

## BAT SURVEY & STRATEGY 2021

### BROOK COTTAGE OZLEWORTH, GLOUCESTERSHIRE



***CTM WILDLIFE***

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<u>Version</u>	<u>Purpose</u>	<u>Date</u>
1	Project design & planning application	4 <sup>th</sup> June 2022

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This report assesses the ecological impact of the proposal based on wildlife legislation and planning policy. It is an independent assessment and not a statement of support or otherwise to the proposal for the site.

Disclaimer: While all reasonable effort has been made to ensure that the following information is correct and up to date it should not be relied upon as a definitive guide to wildlife and wildlife law. The exact requirements and habits of wildlife can vary and not be fully understood. Surveys and assessments can be restricted snap shots in time and space. Any conclusions and recommendations are made here in good faith. Also, the implementation of law can vary. Those needing to limit impacts and their risk should consult the original legislation and/or a lawyer conversant with wildlife law. No responsibility is accepted to any third party for the whole or part of the contents of this report.

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## **BAT SURVEY & STRATEGY 2021**

### **BROOK COTTAGE OZLEWORTH, GLOUCESTERSHIRE**

#### **EXECUTIVE SUMMARY**

##### Proposal

To refurbish the cottage including reroofing it.

##### Survey

A preliminary survey and three night-time bat surveys were undertaken.

##### Bats

- The roof is used as a day roost by (1) soprano pipistrelle and (2) Natterer's bat.

##### Impact

- The proposal will destroy the bat roosts.

##### Mitigation/Compensation

Refer to Section 5.6 of this report for more detail on the following strategy:

- Controls to avoid harm to bats during the works
- The reinstatement of roosting places in the roof
- The fitting of long-lasting bat boxes on trees
- Controls on external lighting.

##### Licensing

- A bat mitigation licence issued by Natural England will be required for work.

##### Further survey

- None currently required.

##### Other considerations

- The protection of plant communities and other features on the Cotswolds stone walls is encouraged.
- A system to ensure no pollutants enter the adjacent brook during the works is advised.

## 1. INTRODUCTION

Brook Cottage is a rural dwelling.

The owner proposes to:

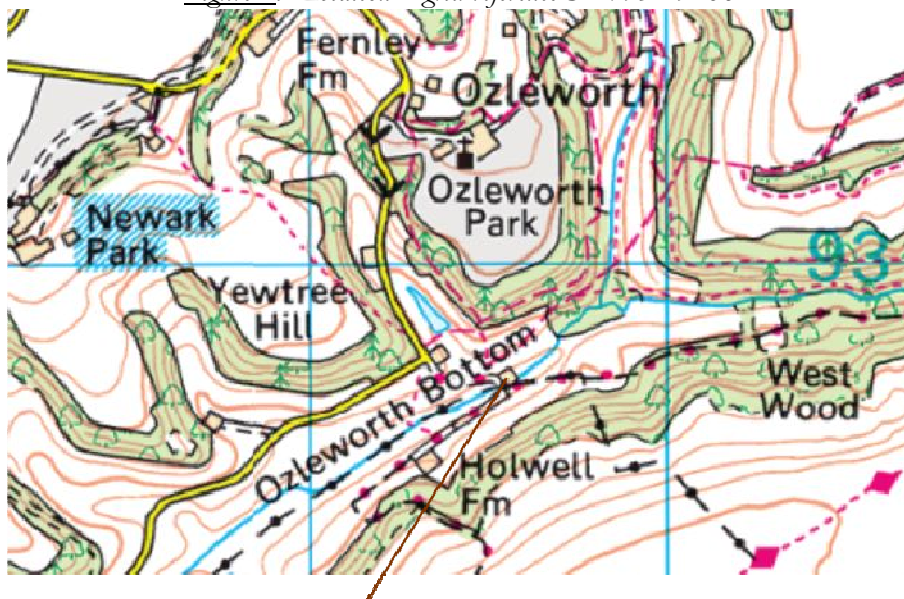
- *Refurbish the cottage including fitting dormer windows.*

The architect requested an ecological appraisal due to the proposal affecting a roof in a rural location. This report focuses on bats and gives (1) the findings of a preliminary daytime survey, (2) the results of subsequent night-time bat surveys and (3) a bat mitigation strategy for the proposed works. Other species were borne in mind and are also reported on.

