Chestnut Cottage
Coat, Somerset

Ecological Impact Assessment

July 2023

A report on behalf of Jason House

Ref: 0205-EcIA-MW

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Site Details

Site Name	Chestnut Cottage
Site Location	Coat, Somerset
Central OS Grid Reference	ST 45013 20200
Client	Jason House

Quality Assurance

Report Title	Ecological Impact Assessment
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Appendices

1 INTRODUCTION

This report presents the results of an Ecological Impact Assessment at Chestnut Cottage, Coat, Somerset (central OS grid reference: ST 45013 20200) in relation to a planning application. A location plan is given in **Figure 1**.

It is understood that the proposal is to build a two-storey extension to the property on the southeast (rear) elevation perpendicular to the existing roof and extend the existing upper level to have a vaulted ceiling. This will involve re-roofing, loss of the existing loft space and the demolition of an existing single-storey lean-to which runs the length of the rear elevation.

The survey was commissioned by Jason House via Paul Day Architectural Designs Ltd.

This report details the results of a desk study, buildings inspection, an automated bat detector survey and two bat emergence surveys and aims to:

- Ascertain whether the proposals will affect habitats and protected species.
- Identify key ecological constraints to the proposed development.
- Provide recommendations licensing, mitigation and enhancement opportunities. in accordance with relevant planning policy, legislation and other published guidance.
- To advise the client of their responsibilities regarding ecological issues.
- Enable the local planning authority to make conditions where appropriate.

Recommendations have been detailed following the biodiversity mitigation hierarchy in accordance with National Planning Policy Framework paragraph 175 (a) which states:

"If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused."

This report provides additional measures for enhancements on the Site with the aim of achieving a net-gain for biodiversity, which is in line with National and Local planning policy.

Relevant planning policy and wildlife legislation is provided in **Appendix 1**.

2 METHODS

2.1 Desk Study

An internet search was undertaken to identify statutory sites designated for nature conservation value within a 10km radius for international sites and a 2km radius of the Site boundary for national sites, using the Government's mapping website MAGIC (www.magic.gov.uk). MAGIC was also searched for priority habitats as well as European Protected Species Licences (EPSL) listed within 2km of the Site since 2008.

Due to the minimal impacts posed by the proposed development a data search was not commissioned from the Somerset Environmental Records Centre (SERC) as it was considered unlikely to add significantly to the assessment. All searches were undertaken on the 10th of July 2023.

2.2 Bat Survey

2.2.1 Building Assessment

A survey of the building was undertaken to assess its potential to support roosting bats. A detailed inspection was undertaken on 09 January 2023 by Mark Witherall BSc. (Hons) MCIEEM (Natural England Class 2 bat licence holder No. 2015-12404-CLS-CLS and Bat Mitigation Class Licence (BMCL) registration No. RC154) in accordance with current best practice methodology (Collins, 2016).

This involved an external inspection using binoculars, endoscope, and a high-powered torch where appropriate. A search was made for features which could provide suitable roosting spaces for bats, including gaps beneath roof coverings and flashing, gaps around windows, door frames and pipe work and possible access under eaves, soffits and barge/ fascia boards. A systematic search was made for the presence of bats and evidence such as bat droppings and staining near access points. Internal roof voids and other areas (where appropriate) were also inspected for evidence of bats such as droppings, feeding remains and live or dead bats.

The building was then prescribed a category based on its potential to support roosting bats as detailed in **Table 1.**

Table 1: Bat Roost Potential (as detailed in Collins, 2016)

Suitability	Description of bat roosting potential
Negligible	The building is not considered suitable for bats.
Low	A structure with one or more potential roost sites that could be used on a sporadic or occasional basis for feeding or solitary day roosting.
Moderate	A structure with one or more areas suitable for roosting due to the features size, shelter, protection, conditions and surrounding habitat that could be attractive to bats and potentially support maternity roosts.
High	A structure with many areas suitable for roosting with a larger number of potential access points obviously suitable for use by larger numbers of bats on a more regular basis. These are normally sheltered locations, subject to low variation in temperature.
Roost	Bats and/or evidence of bats found.

2.3 Bat Emergence Surveys

As potential roosting features and evidence of bats was found during the inspection survey, two dusk emergence surveys were conducted on the date detailed in **Table 2**.

