



**Ty Fry Farm,
Loughor, Swansea**

**Bat Transect and Static Detector
Survey Report**

December 2020

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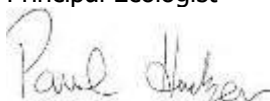
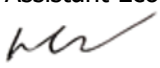
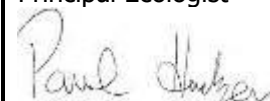
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Document Control Table

Ty Fry, Swansea Bat Transect and Static Detector Survey Report				
Revision	Date	Prepared by	Checked by	Verified by
1.0	02 December 2020	Paul Hudson MCIIEEM Principal Ecologist 	Harri Williams Assistant Ecologist 	Paul Hudson MCIIEEM Principal Ecologist 

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Summary

Site Location	Acer Ecology Ltd were commissioned by Barratt & David Wilson Homes, South Wales to conduct a bat transect and static detector survey of land on Ty Fry farm, Loughor, Swansea, SA4 6SR, within the boundary of Swansea City and County Council (Ordnance Survey Grid Reference centred at: SS 5771 9791).
Survey Methodology: Bats	Bat activity surveys comprised two elements: <ul style="list-style-type: none">• Two transect surveys (one in summer and one in the autumn); and• A total of 10 days of static monitoring, five days in the summer and five days in the autumn.
Bat Survey Results	Activity levels were low throughout the surveys. Eight bat species were recorded during the static detector surveys, including soprano pipistrelle, barbastelle noctule, brown long-eared and lesser horseshoe, all of which are listed on Part 1, Section 7 of the Environment (Wales) Act 2016 as ' <i>living organisms of principal importance for maintaining and enhancing biodiversity in relation to Wales</i> '. Barbastelle, lesser horseshoe (30,900 individuals within Wales) and serotine (18,700 individuals within Wales) are relatively uncommon, within Wales. Barbastelle is listed as a near threatened species.
Further Surveys	A further transect and static detector survey should be undertaken in spring 2021.
Required Actions	No additional recommendations are made beyond those made in the Acer Ecology Preliminary Ecological Appraisal (Acer Ecology, 2020) or the Landscape and Ecological Management Plan (Acer Ecology, 2020).

1. Introduction

1.1. Brief

Acer Ecology Ltd were commissioned by Barratt & David Wilson Homes South Wales to conduct summer and autumn bat activity transect and static detector surveys of land at Ty Fry Farm, Loughor, Swansea, SA4 6SR within the boundary of Swansea City and County Council (Ordnance Survey Grid Reference: SS 5771 9791).

1.2. Site Description

The 0.87 ha site proposed for development lies at the southern edge of the village of Loughor. The site comprises a single agricultural field that is enclosed by mature hedgerows, trees and dense scrub. To the north of the site contains the construction site compound that has already been cleared for the wider residential development (consisting of hard standing, bare ground and container units). To the north and east of the site lies the village of Loughor, with the immediate south and west boundaries comprising a mosaic of pastoral fields and mature hedgerows. The site lies approximately 0.5km north-east of the Loughor estuary and the wider landscape comprises large urban areas to the north and intertidal areas to the south.

1.3. Proposed Works

The proposed development site forms the eastern corner of a wider residential development of 92 units (LPA ref: 2013/0617 (outline); 2018/1537/RES (RM), which secured consent in 2018 and is under construction at the time of writing. The scheme forms part of a wider residential allocation of 130 units under the adopted Swansea Council LDP (LDP Ref: H1/32).

The development itself comprises the construction of 23 residential units, with associated gardens, driveways, and general infrastructure. Several small amenity spaces are incorporated into design.

1.4. Legislation

1.4.1. Bats

All UK species of bat are designated as 'European Protected Species'. Their breeding sites or resting places¹ (roosts) are fully protected under the Wildlife and Countryside Act 1981² (as amended) and the Conservation of Habitats and Species and Planning (various amendments) (England and Wales) Regulations 2018³, until and unless superseded by The Conservation of Habitats and Species (Amendment) (EU Exit) [CHSAEU] Regulations 2019.