## 2. OBJECTIVES/SCOPE

- *To assess the status of bats at the cottage*
- *To determine any implications to the proposed work and a mitigation strategy.*

Figure 1. Location – grid reference ST 7952 9266



Location

### **3. METHODOLOGY**

#### **3.1 Personnel**

The survey was carried out by Colin Menendez BSc (Hons) MCIEEM CEnv. Colin has 30+ years' experience as a professional ecologist and 20+ years' experience carrying out development-related bat surveys. His Natural England survey licences include a Class 2 licence for bats, he is a Registered Consultant with a Bat Low Impact Class Licence and holds a Bats in Churches Class Licence. He was assisted by Jeremy Doe BSc (Hons) MCIEEM, who has 15+ years' experience undertaking bat surveys.

#### **3.2 Historic information**

A data search was not undertaken at this time – the ecologist has undertaken several bat surveys in Ozleworth and is familiar with what bats occur locally.

#### **3.3 Day survey**

A standard day-time survey was undertaken on 2<sup>nd</sup> February 2022. This was a systematic search of the exterior and interior of the cottage, and a garage and a garden privy, for bats and signs of bats. Signs would include bat droppings, staining, urine drops and feeding remains for example. There are attic rooms in the roof accessed via stairwells. Equipment: torch and close-focusing binoculars. Conditions: dry, patchy cloud, breezy and cool 10 °C.

The garden privy was rechecked prior to the evening bat surveys.

#### **3.4 Night-time surveys**

##### 3.4.1 Night survey 1

This was a standard dusk bat-emergence survey on 10<sup>th</sup> May 2022. Two surveyors were positioned angled at opposite ends, overlooking the cottage. Equipment: BatBox Duet, BatBox IIID, Anabat Expresses x2 and Anabat SD. Conditions: dry, patchy cloud, calm to light breeze and warm to mild 17 – 13 °C.

##### 3.4.2 Night survey 2

This was a standard dusk bat-emergence survey on 1<sup>st</sup> June 2022. One surveyor was positioned angled at the south-western front focussing on the identified likely bat-roosting places. Equipment: BatBox Duet, BatBox IIID set at 108 KHz, Anabat Expresses x2 and Anabat SD. Conditions: dry, clear sky, calm and mild to cool 11 - 9 °C.

##### 3.4.3 Night survey 3

This was a standard dawn re-entry survey on 26<sup>th</sup> June 2022. One surveyor was positioned angled at the south-western front, patrolling and moving to investigate any bats. Equipment: BatBox Duet, Anabat Expresses x2 and Anabat SD. Conditions: dry, full cloud, calm and mild 15 °C.

## 3.5 Constraints

The inspection of structures as bat roosts can be problematic. Roosting places can be unseen and bats can roost in crevices with no or few outward signs of their presence.

There are inherent constraints in night-time surveys due to the varied behaviour of bats between roosts and nights and locating the source of bats in flight in the dark.

Survey by an experienced, licensed ecologists helps reduce these constraints.

## 4. RESULTS

### 4.1 Historic information

CTM Wildlife has previously found the following species within 2 km: greater horseshoe bat (maternity roost), lesser horseshoe bat (maternity roost), Daubenton's bat, whiskered bat (maternity roost), Natterer's bat, common pipistrelle, soprano pipistrelle, noctule, serotine & brown long-eared bat. The maternity roosts are more than 1 km from Brook Cottage. Woodchester Mansion SSSI important for its breeding populations of greater and lesser horseshoe bats is at 8.8 km.

### 4.2 Day survey

#### 4.2.1 Cottage

Brook Cottage is next to the Marlees Brook in the bottom of a small sheltered valley on the Cotswolds escarpment. There are ribbons of woodland along the valley sides amongst estate and farmland. The nearest woodland to the cottage is on the opposite side of the brook. It is good habitat for bats.

Brook Cottage is two storey and with rooms built into the roof. It is understood to have formerly been two cottages, built around 1800 and converted to one property in the 1960s. It is Grade II listed. The cottage had been lived-in until 2022.

The walls are painted, rendered stone. The doors and windows are timber and intact. The roof is twin-pitched and capped with Cotswolds stone slates on bitumen felt (and plastic in places). The felt is exposed in the attic rooms. There are four chimneys with a mix of stone, brick and rendering, which are mortared to the roof at their bases.

Overall the building is generally in a good sate of repair, though with gaps at the wall tops and with natural gaps between the stone slates that a bat could access.

