

Bat Survey
Church House
Nuns Island
Co. Galway
2022



Ecological Services

Barbara McInerney

Carney, Co Sligo

+353 (0) 868690222

wildonfoot@gmail.com

Bat Licence No: DER/BAT 2021-43, C157/21

Contents

INTRODUCTION	1
BATS IN IRELAND	3
METHODS	4
RESULTS.....	5
SITE INSPECTION	5
DUSK SURVEY 1	5
DAWN SURVEY	5
SONG METER 4 ACTIVITY	5
DUSK SURVEY 2	5
WEATHER, SUNRISE AND SUNSET TIMES.....	7
RESULTS SUMMARY.....	7
DISCUSSION	7
RECOMMENDATIONS	7
REFERENCES.....	9

Introduction

A survey of Church House, Nun's Island, Co. Galway has been proposed by OBFA Architects on behalf of Galway county council. The house is being proposed for renovation and the section of building joining it to the Nuns Island Theatre is proposed for removed.

Church house is located in Nun's Island in Galway city. It is bounded by a waterway to the west which connects to green areas and the river Corrib. These are ideal foraging areas for bats. There is built infrastructure on the other three sides. Church house is attached to the Nuns Island Theatre to the east by a more modern connecting building. See Fig 1, 2 & 3.

Fig.1: Location of Church House, Nun's Island, Co. Galway Irish grid reference: M 29481 25151

(Irish Grid Reference Finder – IGRF)



Fig.2: Front or west facing view of Church House, Galway.



Fig 3: South view of the connecting building between the Nuns Island Theatre and Church House.

Note bat droppings on the window pane.



Bats in Ireland

In summer, many of Ireland's nine breeding species of bat use both built structures and trees for maternity roosts. Here, they raise their pup in a colony of females until the autumn when the young are self-sufficient. In autumn when the young are independent, some or all of the roost disperses into smaller roosts, commonly amongst trees containing cracks and crevices.

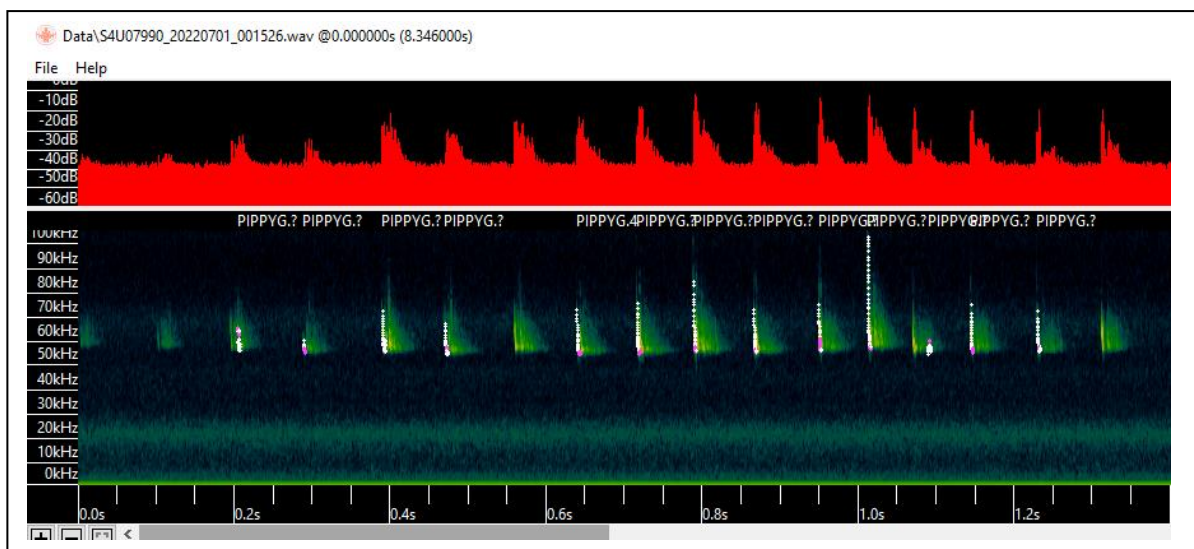
In winter, bats gather for hibernation, often in a separate location from the maternity roost. These locations, such as tree cavities, caves, souterrains, or deep stone walls are chosen because of steady temperatures, which allow the bats to stay in torpor and conserve energy.

Bats have developed a highly sophisticated echolocation system that allows them to avoid obstacles and catch insects. When they are flying, bats produce a stream of high-pitched calls and listen to the echoes to produce a sound picture of their surroundings. See Fig 4.

Due to the ecological behaviour of bats in Ireland, it is appropriate that this site is surveyed for bats. It contains potential in the buildings for roosting bats, in conjunction with commuting and foraging habitat.

All Irish bats are protected under National and EU legislation (The Wildlife Act 1976, the Wildlife (Amendment) Act 2000, and European Communities (Birds and Natural Habitats) Regulations 2011). Both the animals themselves and their roosts are protected, and it is an offence to disturb or interfere with them without a licence.

Fig.4: Sonogram of a Soprano pipistrelle recorded at Church House. This is an image representing the sound a bat emits when echo locating, when they are commuting, foraging and communicating with each other.



METHODS

An external visual inspection was carried out on Church house and its attached buildings on the 30/06/2022 looking for signs of bats. The house attic space and interior of the house was also checked for signs such as bat droppings, dead bats or wall staining.

A bat survey was carried out at dusk on 30/06/2022. Three “Song Meter 4” (SM4) static bat detectors were deployed at points around the house with the aim of capturing bat activity during the night. (Song Meter 7285 on the upper floor corridor inside the house, Song Meter 8681 at the south west external corner and Song Meter 7285 outside the connector building on the north side). An infra-red camera was used to view aspects of the house for signs of emerging/re entering bats. An Echo Meter Touch detector was used during these surveys.