¹ Resting places are defined as 'areas that are essential to sustain an animal or group of animals when they are not active' (Anon 2007).

² <https://www.legislation.gov.uk/ukpga/1981/69>

³ <http://www.legislation.gov.uk/ukxi/2018/1307/contents/made>

Works affecting bats are subject to licensing procedures by Natural Resources Wales (NRW).

1.5. Scope of the Study

The survey comprised the following:

- Two transect surveys (one in the summer and one in the autumn); and
- Two sessions of passive static bat detector recording.

1.6. Reporting

This report aims to:

- Outline the methodology used during the survey;
- Identify what bat species (if any) are using the site and identify any commuting routes and key foraging areas used by them;
- Provide an interpretation of the findings, in relation to the potential impacts of the development;
- Specify the legal and policy constraints which may affect the development; and
- Provide an indication of potential licensing requirements and mitigation, compensation and enhancement measures that may be required.

2. Methods

2.1. Field Study

2.1.1. Bat Activity Transect and Static Detector Survey

Two separate bat activity transect surveys were undertaken: on 27th August 2020 by Rory Jones MCIEEM⁴, and on the 31st October 2020 by Paul Hudson MCIEEM⁵.

The surveys commenced at sunset and continued until 120 minutes after sunset. In accordance with best practice guidance, the transect surveys were undertaken during nights with a minimum sunset temperature above 10°C.

The transects were walked at a slow pace along a set route as shown on Plans 1 and 2. Five-minute sample periods were undertaken at monitoring points and all bat species encountered were recorded. General bat activity was recorded whilst walking between each monitoring point.

In addition, two Anabat Express static detectors were deployed in the locations shown on Plan 3. The detectors were set to record for a minimum period of 5 nights from 27th August until 1st September and from 26th October to 31st October. Bat activity between dusk and dawn was recorded. Analysis of the bat survey data was made using the Analook analysis software to determine the number of bat passes recorded⁶. The detectors were positioned in the hedgerow and scrub habitats of the site, where it was anticipated that bat activity would be concentrated.

Two static detectors were deployed on both occasions, although one of the detectors was stolen and removed from site during the second survey.

2.1.2. Data Analysis

The sound files recorded by the static detectors were analysed using Analook call analysis software and were identified to species (or to genus in the case of the *Myotis* spp.) level. The number of bat passes of each species was recorded and plotted to display the mean number of bat passes per species per night for each survey period.

The sound files recorded during the transect survey were analysed using the BatExplorer call analysis software, which can be used in conjunction with field survey notes and GIS software to produce species maps for the survey area.

⁴ Rory is employed as an ecologist with Acer Ecology and is an experienced and licensed bat worker holding both Welsh (Natural Resources Wales Licence Number: S086186/2) and English (Natural England Licence Number: 2015-16057-CLS-CLS) licenses. He graduated with a BSc. in Environmental Geoscience from Cardiff University and has eight years postgraduate experience in the environment sector. He has undertaken extensive training in protected species assessment and has undertaken numerous building inspections, dusk emergence and dawn re-entry survey. Further details of his qualifications and experience can be found at <http://bit.ly/2qI5Db1s>.

⁵ Paul graduated with a degree in Environmental Biology from Reading University and a Postgraduate Diploma in Conservation Management from the University of East Anglia. He has worked within ecological consultancy since 2000 and has been involved in bat work since 2001. He holds licences to disturb bats in both Wales (S088190/1 valid until June 2022) and England (2018-36707-CLS-CLS valid until 2028). Further details of his qualifications and experience can be found at <http://linkd.in/19aGTf4>.

⁶ A bat pass is defined as a single sound file containing a species' echolocation call. Where multiple species are recorded on the sound file, the calls by each species was tallied.

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General Temporal Constraints

An ecological survey can only identify what was present on site at the time it was conducted. However, habitat usage by species can change over time.

Removal of Bat Detector

One of the bat detectors was removed/stolen from the site on the second survey and consequently data from this detector was not available. Given the size of the site, it is considered that adequate data was obtained from the single static detector present.