Two surveyors were required to get a good view of the potential bat access points and roost features. The surveyor used Wildlife Acoustics Echo Meter Touch 2 Pro ultrasound bat detectors. The dusk surveys commenced 15 minutes before sunset and continued for approximately one and a half hours or until visibility was lost. All surveys were completed during optimal weather conditions of at least 10^{o}C temperature at the start of the survey, dry and with low wind speeds. Guide TrackIR Pro 19 thermal imaging scopes and a Sony FDR-AX33 video recorder with infra-red illuminators were also used during the survey.

Table 2: Emergence survey dates, weather conditions and personnel

Date	Sunset time	Start time	Finish time	Weather	Personnel
15/05/23	20:56	20:30	22:15	Temp. 13-8ºC, 0-5% cloud cover, wind (Beaufort) 0-2 NW	MW/BY
26/06/23	21:29	21:15	22:45	Temp. 17-16ºC, 100% cloud cover, wind (Beaufort) 0-1 W	MW/KW

MW = Mark Witherall BSc. (Hons) MCIEEM. **BY** = Becky Yeo BSc. Kerri Watson BSc. MCIEEM

2.4 DNA Analysis of Bat Droppings

To determine the species possibly roosting in the loft, a sample of bat droppings was collected and sent to Warwick University for analysis.

2.5 Nesting Bird Survey

The building was inspected for evidence of and potential for nesting birds, including barn owl *Tyto alba*.

2.6 Other Protected/ Notable Species

During the survey work described above, the Site and immediate surroundings were assessed for the presence of and potential for other protected, notable, or invasive species which could be affected by proposals.

2.7 Baseline Evaluation and Impact Assessment

Determining the geographical importance of habitats and protected species was undertaken in accordance with CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018). Where uncertainty exists, a precautionary approach has been adopted. In addition to the geographic frames of reference recommended in the CIEEM guidelines, a further category of 'Site Importance' has been included to account for features that are of some value in the context of the Site but are not considered to be of sufficient value to be categorised as 'Local Importance'.

2.8 Survey Limitations

Care has been taken to ensure that balanced advice is provided on the information available and collected during the study period, and within the resources available for the project. However, the possibility of important ecological features being missed due to survey timings, absence during surveys or the year of survey cannot be ruled out. In addition, the lack of evidence or records of protected species on Site does not necessarily preclude their presence from Site.

3 RESULTS

3.1 Desk Study

3.1.1 Protected Sites

There are two statutory sites of **International Importance** for nature conservation within the 10km search area:

- These are the Somerset Levels and Moors Special Protection Area (SPA) and Ramsar site. These are both located approximately 2.3km northwest of the Site at their closest point. Both these designations are primarily designated as they support nationally important numbers of Bewick's

swan *Cygnus columbianus*, golden plover *Pluvialus apricaria*, teal *Anas crecca* and lapwing *Vanellus vanellus* and an internationally important waterfowl assemblage.

There are no statutory nationally important sites for nature conservation within the 2km search area.

3.1.2 Somerset Phosphates Risk Zones

The Site falls within the South Somerset District Risk Zone - River Parrett catchment area. This relates to the effects of phosphate levels on the Somerset Levels and Moors SPA and Ramsar site.

3.1.3 Somerset Bat Consultation Zones

The Site is not within any of the Somerset bat consultation zones.

3.1.4 Granted EPS Licences

There are two granted EPSLs for bats within the 2km search radius:

- Licence No. 2019-43618-EPS-MIT granted to allow the destruction of a resting place for brown-long-eared *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, serotine *Eptesicus serotinus* and soprano pipistrelle *P. pygmaeus* bats. Located approximately 1.3km northeast of the Site.

- Licence No. 2020-50063-EPS-MIT granted to allow the destruction of a resting place for brown-long-eared, common pipistrelle, and serotine bats. Located approximately 1.7km southeast of the Site.

There was one EPSL granted for great crested newt *Triturus cristatus* within the 2km search area:

- Licence No. 2019-40197-EPS-MIT granted to allow damage to a resting place for great crested newts. Located approximately 1.6km northeast of the Site.

3.1.5 Priority Habitats

There are several priority habitats within the 2km search area including:

- Grassland: Coastal and flood plain grazing marsh and good quality semi-improved grassland.