There were several old bat droppings located in the north-most attic room. These were at the gable end, caught in cobwebs underneath the ridge. DNA analysis identified these to be **soprano pipistrelle droppings**. **The bat(s) would have been roosting in the structure of the roof at the ridge close to where there is a chimney.**

*Photo 1 South-western front*



*Photo 2 North-eastern rear*



*Photo 3 Location of bat droppings in attic room*



#### 4.2.2 Garage

The garage is made from tongue-and-groove timber planks, with roofing felt on a pitched plank roof and closed double doors.. No signs of bats were found in it. The garage has a negligible potential for roosting bats.

*Photo 4 Garage*



#### 4.2.3 Privy

The garden privy is made with mortared Cotswolds stones and has a twin-pitched roof capped with stone slates on bitument felt. There are open venetian lancetts in the end walls and narrow gaps over the closed doors to two stalls. The privy was checked three times over the period of surveys and no signs of bats were found. The roof was cobwebby inside and there were rat droppings on the floor. The privy is assessed to not be used by roosting bats.

*Photo 5 Privy*





## 4.3 Night surveys

### 4.3.1 Survey 1: Dusk 10<sup>th</sup> May 2021

*Common pipistrelle* – heard in an adjacent field from a few minutes after dusk. Thereafter heard on-and-off throughout the survey especially from the rear garden backing onto this field.

*Soprano pipistrelle* – **one soprano pipistrelle exited the roof** at the south-western front pitch 15 minutes after dusk.

*Myotis* – heard 26 minutes after dusk and a bat flew through the garden several minutes later.

*Noctule* - heard passing in the background 34 minutes after dusk and several times again through the survey.

*Lesser horseshoe bat* – a bat flew low to the ground through the garden 55 minutes after dusk.

### 4.3.2 Survey 2: Dusk 1<sup>st</sup> June 2022

*Common pipistrelle* – heard in the background from a couple of minutes after dusk. **One common pipistrelle exited the roof** from the northern half of the front western pitch eight minutes after dusk. This species was heard thereafter on-and-off throughout the survey again especially at the field to the rear and with the very occasional pass through the garden.

*Soprano pipistrelle* – **one soprano pipistrelle exited the roof** at the south-western front pitch (the same place as before) seven minutes after dusk.

*Noctule* – first faintly heard in the background 29 minutes after dusk and again few more times later on.

*Myotis* – a bat was first present at the southern end of the garden next to the wood and stream 41 minutes after dusk. A bat then fed in the garden on-and-off for several minutes.

### 4.3.3 Survey 3: Dawn 24<sup>th</sup> June 2022

*Common pipistrelle* – initially heard in the background, with a single bat flying through the garden 50 minutes before dawn and then occasionally heard in the background with the last bat 26 minutes before dawn.

*Noctule* – heard one hour 13 minutes before dawn. A bat circled the roof and then flew away 45 minutes before dawn, returned several minutes later, buzzed the surveyor, flew away and was heard again eight minutes before dawn.

*Myotis* – a bat was heard in the garden one hour 11 minutes before dawn and heard again several minutes later. **One Myotis bat flew in and entered the roof** at its front south-western pitch next to the middle chimney 27 minutes before dawn. These and previous calls were most characteristic of **Natterer's bat**.

*Soprano pipistrelle* – 23 minutes before dawn **one soprano pipistrelle flew in and entered the roof** at its front south-western pitch over the wall plate below the southern-most chimney. **A second bat entered the roof** a few minutes later lower down the roof here. **A third bat entered the roof** at its north-eastern rear pitch next to the middle chimney at three minutes before dawn.

## 5. CONCLUSIONS

### 5.1 Outline project

It is understood that it is proposed to:

- *Refurbish the cottage including fitting dormer windows.*

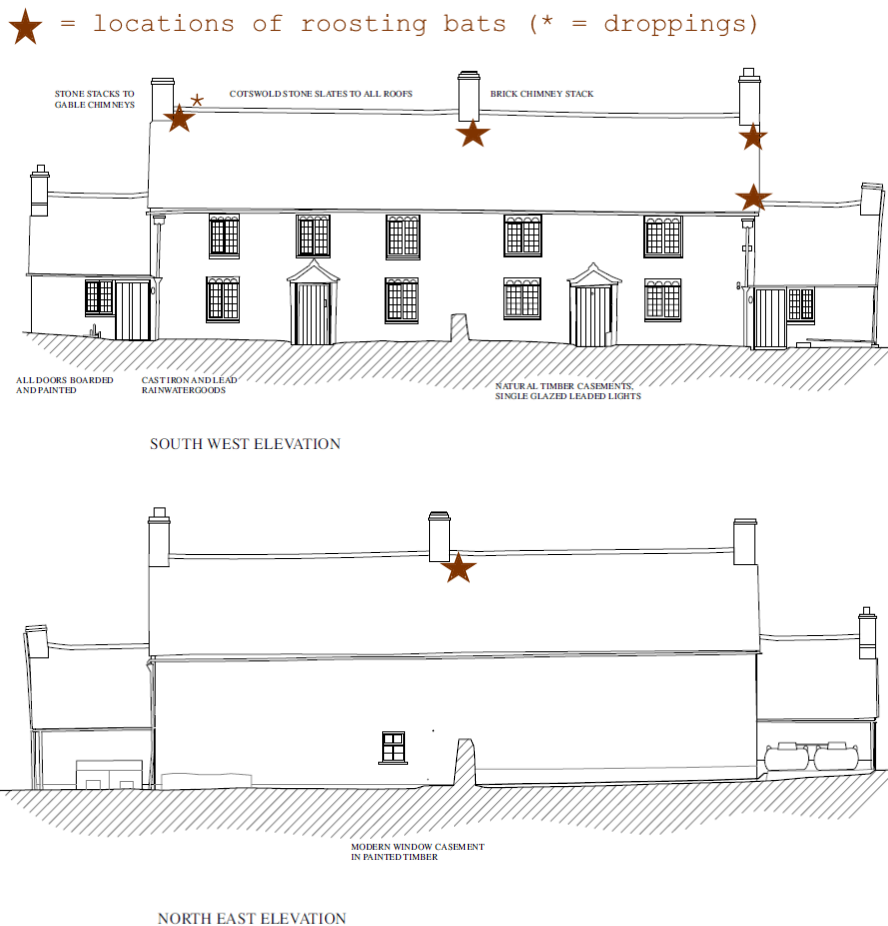
It is understood that the cottage will almost certainly need to be reroofed.

### 5.2 Use of the cottage by bats

The house is consistently used by small numbers of roosting bats. The number of bats did not build-up to a potential maternity roost.

- **Soprano pipistrelle ‘day roost’ in the roof** (peak count three bats).
- **Natterer’s bat ‘day roost’ in roof** (peak one bat).
- Day roosts are where individual and small groups of bats rest-up in the daytime.
- The bats are roosting individually under the stone roof slates in a variety of places.
- The setting looks to be good foraging habitat for bats.

*Figures 2 & 3 Locations of roosting bats*



### 5.3 Legal considerations

All species of British bat and their roosts are protected by law (Appendix 1).

### 5.4 Impact on bats

The following is based on the planned works:

- The bat roosts will be destroyed.
- There is a risk of harm and disturbance to bats during the works.

### 5.5 Conservation significance

Both species of bat are relatively common and widespread in Britain including in southern England. They are protected due to the rate of decline of populations. Day roosts of these species used by low numbers of bats are at the lower end of conservation significance.

### 5.6 Mitigation/Compensation

Natural England's guidelines are that impacts on bats and their roosts should in the first instance be avoided. Where avoidance is not possible, the level of proportionate mitigation for small numbers of commoner species of bat is:

- Flexibility on the provision of new roosting places
- No timing constraints for the work or post-works monitoring.

The following strategy is based on the planned works at the time of writing. It is in-line with Natural England's guidelines on proportionate mitigation/compensation for the roosts at Brook Cottage:

#### 5.6.1 Timing

- **There will be no restriction on the time of year of the proposed works** (subject to any restrictions imposed by Natural England as part of the licensing for the work - see below). Autumn and spring-time are best when bats are less vulnerable.

#### 5.6.2 Works procedures

- **A pre-works briefing will be undertaken with the ecologist before the start of the work** in order to confirm working procedures and mitigation with regards to bats.
- **The ecologist will check for bats and oversee any work that might impact on bats** (the dismantling of the roof and lofts for example).

### 5.6.3 Roost mitigation/compensation

Once the cottage is reroofed with stone slates, bats will be able to reenter under the slates. The mitigation/compensation is to have a roof felt safe for bats under the slates, adapting battens and mortar on the roof to ensure bats places to cluster under the slates and ridge tiles, and the fitting of bat boxes on trees away from the house (the adjacent land is under the ownership of the client). The positions of the mitigation/compensation on the roof to match the positions of the existing roosting places (Figures 2 & 3 above).

