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### **Bat Survey Report**

Site: Moorings, Tresco, Isles of Scilly, TR24 0PW

Grid Reference: SV 8934 1560

30<sup>th</sup> September 2021



### **Plan for Ecology Ltd**

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### Document Control:

<b>Site Name:</b>	Moorings, Tresco, Isles of Scilly
<b>OS Grid Reference:</b>	SV 8934 1560
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<b>Client:</b>	Tresco Estate
<b>Report Reference Number:</b>	P4E2290
<b>Version:</b>	01
<b>Date:</b>	30 <sup>th</sup> September 2021

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### Declaration:

"The information, evidence and advice, which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology & Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions."

<b>Kim Jelbert</b>	
<b>Lucy Wright</b>	

### Report Lifespan:

Ecological features can change over time, particularly if site management/ use changes. Typically, bat surveys are valid for 12 – 24 months (until September 2022/ 2023).



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## 1.0 Summary

### **Bat evidence?**

Moorings was visually inspected for evidence of bats on 18<sup>th</sup> March 2021. A number of external features were identified that have potential to support roosting bats or permit bat access to the interior of the roof voids. In addition, a small number of mammal droppings, characteristic of bat droppings, were found within the roof void above the first floor of the building. The building was assessed as being of moderate suitability for roosting bats.

In accordance with the Bat Surveys for Professional Ecologists: Good Practice Guidelines (2016), two bat emergence surveys, a static detector survey and DNA analysis of droppings was undertaken. No evidence of bats using the building was found. The survey results indicate that, at the time of the surveys, the building was not in current use by bats.

### **Proposed works?**

Extension.

### **Bat specific mitigation recommendations?**

Mitigation not required. Precautionary recommendations are provided.

There is opportunity to make provision for roosting bats within the building and enhance the value of the site for bats post-development.



## 2.0 Introduction

### 2.1 Background

In March 2021, Diana Mompoloki, on behalf of the Tresco Estate, commissioned Plan for Ecology Ltd to undertake a Preliminary Bat and Bird Assessment (sometimes referred to as a Bat and Barn Owl Assessment) of the property known as Moorings, Tresco, Isles of Scilly (OS Grid Ref: SV 89349 15603). The client proposes to extend the property. During the initial assessment, a number of external features were identified that have potential to support roosting bats or permit bat access to the interior of the roof voids. In addition, a small number of mammal droppings, characteristic of bat droppings, were found within the roof void above the first floor of the building (Plan for Ecology Ltd, 2021). Moorings was, therefore, assessed as being of 'moderate suitability' for roosting bats and further bat surveys were recommended (Plan for Ecology Ltd, 2021).

In accordance with the 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (Collins, 2016), the recommended further bat surveys comprised a minimum of two bat emergence or re-entry surveys and a static detector survey during the bat active season (May to September inclusive). DNA analysis of droppings found within the roof void was also recommended. In April 2021 Diana Mompoloki, on behalf of the Tresco Estate, commissioned Plan for Ecology Ltd to undertake the further survey work.

This report describes and evaluates the use of the building by bats, and details mitigation recommendations to minimise impacts upon bats in accordance the 'Bat Surveys for Professional Ecologists - Good Practice Guidelines' produced by the Bat Conservation Trust (Collins, 2016).

### 2.2 Project Administration

<b>Property Address:</b>	Moorings, Tresco, Isles of Scilly, TR24 0PW
<b>OS Grid Reference:</b>	SV 8934 1560
<b>Client:</b>	Tresco Estate
<b>Planning Authority:</b>	Council of the Isles of Scilly
<b>Planning Reference Number:</b>	Unknown
<b>Report Reference Number:</b>	P4E2290
<b>Proposed work:</b>	Extension
<b>Visual Assessment Date:</b>	18 <sup>th</sup> March 2021
<b>Emergence Survey Dates:</b>	20 <sup>th</sup> May and 3 <sup>rd</sup> September 2021
<b>Static Detector Survey Dates:</b>	Nights of 10 <sup>th</sup> – 16 <sup>th</sup> May 2021
<b>Ecologist &amp; Licence Number:</b>	Chloe Balmer MSci (Hons) Qualifying CIEEM member: Bat licence No. [REDACTED] Dr Kim Jelbert BSc (Hons) MSc PhD MCIEEM: Bat licence No. [REDACTED] Barn owl licence no. CL29/00037 Dr Lucy Wright BSc (Hons) MSc PhD MCIEEM Katherine Biggs BSc (Hons) MSc ACIEEM; Bat licence No. [REDACTED]; Barn owl licence no. CL29/00552



## 2.3 Legislation & Planning Policy

**Planning:** The local planning authority has a statutory obligation to consider impacts upon protected species resulting from development. Planning permission will not be granted with outstanding ecological surveys, and if applicable an appropriate mitigation plan.

