

ASSESSMENT OF BAT ACTIVITY AT PALMYRA, WHITECHURCH ROAD,  
RATHFARNHAM, DUBLIN 16

OCTOBER 2021



Prepared October 2021 by:



Forest, Environmental Research and Services Ltd. ([www.fers.ie](http://www.fers.ie))

Silloogue

Kilberry

Navan

Co. Meath

087 7573121

[info@fers.ie](mailto:info@fers.ie), [pat.moran@fers.ie](mailto:pat.moran@fers.ie)

OSI License No.: EN0064509

## EXECUTIVE SUMMARY

*This report addresses Item (1) of the request for further information by South Dublin Co. Council as regards Register Reference SD21B/0372 (applicant Anne Jackson). As a component of an Ecological Impact Assessment undertaken at Palmyra, Whitechurch Road, Rathfarnham, Dublin 16, a comprehensive assessment of bat usage of the site was undertaken during the period January – July 2021. This document reports on the findings of the surveys undertaken. There was no evidence to suggest any roosting activity (winter or summer) in the vicinity of Palmyra House or adjacent outbuildings. In addition, the ecological corridor provided by the River Glin was observed to be used to a lesser extent than expected by bats, likely owing to a lack of cover as the river passes through a golf course in the immediate vicinity. The proposed development will have no significant impact on the local bat population.*

# Contents

---

1	Introduction .....	2
1.1	FERS Company Background .....	2
1.2	Aim of this document.....	2
2	Survey Methodology.....	3
2.1	Desk study.....	3
2.2	Winter survey.....	3
2.3	Summer surveys.....	4
2.3.1	Static Monitoring .....	4
2.3.2	Emergence and Dawn Survey .....	5
3	Results.....	7
3.1	Winter Survey .....	7
3.2	Summer surveys.....	7
3.2.1	Static Surveys.....	7
4	Summary of findings .....	11
5	References and Bibliography .....	12

# 1 Introduction

---

## 1.1 FERS Company Background

Forest, Environmental Research and Services have been conducting ecological surveys and research since the company's formation in 2005 by Dr Patrick Moran and Dr Kevin Black. Dr Moran, the principal ecologist with FERS, holds a 1st class honours degree in Environmental Biology (UCD), a Ph.D. in Ecology (UCD), a Diploma in EIA and SEA management (UCD) a Diploma in Environmental and Planning Law (King's Inn) and a M.Sc. in Geographical Information Systems and Remote Sensing (University of Ulster, Coleraine). Patrick has in excess of 20 years of experience in carrying out ecological surveys on both an academic and a professional basis. Dr Emma Reeves, senior ecologist with FERS holds a 1<sup>st</sup> class honours degree in Botany, and a Ph.D. in Botany. Emma has in excess of 10 years of experience in undertaking ecological surveys on an academic and professional basis. Ciarán Byrne, a senior ecologist with FERS holds a 1<sup>st</sup> class honours degree in Environmental Management (DIT) and a M.Sc. in Applied Science/Ecological Assessment (UCC). Ciarán has in excess of 5 years in undertaking ecological surveys on both an academic and a professional basis. FERS specialise in undertaking long-term monitoring of bat populations.

FERS client list includes National Parks and Wildlife Service, An Bord Pleanála, various County Councils, the Heritage Council, Teagasc, University College Dublin, the Environmental Protection Agency, Inland Waterways Association of Ireland, the Department of Agriculture, the Office of Public Works and Coillte in addition to numerous private individuals and companies.

## 1.2 Aim of this document

This document addresses Item (1) of the request for further information by South Dublin Co. Council as regards Register Reference SD21B/0372 (applicant Anne Jackson). This document reports on the findings of the bat assessment undertaken as a component of an Ecological Assessment of Palmyra and House and surrounding property during the period January – July 2021 with regard to the potential for the proposed development to impact on roosting/commuting/foraging bats.

## 2 Survey Methodology

---

### 2.1 Desk study

A query of the National Biodiversity Datacentre database for Habitat suitability indices as regards bat landscapes indicated that the survey area is located in an "intermediate" landscape as regards "All Bats". There has been a building at the Palmyra site for over 100 years as the main building is shown on the 1<sup>st</sup> edition OSI maps, and the current layout is much the same as that illustrated on the 2<sup>nd</sup> Edition OSI map. The desk study indicated potential for a hibernation and/or maternity roost to be present within the main dwelling house immediately adjacent to the proposed development site. The trees within the development site are suboptimal for roosting bats, and the main dwelling house was deemed to be the most likely roosting site in the immediate vicinity. Surveys for usage of the proposed site and immediate *environs* were undertaken during both the winter (hibernation) and summer (maternity) seasons.

### 2.2 Winter survey

A daylight survey to assess the suitability of habitats occurring for use by roosting bats was undertaken on the 11<sup>th</sup> of January 2021 by Dr Emma Reeves. Having identified that the main dwelling was the most suitable winter roosting site, one Pettersson D500X unit was deployed in the vicinity of the building, with the other two units deployed within the *environs*. These units remained *in situ* recording any bat activity between the 11<sup>th</sup> of January and the 15<sup>th</sup> of February 2021. Having retrieved the units, the data was downloaded and analysed utilising software and manual interpretation (Sonochiro and Batsound).