- **Type 1F bitumen felt will be used** (not Breather Roof Membrane that can entangle bats)
- **Battens will fixed with 50 mm gaps in a minimum of three places on the verge tops and next to chimney bases** in order to enable bats to crawl up the roof under the slates to cluster below them at the baes of chimneys and/or depressions over the verge tops. These will be created under the advice of the ecologist.
- **Bat-crawling access will be created in a minimum of two places at the ridge** for bats to crawl under the top line of roof slates up under ridge tiles to a hollow in created in the mortar underneath the ridge for bats to roost. These will be created under the advice of the ecologist.
- **A minimum of two (one for each species) long-lasting bat boxes will be fitted on trees.** The boxes will be fitted in warm, unlit positons, under the guidance of the licence ecologist.

**Example of suitable boxes:**



*Schwegler IFF Bat Box*



*Woodstone Large Multi-chamber Bat Box*

### 5.6.4 Lights

- **External lighting will be limited to only that required for the safe, secure use of the property, avoiding the illumination of the flight paths to/from the roof and the setting especially trees and the adjacent brook and wood.** The following guidance is based on good practice for bats and external lighting:
  - Limit the number of external lights
  - Direct the lighting downwards only
  - Use fittings with cowls/hoods *etc.* to stop upwards or sideways light/glare
  - Use fittings that are PIR activated and set to turn-off after a maximum of three minutes inactivity when continuous lighting is not required
  - Use LED bulbs of maximum 2,700 kelvin
  - Do not line the setting, paths, walls *etc.* with lights.

Notwithstanding people's safety being the priority.

## 5.7 Licensing

- **A licence will be required for the work** where it affects the bats and their roosts.

Licences are issued by Natural England. The licence holder is generally the site owner or developer with a named ecologist who usually prepares the licence and oversees it on behalf of the licensee due to the exacting requirements of the bats and licence.

Licences are usually applied for after planning permission and other necessary consents have been granted and relevant conditions discharged.

At the time of writing, the work is likely to be applicable for a 'low impact' bat mitigation licence.

## 5.8 Further survey

- **No further survey is currently required.** Survey information for the bat mitigation licence application will need to include information from the current or most recent survey season. The level of any future survey effort/visits will depend on the time that has passed and current condition of the building for bats. The night-time survey season is typically May to September.

## 6. OTHER ECOLOGICAL CONSIDERATIONS

### 6.1 Cotswolds stone walls

The dry-stone walls around and within the garden (in a rural setting) support plant communities and features that are valuable habitat for wildlife. This 'frass' of plants, mosses, *etc.* are an attractive feature of long-established Cotswolds stone walls in the Area of Outstanding Natural Beauty. The previous owners of the cottage (a renowned poet) look to have stashed bones and other objects into the walls.

- **The project is encouraged to actively map, protect and retain the plant communities and features of the stone walls during the refurbishment work.** Ivy to be cleared from them where it occurs.

*Photos 6 & 7 Stone walls at Brook Cottage*



## 6.2 Marlees Brook

The Marlees Brook flows along the southern edge of the garden.

- It is recommended that **a procedure is put in place to ensure that no pollutants (including no silt) enters the brook during the works.**

*Photo 8 Marlee Brook*



## Appendix 1.

### - Brief summary of relevant legislation in the UK -

#### **Bats**

There is considerable evidence that all species of bat in Britain have declined significantly this century, particularly since the 1960s. The reasons for the decline include: loss of suitable roost sites, loss of feeding habitat, reduced availability of insect prey through pesticide use and mortality resulting from the use of highly toxic timber treatment chemicals in house roosts.

All species of British bat are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. As well as giving full protection from intentional and deliberate killing, injuring, disturbing and taking of bats, the cited legislation protects bat breeding and resting places (roosts) from damage, destruction and preventing access to such places. The legislation regarding roosts applies irrespective of whether the bats are present or not. The Countryside and Rights of Way Act 2000 added the word “reckless” to existing protection against “intentional and deliberate” actions.

The law requires that reasonable effort be made to ensure that any actions, plans or projects do not detrimentally affect bats or their roosts. Proposed developments that affect bats or bat roosts may require a licence from Natural England. Allow at least 30 days for a licence application to be determined.