3. Results

3.1. Bat Activity Transect Surveys

Table 1: Summary of Bat Activity Transects

Date	Sunset/ Start Time	End Time	Wind ⁷	Air Temp. (°C)	Cloud cover (%)	Rain
28 th August 2020	20:12	22:12	1	16	2/8	0
Low levels of bat activity comprising common pipistrelle (7 passes), noctule (3 passes), soprano pipistrelle (2 passes) and an unidentified Myotis species (1 pass).						
31 st October 2020	16:49	18:49	2	12	8/8	0
Low levels of bat activity comprising common pipistrelle (7 passes), soprano pipistrelle (1 pass) and noctule (3 passes).						

Plans 1 and 2 show the results of the bat activity transects.

3.2. Static Detector Survey

A summary of the results of the static detector surveys is provided in the tables and graphs below and overleaf.

Table 2: Static Detector Survey Dates

Survey period	Start Date	End Date	Total Nights
Summer	28/8/2020	2/9/2020	5
Autumn	26/10/2020	31/10/2020	5

Table 3: Total Number of Bat Passes for Each Species in August-September 2020

Species	Total Number of Bat Passes (August-September 2020)										Totals	Average Number of Calls Per Night/Per Detector
	Detector 1					Detector 2						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 1	Day 2	Day 3	Day 4	Day 5		
Common pipistrelle	19	26	19	29	44	18	27	20	28	54	282	28.4
Soprano pipistrelle		4	1	4	7	5	3	1	4	8	37	3.7
<i>Myotis</i> spp.			2		1	1				1	5	0.5
Brown long-eared	1	1	5	11	2			1	3	2	26	2.6
Lesser horseshoe				1					2		3	0.3
Noctule	5			1			3				9	0.9

⁷ Estimated on site using the Beaufort scale.

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Serotine								4		4	0.4
Barbastelle	1		1		1			1		4	0.4

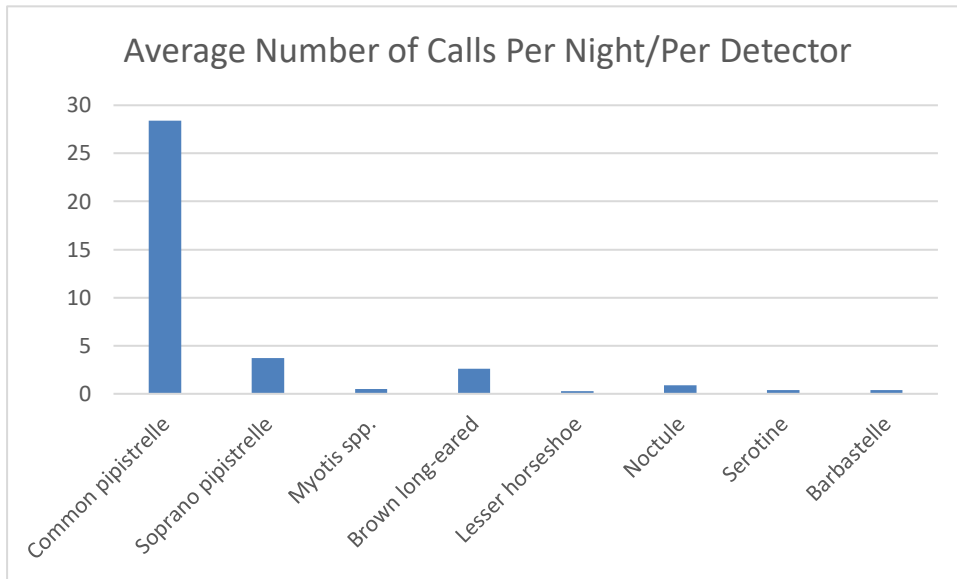
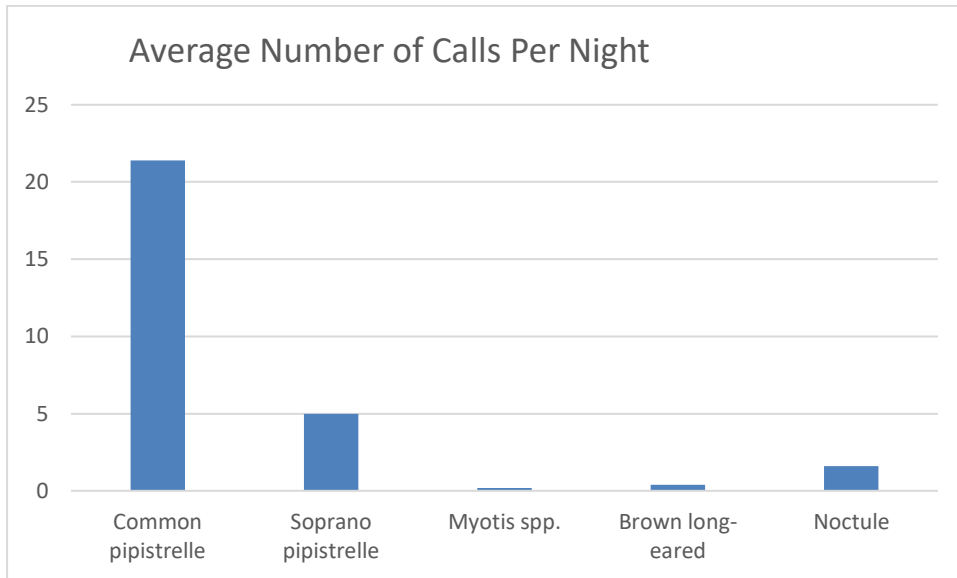