Figure 1: Location of D500X units during the winter surveys

## 2.3 Summer surveys

In June 2021, an assessment of habitats occurring in the vicinity of Palmyra House was undertaken. Owing to the habitats present and the ecological corridor provided by the Whitechurch Stream (River Glin) adjacent, it was deemed necessary to undertake both static monitoring of the site (three Pettersson D500x Units) and an emergence/dawn survey of the site.

### 2.3.1 Static Monitoring

During the period 8<sup>th</sup> of June – 15<sup>th</sup> of June 2021, three Pettersson D500x Units were deployed:

- Unit (1) was deployed in the small “walled garden area”;
- Unit (2) was deployed in the main garden; and
- Unit (3) was deployed adjacent to the main dwelling.

Having retrieved the units, the data was downloaded and analysed utilising software and manual interpretation (SonoChiro and Batsound).



Figure 2: Location of D500x Units during summer surveys

### 2.3.2 Emergence and Dawn Survey

On the night of the 30<sup>th</sup> of June and morning of 1<sup>st</sup> of July 2021, an emergence/dawn survey was undertaken by Dr Patrick Moran under ideal conditions (starting temperature 18°C, no wind, no rain). Prior to the survey beginning, the main structures were examined utilising a drone (Mavic 2 Zoom) in order to identify any priority areas to focus surveys on (areas around roof with staining, etc.).

The emergence survey commenced at 21:30 (sunset at 22:00) and finished at 23:30. Conditions were optimal throughout the survey. The area surveyed is relatively small and the primary focus was the dwelling house. A Pulsar Helion XP 50 Thermal Camera was utilised throughout the survey in order to visually observe any bat activity.





Figure 3: Thermal image of main dwelling house



Figure 4: Thermal image of path through the garden

The dawn survey commenced at 03:45, approximately 70 minutes before sunrise and finished at 05:25, approximately 20 minutes after sunrise. Conditions were optimal throughout, with a temperature of 11°C and no wind or rain.

In addition to the standard emergence/dawn survey, a Pettersson D500x unit was deployed with the microphone facing the water surface of the Whitechurch Stream, approximately 1.5m from the water surface. This unit recorded all bat activity from 30 minutes pre sunset (June 30<sup>th</sup>, 2021) until 20 minutes post sunrise (July 1<sup>st</sup>, 2021) along the river corridor.

## 3 Results

---

### 3.1 Winter Survey

There was minimal bat activity observed during the winter survey:

- Unit (1) – grounds - within trees by shed no activity recorded;
- Unit (2) – adjacent Whitechurch stream one bat pass (Leisler's Bat); and
- Unit (3) – adjacent to dwelling – no activity recorded

The almost total lack of activity over such a protracted length of time would indicate that there are no winter roosts in the immediate vicinity of the proposed development site.

### 3.2 Summer surveys

#### 3.2.1 Static Surveys

It was expected that owing to the habitats present, there would be a relatively high activity of bats. Three Pettersson D500x units deployed were placed in those areas most likely to support bats during the period 8<sup>th</sup> of June – 15<sup>th</sup> of June 2021 in order to assess activity levels:

- Unit (1) was deployed in the small "walled garden area";
  - Unit (2) was deployed in the main garden; and
  - Unit (3) was deployed adjacent to the main dwelling.
- 
- Unit (1) – Recorded only two bat passes of two species (Common Pipistrelle (1) and Soprano Pipistrelle (1) indicating no roost in the vicinity of the walled garden;
  - Unit (2) – Recorded 50 bat passes of three species (Leisler's Bat (10), Common Pipistrelle (39) and Soprano Pipistrelle (1). Low level of activity and the timing of activity indicates that there is no roost within the vicinity; and
  - Unit (3) – Recorded a total of 175 bat passes of four species (Leisler's Bat (22), Common Pipistrelle (120), Soprano Pipistrelle (22) and Nathusius' Pipistrelle (11)) during the period 8<sup>th</sup> June – 15<sup>th</sup>, 2021. Considering the habitat present (Mature trees and Whitechurch stream), an average of only 25 bat passes per night is a very low total. The vast majority of bat passes were

of Common Pipistrelle, a species which tends to continually forage at a spot, indicating that the number of bat passes over-estimates the numbers of bats (one bat may have passed the recorded continually for several minutes). The pattern of timing of bat passes would indicate that there is no roost in the vicinity.

3.2.1.1.1 Emergence/dawn survey

On the night of the 30<sup>th</sup> of June and morning of 1<sup>st</sup> of July 2021, an emergence and dawn survey was undertaken by Dr Patrick Moran under ideal conditions (emergence survey starting temperature 18°C, no wind, no rain). Prior to the survey beginning, the main structures were examined utilising a drone (Mavic 2 Zoom) in order to identify any priority areas to focus surveys on (areas around roof with staining, etc.). There were no indications of a potential roosting site present, although there are areas of the roof suitable.