A bat survey was carried out at dawn on the 01/07/202 using the same equipment

All recordings were downloaded and analysed using Kaleidoscope software and the infra red footage inspected for bat activity.

Locations of infra-red camera and static detectors may be seen in Fig 5 below.

Fig. 5: Song Meter and infra-red camera  locations at Church House



A third bat survey was carried out on the 18/08/2022. A dusk survey was carried out using an EMT and infra-red camera with the aim of getting another count at the Soprano Pipistrelle roost in the Nuns Island Theatre building and determining if the Soprano Pipistrelles were using any other roost location on the connector or church house buildings.

Results

Site inspection

During the buildings inspection, potential roost points were searched for. Areas with gaps or cracks were noted. On the north side of the connecting building, an upper window was noted to have bat dropping stuck to the glass. See Fig 3. This indicated that bats were roosting somewhere in that area. It was because of these droppings that the infra-red camera was positioned at this location during the emergence survey. A theatre group present at the time of inspection had seen bats within the theatre.

Dusk Survey 1

30/06/2022: Soprano Pipistrelle (*Pipistrellus pygmaeus*) Common Pipistrelle, (*Pipistrellus pipistrellus*) and Leisler's (*Nyctalus leisleri*), bat were recorded in the area. There was constant foraging by Soprano Pipistrelle around the house and river area. Soprano pipistrelle bats emerged from the north side - and flew across the roof to the south on several occasions. The first was seen at 22.30. Some bats were seen to pay attention to a hole in the plasterwork on the south side, but no bats emerged from that location during the survey. Several stayed around the building to forage over the waterway and surrounding vegetation throughout the survey.

Dawn Survey

01/07/2022: On inspection of the infra-red camera footage after the dusk survey of the 30/06/2022 it was clear that there was a Soprano Pipistrelle bat roost in the North West corner of the Nuns Island Theatre building. See Fig 6 & 7. This was surveyed at dawn and a total of 22 bats were counted.

Note: Attempted predation by gulls of the returning bats at dawn was observed.

Song Meter 4 activity

No bats were recorded on SM4 7285 located within the house. This indicated that no bat activity was taking place in the attic (the hatch was open during the survey since its inspection) or within the house.

The same species as noted during the surveys were recorded on the other two SM4'S with Soprano Pipistrelle having the largest number of calls logged.

Dusk Survey 2

18/08/2022: No bats emerged from Church House or the connector building during this survey. The bat roost count at the Nuns Island Theatre building was 26.

Fig.6: Location of a Soprano Pipistrelle bat roost in the North West corner of Nuns Island Theatre building.



Fig 7: Ariel view of Church House and Nuns Island Theatre, showing location of the Soprano Pipistrelle Bat roost.



Weather, Sunrise and Sunset Times

The survey and recordings were carried out in as optimal weather conditions as possible, although there was brief light rain showers at dawn on the 01/07/2022. See Table 1.

Table 1: Weather/Sunrise & Sunset Times

Date	Survey	Sunrise/ Sunset	Wind speed Bf	Cloud cover %	Precipitation Y/N	Temperature °C
30/06/2022	dusk	22.07	F3	80	N	17
01/07/2022	dawn	05.13	F0	100	light drizzle	13
18/08/2022	dusk	21.01	F1	100	N	19

Results Summary

Three species of bat were recorded during the survey at Church house, Nuns Island. No species was roosting in the house.

There is a Soprano Pipistrelle roost in the North West corner of the adjacent Nuns Island Theatre building. Max count 26 bats. See Fig 6 & 7.

Discussion

There are no bats using Church House, Nun's island, therefore works *within* this building will not affect any bat species. However as the connecting structure between the house and Theatre building is proposed for removal, care should be taken not to disturb roosting bats at the Theatre during works.

Recommendations

- Demolition works and any scaffolding needed on the west side of this site should occur over the winter months when Soprano Pipistrelle bats are in hibernation. Access to their roost point should not be blocked / hindered during the maternity season. See Fig 6 & 7 for location.

Lighting

Appropriate lighting around Church house is crucial in terms of keeping the site as dark as possible for foraging and commuting bats and for minimising light pollution in general.

Bats are not blind, and if there is too much light, their vision can be reduced, resulting in disorientation and interruption of foraging.

Guidelines for lighting should be used from the following sources:

- Bat Conservation Trust: <https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting>
- Bat Conservation Ireland https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf

The following ideals should be adhered to:

- 💡 The avoidance of direct lighting on trees, hedges and shrubs. All lights should lack UV elements and *low level* LED lights should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 - 💡 Directional lighting – that is, lighting only at the intensity and direction it is needed.
 - 💡 Height of lighting columns – The lower the light column, the less light spillage.
 - 💡 Duration of lighting – Lights should only be on when in use or for health and safety purposes. The use of timers and sensors are ways of controlling this.
-

References

Bats & Lighting - Bat Conservation Ireland <https://www.batconservationireland.org> › 2013/09 › [BCIrelandGuidelines Lighting](#)

Bat Conservation Ireland (2019) <https://www.batconservationireland.org/what-we-do/monitoring-distribution-projects/bat-record-maps>

Collin, J. (ed.) (2016) Bat Surveys for Professional Ecologists. Good practice guidelines (3rd edition). The Bat Conservation Trust, London.

Marnell, F., Kelleher, C. & Mullen, E (2022) Bat Mitigation Guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Dublin, Ireland.

Scottish Natural Heritage (SNH). Protected Species Advice for Developers – Bats. <https://www.nature.scot/sites/default/files/2019-01/Species%20Planning%20Advice%20Project%20-%20bats.pdf>

Sunrise and sunset times - Accuweather.com