**Bats:** In the UK all bat species are listed on Annex IV(a) of the European Communities Habitats Directive and as such are European Protected Species (EPS). In Britain protection of bats is achieved through their inclusion on Schedule 2 of the Conservation and Habitats Regulations 2019, Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 12 of the Countryside and Rights of Way Act 2000 (HM Government, 1981, 2000 & 2010).

As a result of this statutory legislation it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat/s in its roost;
- Intentionally or recklessly damage, destroy or obstruct access to a bat roost (even if bats are not occupying the roost at the time);
- Possess or sell or exchange a bat (dead or alive) or part of a bat.

Works with potential to cause significant disturbance to roosting bats may require a European Protected Species (EPSL) licence or Bat Mitigation Class Licence (CL21) from Natural England before works can legally commence. Works likely to result in less significant disturbance may be carried out under a Bat Mitigation Method Statement. The magnitude of disturbance and the requirement for an EPSL, Bat Mitigation Class Licence or method statement is assessed on a case-by-case basis by the bat ecologist. The Bat Mitigation Method Statement or EPSL must be prepared and/or applied for by a suitably experienced and licenced bat ecologist. Where planning permission is required, the appropriate licence cannot be obtained until planning permission has been granted.



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## 3.0 Methodology

### 3.1 Summary Visual Assessment

A visual assessment of the property was undertaken on 18<sup>th</sup> March 2021. The ecologist (Chloe Balmer) assessed the suitability of the building and surrounding habitat to support bats. A high-power torch was used to illuminate all accessible areas of the buildings with potential to support roosting bats and roosting/nesting birds. The ecologists searched for signs of bats and birds including droppings, staining, feeding remains, bird nests, barn owl pellets and liming.

The assessment was carried out in accordance with the 'Bat Surveys for Professional Ecologists - Good Practice Guidelines' produced by the Bat Conservation Trust (Collins, 2016). Potential bat roosts identified during the visual inspection of the building were categorised as to their suitability in accordance with the Bat Conservation Trust's (BCT) Good Practice Guidelines (Collins, 2016) as described below:

Negligible: negligible features with potential to support roosting bats.

Low: one or more features with potential to support individual bats on an occasional basis. Unlikely to support large numbers of bats.

Moderate: one or more features with potential to support roosting bats but unlikely to be of high conservation status.

High: one or more features with potential to support large numbers of bats on a regular basis.

### 3.2 Emergence Surveys

Emergence surveys of the building were undertaken on 20<sup>th</sup> May and 3<sup>rd</sup> September 2021. Two ecologists were required to cover all elevations of the building on both survey occasions. On the first survey occasion surveyor 1 (Lucy Wright) used an Echo Metre Touch (EMT) 2 detector and surveyor 2 (Katherine Biggs) used an EMT 2 detector and an Elekon Batscanner Stereo. On the second survey occasion, surveyor 1 (Kim Jelbert) used an EMT 2 Pro, and surveyor 2 (Chloe Balmer) used an EMT 2. The various detector types use different methods of detecting. The EMT detectors use heterodyne and real-time expansion, whilst the Elekon Batscanner Stereo detector uses the heterodyne method. Each method of detection is described below:

- Frequency division: this method automatically and continuously records bat calls at all frequencies and makes them audible to the human ear by dividing the call frequency by 10. Calls are played in real time and can be readily identified with sound analysis.
- Heterodyne: this method identifies bat calls echolocating at the frequency set by the operator but will fail to/ or only partially record bat calls outside this frequency.
- A real-time expansion bat detector digitally records ultrasonic bat calls and then plays them back at a slower rate and frequency to give an audible output.



Figure 1: Emergence surveys – surveyor locations. The dwelling is outlined red. Yellow triangles show surveyor locations on both emergence surveys and the red triangle shows the location of the static detector within the roof void over the first floor (void 2); droppings were also collected here.

### 3.3 Static Detector Survey

To provide more detailed information about bat activity, a static detector survey was carried out between the nights of 10<sup>th</sup> – 16<sup>th</sup> May 2021. A static bat detector (Anabat Express) was installed within roof void 2 above the first floor of the dwelling. The detector was set to record continuously overnight (30 minutes prior to sunset until 30 minutes after sunrise) for a total of seven nights. The Anabat Express uses the frequency division method of detecting as described in Section 3.2 above.