Figure 5: Palmyra House with outbuildings indicated in red



Figure 6: Outbuildings/sheds adjacent to Palmyra House

The emergence survey commenced at 21:30 (sunset at 22:00) and finished at 23:30. Conditions were optimal throughout the survey. The area was continually surveyed with hand-held bat detectors (Pettersson D1000X, Echometer 3plus and Pettersson D200X). A Pulsar Helion XP 50 Thermal Camera was utilised to survey the area, concentrating on the buildings present (house and outbuildings).

A total of 23 bat passes of three species (Leisler's Bat (5), Common Pipistrelle (16) and Nathusius' Pipistrelle (2)) were observed during the emergence survey. All observed bats approached from the east.

A total of 21 bat passes of four species were recorded during the dawn survey (Leisler's Bat (12), Common Pipistrelle (5), Soprano Pipistrelle (2) and Nathusius' Pipistrelle (2)). All bats observed were flying toward the west with Leisler's flying at height.

The Pettersson D500x Unit located along the Whitechurch Stream recorded only 24 bat passes of 3 species (Leisler's Bat (3), Common Pipistrelle (9) and Soprano Pipistrelle (12)) throughout the night. Of note, these bat passes were observed within a narrow time-span (21:50 – 22:26) with no activity throughout the night or the following morning. This would indicate that this stretch of the Whitechurch Stream is not an important commuting or foraging corridor for bats. This is almost certainly owing to the fact that there is no cover associated with the watercourse as it passes through a golf-course

immediately to the south of the survey area, which would expose any bats utilising the corridor to predation – the commuting corridor has essentially been severed.



**Figure 7:** Whitechurch stream passing through a golf course immediately south of the survey area, with no associated cover

The low level of bat activity indicates no significant roosts proximate to the proposed development and that the habitat present is currently not of high value for commuting/foraging bats.

## 4 Summary of findings

This document reports on a survey of bat usage of Palmyra House, associated outbuildings and grounds as regards roosting and feeding/foraging activities and assessing potential impact on these species arising from the proposed development. There was no evidence of use of Palmyra House or associated outbuildings as a roosting site (hibernation or maternity) and there was a surprising paucity of bat foraging/commuting activity given the habitats present. It is likely that the lack of any vegetation alongside the Whitechurch stream (River Glin) as it passes through a golf course immediately adjacent to the survey site has impacted negatively on the use of the corridor. No light-sensitive species such as Daubenton's Bat or Brown Long-eared Bat were observed to occur in the vicinity. It is concluded that the proposed development will have no significant impact on the local bat population.

## 5 References and Bibliography

---

Furlonger CL, Dewar HJ and Fenton MB (1987). Habitat use by foraging insectivorous bats. *Canadian Journal of Zoology*, **65**, 284 – 288.

Rydell J (1992). Exploitation of insects around streetlamps by bats in Sweden. *Functional Ecology*, **6**, 744 – 750.

Environmental Protection Agency (1995) Advice notes on current practice in the preparation of Environmental Impact Statements. EPA, Wexford, Ireland.

Entwhistle A, Racey P and Rydell J (1996). Timing of foraging flights of three species of bats in relation to insect activity and predation risk. *Oikos* **76**, pp 243 - 252.

Environmental Protection Agency (1997) Draft Guidelines to be contained in the information to be contained in Environmental Impact Statements. EPA, Wexford, Ireland.

European Commission (2000) Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive. Luxembourg: Office for Official Publications of the European Communities

Fossitt, J. (2001) A Guideline to Habitats in Ireland. The Heritage Council, Kilkenny, Ireland.

European Commission (2002) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Luxembourg: Office for Official Publications of the European Communities

Downs N, Beaton V, Guest J, Polanski J, Robinson S, and Racey P (2003). The effects of illuminating the roost entrance on the emergence behaviour of *Pipistrellus pygmaeus*. *Biol. Conserv*, **111**, pp 247–252.

Kelleher, C. & Marnell, F. (2006) Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

European Commission (2007) European Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC; Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission.

Marnell F, Kingston N and Looney D (2009). Ireland Red List No. 3: Terrestrial Mammals, National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities. DEHLG

Stace C (2010). New Flora of the British Isles (3<sup>rd</sup> Edn), Cambridge University Press, UK.

DEHLG (2011) European Communities (Birds and Natural Habitats) Regulations 2011. DEHLG.

Parnell J and Curtis T (2012). Webb's An Irish Flora. Cork University Press, Cork, Ireland.

Stone EL, Jones G and Harris S (2012). Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. *Global Change Biology*

NPWS (DEHLG) (2013). The Status of EU Protected Habitats and Species in Ireland. DEHLG.

Environmental Protection Agency. (2017) Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR). EPA, Wexford, Ireland.

[www.biodiversityireland.ie](http://www.biodiversityireland.ie) – website of the National Biodiversity Data Centre

[www.sdcc.ie](http://www.sdcc.ie) – website of South Dublin County Council

[www.npws.ie](http://www.npws.ie) – website of the National Parks and Wildlife Service, source of information for data regarding Natura 2000 sites and Article 17 Conservation Assessments.



[www.europa.eu](http://www.europa.eu) – official website of the European Union, source of information on EU Directives.