Table 4: Total Number of Bat Passes for Each Species in October 2020

Species	Total Number of Bat Passes (October 2020)						Average Number of Calls Per Night/Per Detector
	Detector 1						
	Day 1	Day 2	Day 3	Day 4	Day 5	Totals	
Common pipistrelle	30	12	8	15	42	107	21.4
Soprano pipistrelle	7		2	7	9	25	5
<i>Myotis</i> spp.		1				1	0.2
Brown long-eared			2			2	0.4
Noctule	1	2	2		3	8	1.6

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4. Evaluation

The site is collectively considered to provide moderate quality foraging habitat for bats. The rank semi-improved grassland and mature hedgerows with trees around the perimeter provide high quality foraging and commuting features in their own regard. Furthermore, these features are ecologically connected to the wider landscape to the south. However, the value of the site is limited by the fact that the northern half comprises a construction site, with a reasonably high degree of artificial lighting at night, and hard standing habitats that offer very little value for bats.

However, the results of the summer and autumn activity transects and static detector surveys have demonstrated a low level of use across the site. Indeed, several key observations were made during the transect surveys: bat activity was consistently low throughout all of the transect surveys; bat activity was greatest around the eastern and southern perimeters of the site; common pipistrelles were by far the most frequently recorded species; most recordings comprised multiple observations of the same low number of individuals, repeatedly foraging; and light sensitive species such as brown long-eared and lesser horseshoe bats occurred relatively infrequently.

Despite the low levels of activity, eight species listed on Part 1, Section 7 of the Environment (Wales) Act 2016 as '*living organisms of principal importance for maintaining and enhancing biodiversity in relation to Wales*' were recorded on site: soprano pipistrelle (*Pipistrellus pygmaeus*); barbastelle (*Barbastella barbastellus*); noctule; brown long-eared (*Plecotus auritus*); and lesser horseshoe (*Rhinolophus hipposideros*).

Barbastelle, lesser horseshoe (30,900 individuals within Wales) and serotine (*Eptesicus serotinus*) (18,700 individuals within Wales) are relatively uncommon, within Wales (Mammal Society 2020). Barbastelle is listed as a near threatened species.

Barbastelle was recorded an average of 0.3 times per night, per detector over the duration of the study, while soprano pipistrelle and brown long-eared bats were recorded an average of 4.1 and 1.9 times respectively. Lesser horseshoe bats were recorded 0.2 times, while common pipistrelle (the most commonly recorded species on site) was recorded an average of 25.9 times per night, per detector.