### 3.4 DNA Analysis

One sample of droppings was collected from the roof void above the first floor during the initial visual assessment (Fig. 1; red triangle). The sample was sent for DNA analysis to provide further information on the species present. DNA analysis was carried out by SureScreen Scientifics Ltd, Derbyshire, U.K.

### 3.5 Ecological Evaluation

The value of buildings/ other structures for roosting bats is determined following the framework provided by Wray *et al.* (2010). This framework determines the appropriate value of a roost on a geographic scale, based on the relative rarity of the bat species using the site (based on the known distribution and population size in the U.K.), as well as the type of roost (based on the results of the emergence/ re-entry and static detector surveys). Where more than one bat species is present within the site, each species is valued individually, and the highest value obtained is assigned to the site. Table 1 (below) categorizes bat species by their distribution and rarity in England. Table 2 (below) assigns a value for each roost type for the different rarity categories (Tables 1 and 2 are adapted from Wray *et al.* 2010).





Table 1: Relative rarity of bat species in England (adapted from Wray *et al.* 2010)

Rarity (within range)	Region England
Common	Common pipistrelle ( <i>Pipistrellus pipistrellus</i> ) Soprano pipistrelle ( <i>Pipistrellus pygmaeus</i> ) Brown long-eared ( <i>Plecotus auritus</i> )
Rarer	Lesser horseshoe ( <i>Rhinolophus hipposideros</i> ) Whiskered ( <i>Myotis mystacinus</i> ) Brandt's ( <i>Myotis brandtii</i> ) Daubenton's ( <i>Myotis daubentonii</i> ) Natterer's ( <i>Myotis nattereri</i> ) Leisler's ( <i>Nyctalus leisleri</i> ) Noctule ( <i>Nyctalus noctula</i> ) Nathusius' pipistrelle ( <i>Pipistrellus nathusii</i> ) Serotine ( <i>Eptesicus serotinus</i> )
Rarest	Greater horseshoe ( <i>Rhinolophus ferrumequinum</i> ) Bechstein's ( <i>Myotis bechsteinii</i> ) Alcathoe ( <i>Myotis alcathoe</i> ) Greater mouse-eared ( <i>Myotis myotis</i> ) Barbastelle ( <i>Barbastella barbastellus</i> ) Grey long-eared ( <i>Plecotus austriacus</i> )

Table 2: Value of bat roosts (adapted from Wray *et al.* 2010)

Value	Roost types
District, local or parish	Feeding perches (common species) Individual bats (common species) Small numbers of non-breeding bats (common species) Mating sites (common species)
County	Maternity sites (common species) Small numbers of hibernating bats (common and rarer species) Feeding perches (rarer/rarest species) Individual bats (rarer/rarest species) Small numbers of non-breeding bats (rarer/rarest species)
Regional	Mating sites (rarer/rarest species) including well-used swarming sites Maternity sites (rarer species) Hibernation sites (rarest species) Significant hibernation sites for rarer/rarest species or all species assemblages
National	Maternity sites (rarest species) Sites meeting SSSI guidelines
International	SAC sites

### 3.6 Weather Conditions

The weather during the initial visual assessment was in line with seasonal norms. The emergence surveys were undertaken during suitable weather conditions, as described below:

- 20<sup>th</sup> May 2021: dry with full cloud and a temperature of 11.0°C at the beginning and end of the survey; in accordance with the Beaufort Scale, wind was described as strong breeze.



- 3<sup>rd</sup> September 2021: dry with full cloud and a temperature of 14.0°C at the beginning of the survey; and 13.0°C at the end of the survey; in accordance with the Beaufort Scale, wind was described as light breeze.

Weather during the static detector survey (10<sup>th</sup> – 16<sup>th</sup> May 2021) was in line with seasonal norms with no prolonged periods of heavy rain or high winds.

### 3.7 Limitations

There are a number of visible features on the exterior of the main dwelling with potential to support roosting bats, which could not be fully inspected for evidence of bats. During the visual inspection, the roof voids were viewed only from the loft hatches. These limitations were addressed by undertaking two bat emergence surveys and a static detector survey.

Weather during the surveys was in line with seasonal norms; wind during the first emergence survey on 20<sup>th</sup> May 2021 was described as strong breeze, which may have decreased the likelihood of bats emerging, although conditions were warm and dry. The second emergence survey and static detector survey were undertaken in fine weather conditions; weather conditions are not considered to be a significant limitation.

