impacts to bats are reduced:

- It is advised that contractors are made aware of the possible presence of bats prior to works commencing.
- It is recommended that the redevelopment commences between October and March, outside the bat activity season, to reduce risk of opportunistic bats being present.
- Temporary lighting used during construction, and permanent exterior lighting positioned upon or around the finished development, should not illuminate the trees within the site or any adjacent tree lines which are favoured by bats present in the locale for commuting and foraging resources.
- Noise and vibration caused through the use of machinery, or by the movement of construction traffic, should be kept to a minimum at times when bats are active i.e. between sunset and sunrise during the bat activity season (April to September).
- In the event that a bat roost is unexpectedly discovered within the buildings, all work in that area must stop immediately and an appropriately qualified ecologist contacted for advice.
- Bituminous felt roofing membrane that does not contain polypropylene filaments which are known to entangle bats should be used if roofing works proceed.
- A small gap under flashing at the top of south apex should be recreated/ installed to provide roosting access for bats.
- Loft space should be maintained to provide potential void space for brown long eared bats.

## 4.4 Enhancement Opportunities

The following enhancement opportunities have been provided:

- Bat friendly external lighting may be installed in order to reduce any impact to commuting and foraging bats in the wider landscape. Further details can be found here: [http://www.bats.org.uk/pages/bats\\_and\\_lighting.html](http://www.bats.org.uk/pages/bats_and_lighting.html) .
- Artificial bat roosts can be easily integrated into or affixed externally onto the building. Suggested artificial bat roosts include 1FR or 2FR Schwegler Bat Tube<sup>12</sup><sup>13</sup>, Habibat Bat Boxes<sup>14</sup> and Habibat Bat Access Slate<sup>15</sup>. All bat boxes and tiles must be integrated and located in line with manufacturer guidelines.

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<sup>12</sup> <https://www.nhbs.com/1fr-schwegler-bat-tube>

<sup>13</sup> <https://www.nhbs.com/2fr-schwegler-bat-tube>

<sup>14</sup> <http://www.habibat.co.uk/category/bat-boxes>

<sup>15</sup> <https://www.nhbs.com/habibat-bat-access-slate>

# APPENDICES

# A SITE LOCATION



Imagery Source: Bing Maps. Image courtesy of Ordnance Survey © 2021 TomTom

**Legend**

- ▬ Site Boundary
- ▬ Building Boundary

Do not scale this map

**Client**  
Ian Duncan Architects

**Project**  
Cromlet Hill Bat Survey and PRA

**Title**  
Site and Building Location

**Status**  
Final

<b>Drawing</b> 375412-001	<b>Revision</b> -	<b>Date</b> 17 September
<b>Drawn</b> SF	<b>Checked</b> DB	<b>Approved</b> DB

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# **B      PHOTOGRAPHS**



**Photo 1: North east viewpoints**



**Photo 2: South west aspect**



**Photo 3: Building interior**



**Photo 4: Fireplace**



**Photo 5: Loft space**



**Photo 6: Former stables**



**Photo 7: Water staining**



**Photo 8: Dormer window frame**



**Photo 9: Door frame**



**Photo 10: Gaps in slate roof**

## C SURVEY RESULTS

<b>Dusk Survey: 14th September 2021</b>		
Sunset:	19:30	
Survey Start Time:	19:15	
Survey End Time:	20:45	
Weather Conditions: Cool, dry, light easterly breeze 40% cloud cover. Temperatures 14oC at start and 13oC at end.		
<b>Time</b>	<b>Species</b>	<b>Surveyor Vantage Point: 1</b>
19:47	2X pipistrelles	1X commuting south west to east 1X commuting north west to south
20:04	Pipistrelle	Call
20:07	Pipistrelle	Commuting north from west
20:14	Brown Long Eared	Foraging in courtyard
20:17	Common pipistrelle	Commuting from north west
20:18	Common pipistrelle	Commuting from north west
20:29	Brown Long Eared	Commuting from south to east
20:31	Pipistrelle	Call