5. Assessment of Impacts

Full assessments with regard to bat activity across the site will be concluded after the completion of the Spring transect and static detector survey in 2021.

6. Required Actions

6.1. Further Survey

A further transect and static detector survey should be undertaken in spring 2021.

6.2. Recommendations

No additional recommendations are made beyond those made in the Acer Ecology Preliminary Ecological Appraisal (Acer Ecology, 2020) or the Landscape and Ecological Management Plan (Acer Ecology, 2020).

6.3. Longevity of Report

If development works do not begin within two years of the date of this report, an update survey will be required in accordance with guidance in the BS 42020:2013⁸, to determine if conditions have changed since those described in this report.

⁸ As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

7. References and Bibliography

Acer Ecology (2020) *Ty Fry Farm, Swansea: Preliminary Ecological Appraisal*. Unpublished Report for Barratt & David Wilson Homes.

Acer Ecology (2020) *Ty Fry Farm, Swansea: Landscape and Ecological Management Plan*. Unpublished Report for Barratt & David Wilson Homes.

Anonymous (2007) *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC*. Final version, February 2007.

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

Mammal Society (2020) *The State of Mammals in Wales* A report by the Mammal Society for Natural Resources Wales.

Plan 1: Transect Survey Results (August)



Plan 2: Transect Survey Results (October)

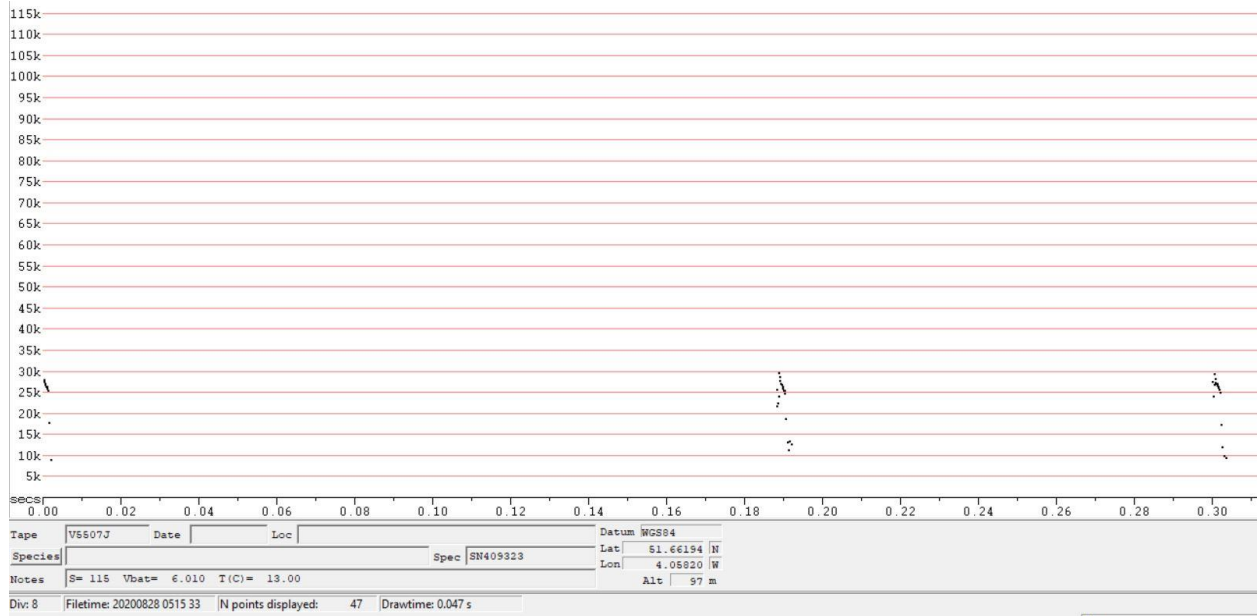


Plan 3: Static Detector Locations



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Appendix 1: Barbastelle Record



Determined by Erika Dahlberg