The bat surveys were undertaken in accordance with best practice guidance; however, the results of these surveys represent only a snapshot of use at the time of survey.

The calls of four bat species are notoriously difficult to record: the long-eared bats (*Plecotus spp.*) and the barbastelle bat (*Barbastella barbastellus*) have a quiet echolocation call, and the horseshoe bats (*Rhinolophus hipposideros* & *R. ferrumequinum*) have highly directional calls. The long-eared, barbastelle and horseshoe species can be easily missed during bat detector surveys. Where applicable, we presume all *Plecotus spp.* recordings are those of brown long-eared bat because Cornwall is outside the known range of the grey long-eared bat (*Plecotus austriacus*).



## 4.0 Bat Survey Results

### 4.1 Site Description and Habitat Assessment

The property 'Moorings' is located in Old Grimsby on the eastern coast of the island of Tresco, Isles of Scilly, c. 0.8 km north-east of New Grimsby and c. 5.3 km north-west of Hugh Town (St Marys). The location is coastal in character; the property directly adjoins the beach to the north and east. There are a small number of neighbouring properties to the south and west, with pasture, woodland, open heathland and sand dunes beyond. Great Pool (Tresco) Site of Special Scientific Interest (SSSI) is present c. 0.8 km to the south of the site, and Pentle Bay, Merrick and Round Islands SSSI is present c. 0.35 km south-east of the site. Buildings in the wider area comprise a mixture of period and modern properties. In combination, these features provide potentially important foraging, commuting and roosting habitat for bats.

### 4.1 Visual Assessment Summary

A visual assessment was undertaken on 18<sup>th</sup> March 2021.

The building comprises a detached two-storey dwelling of stone construction, with a single storey extension on the south and west elevations, and a small lean-to (porch) on the south-east elevation (Figs. 2-3). The building features a pitched scantle slate roof which is largely tight with no obvious gaps. There are two chimneys on the main pitched roof, both of block construction and which appear tight, although there are occasional gaps underneath the lead flashing with potential to support crevice-dwelling bats. At the eastern elevation is a porch/ lean-to projection with mono-pitched traditional slate roof. The single-storey extension on the south-east elevation features large glass windows; here the construction and roof appeared tight with no obvious gaps.

The cottage exhibits timber fascias throughout and timber soffits on the northern and southern gable ends of the main part of the house, plastic guttering and downpipes, timber doors and timber framed glazed windows. The newer part of the extension to the south had uPVC doors and windows. Throughout the building there are notable gaps behind the fascias and between the soffits and stonewall, which provide potential roosting opportunities for crevice dwelling bats or potential bat access to the building interior.

Internally the cottage features two roof voids; a narrow roof void above the single-storey kitchen extension on the north-west elevation (void 1; Fig 4) which is accessed from a loft hatch on the ground floor, and a separate larger roof void above the first floor of the main part of the house (void 2; Fig 5). Both voids were viewed only from the loft hatches.

Void 1 is a small, narrow, dark, well-sealed void and features thick insulation blocks lining the mono-pitch roof, with a bitumen membrane beneath (Fig 4). The void was densely cobwebbed. No evidence of roosting bats was found within this void, although it was not possible to fully inspect this area due to access restrictions.

Void 2 is in the apex of the main part of the building with a shallow timber A-frame structure supporting the pitched roof (Fig 5). Within this void there is a thick layer of rolled insulation between the floor joists. The roof is lined with bitumen, which is torn and sagging in places. A light scattering of droppings (c. 20) typical of bat droppings, was noted on the insulation close to the loft hatch. It was not possible to fully inspect this area due to access restrictions.

Overall, Moorings was assessed as being of '**moderate suitability**' for roosting bats.



Figure 2: East elevation of Moorings showing single-storey glazed extension to the south, and small lean-to porch.



Figure 3: West elevation showing single-storey extension wrapping around the west and south elevations.



Figure 4: Interior view of void 1, above the kitchen.

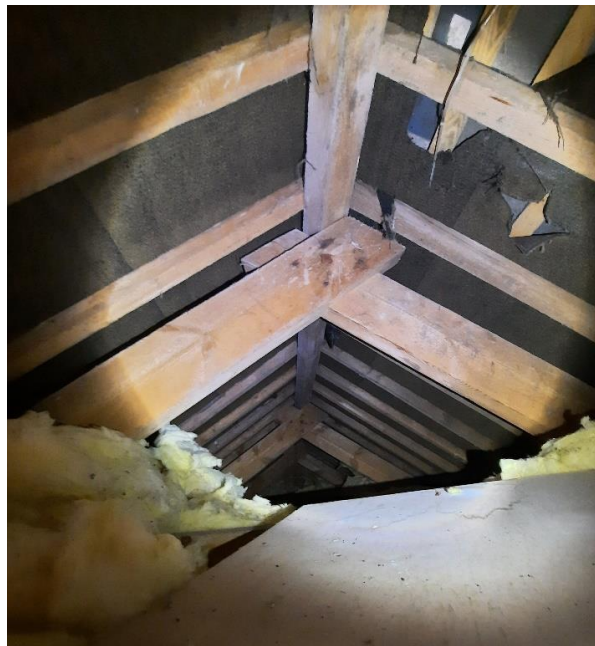


Figure 5: Interior view of void 2, above the first floor.





## **4.2 Emergence Surveys**

No bats were observed to emerge from the building during either of the emergence surveys on 20<sup>th</sup> May and 3<sup>rd</sup> September 2021.

## **4.3 Bat Static Detector Survey**

A static detector survey of the roof void above the first floor (void 2) was undertaken between the nights of 10<sup>th</sup> – 16<sup>th</sup> May 2021. Two common pipistrelle bat calls were recorded on a single occasion during the survey period (12<sup>th</sup> May; see Appendix 1 for full survey results). However, due to the lack of any other evidence of bats roosting within the building, it is considered likely that these calls were recorded from bats flying close to but outside of the building. Common pipistrelle bat calls are comparatively loud and non-directional and common pipistrelle bats were observed foraging and commuting over the building during the emergence surveys.

## **4.4 DNA Analysis**

DNA analysis of a sample of droppings collected from void 2 confirmed that the droppings were deposited by the insectivorous Lesser White-toothed Shrew (*Crocidura suaveolens*), and not by a bat species.

## **4.5 Bat Species Evaluation**

The combined survey results have shown that Moorings is not currently (at the time of the surveys) being used by bats.



## **5.0 Impacts and Mitigation Recommendations**

### **5.1 Evaluation of Development Proposals and Impacts**

The further survey work has shown that the property 'Moorings' is not currently (at the time of the survey) being used by bats. The client proposes to extend the property. The proposed works are unlikely to impact bats due to the likely absence of bats from the building.

### **5.2 Mitigation**

Although bats are not currently, at the time of the surveys, using the building, external features with potential to support bats were identified during the visual assessment. A precautionary approach should be adopted. The building contractors should be made aware that bats can roost unseen within the building structure. If, during works, a bat(s) is uncovered, the bat must not be handled, and works must stop immediately (as soon as it is safe to do so). Advice must be sought from an experienced bat ecologist (Plan for Ecology Ltd: 01326 218839) or Bat Conservation Trust (Tel: 0345 1300 228). See Section 2.3 for relevant legislation.

### **5.3 Opportunities for Biodiversity**

The value of the site for roosting bats post-development could be enhanced by incorporating the following measures:

- A single bat tube or box could be installed within the fabric of the modified building or on the building exterior post-development, on a south or west facing elevation and at least 4m above ground level. Any enhancements installed should not be lit by artificial lighting, either directly or indirectly through light spill. This is in line with the Cornwall Planning for Biodiversity Guide (2018). Suitable products for bats include 1FR & 2FR Schwegler bat tubes, the 1FF Schwegler bat box, 1FE Schwegler Bat Access Panel with or without back plate and bat block. Suitable products are available at <https://www.nhbs.com>, [Bat Boxes \(atroposbooks.co.uk\)](https://www.atroposbooks.co.uk), <https://www.greenandblue.co.uk> and <https://www.wildcare.co.uk/>. Plan for Ecology Ltd can provide more detailed advice upon request.



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## 6.0 References

- BCT (2020) National Bat Monitoring Programme Annual Report 2019. Bat Conservation Trust, London.
- Collins (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition, Bat Conservation Trust, London.
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- Williams C.A. and Cornwall Bat Group (2009) Bats. In CISBFR, Red Data Book for Cornwall and the Isles of Scilly. 2nd Edition. Croceago Press, Praze-an-Beeble.
- Wray S., Wells D., Long E. and Mitchell-Jones T. (2010) Valuing Bats in Ecological Impact Assessment. *In Practice*, 70 (December), pp23-25. Chartered Institute for Ecology and Environmental Management (CIEEM).





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## 7.0 Appendix 1 – Static Detector Survey Results

### Static Detector Survey Results

Date	Time	Species	Number of calls
12/05/2021	21:00	Common pipistrelle bat	2