- Woodland: Deciduous woodland and traditional orchards.

3.2 Bat Survey

3.2.1 Building Inspection

The building is a two-storey stone-built cottage with a clay double-Roman tiled roof. Two chimneys were present at each gable end. There is a single-storey lean-to sunroom with an acrylic roof and a double-Roman clay tiled roof extension adjoining on the southeast (rear) elevation. There are timber fascia boards on the front and rear elevations and the gable ends have parapets with no barge boards. There are UPVC windows and doors on the rear elevation and timber-framed windows on the northwest (front) elevations. There is an adjoining annex which is not affected by the proposals.

Internally the loft spaces loft spaces lined with bitumastic roofing felt which was damaged in places. The roof was insulated with fibreglass. Some original timbers were present with new timbers overlaid.

3.2.2 Potential Roost Features and Evidence of Bats

The roof showed recent repair to the ridge tile near the southwest on the rear elevation. The roof tiles were general tight on this elevation, although gaps along the lower edge above the guttering was present. On the front elevation the ridge and roof tiles were tight with no gaps except in two places where raised tiles were present near the northeast chimney and four courses up on the southwest end of the roof.

There were gaps under the fascia boards on the rear elevation and also the half barge on the single-storey lean-to on the northeast elevation. The fascia on the front elevation was tight with the exception of a gap behind at the southwest end.

Internally, inside the loft there were approximately 20 bat droppings present on a board inside the loft. Most of these were old, but a few were considered to be from with the last 1-2 years. By their shape and size these were considered likely to be from a brown long-eared bat.

Given the old evidence, the building was generally considered to be of low-moderate bat roosting potential (Collins, 2016), and as such two emergence surveys were recommended.

Photographs are shown in **Table 3**.

Table 3: Site Photographs (red arrows indicate potential bat roosting features).

Description	Photograph
Southeast (rear) elevation. Suitable feature for bats: Gaps under fascia boards and tile edges.	
Northeast elevation. Suitable feature for bats: Gaps under barge board.	

Description	Photograph
Northwest elevation: Suitable feature for bats: Gaps under raised tiles and under fascia board at southwest end.	
Southwest elevation. Suitable features for bats: None.	
Loft Evidence of bats: Total 20 long-eared type bat droppings.	

Description	Photograph
Loft. Evidence of bats: Total 20 long-eared type bat droppings on board. .	

3.3 Bat Emergence Survey

15th May 2023: A common pipistrelle emerged from under the fascia board on the rear elevation of the cottage at 21:29 (33 minutes after sunset). A long-eared bat emerged from under the raised tiles on the northwest elevation at 21:37 (41 minutes after sunset) (**Table 4**).

Other species record during the survey passing by or flying overhead included a *Nyctalus* species either noctule or Leisler's, soprano pipistrelle and common pipistrelle.

26th June 2023: No bats emerged from the building. A common pipistrelle emerged from under a roof tile on the annex building next door.

Other species recorded passing by or overhead include common pipistrelle, soprano pipistrelle, long-eared, a Myotis species and serotine.

Table 4: Emergence points of bats recorded during the survey of 15th May 2023

Description	Photograph
Common pipistrelle emerged from under fascia board at 21:29.	
Long-eared bat emerged from under raised tiled at 21:37.	

3.4 DNA Analysis of Bat Droppings

The sample sent for analysis was unfortunately lost in transit to the laboratory.

3.5 Nesting Bird Survey

There were house sparrows *Passer domesticus* nesting under the roof tiles on the southeast and northwest elevations.

3.6 Other Protected and Priority Species

No other protected or priority species are likely to be affected by these proposals and therefore are not taken further in this assessment.

3.7 Further Survey Work

No further ecological survey work is considered necessary for this application and the results are considered valid for 12 months; however, any changes to the proposals or if any significant amount of time has passed since the date of this report, a re-appraisal may be required.

4 EVALUATION AND MITIGATION RECOMMENDATIONS

4.1 Designated Sites

No effects to statutory or other designated sites are predicted by this proposed development due to the minor effects of the proposal and the distances involved.

Mitigation: None required.

4.2 Somerset Phosphates Risk Zones

The Site is within the South Somerset District Phosphates - River Parrett catchment Risk Zone. However as there is no proposed increase in the number of residents, a phosphates assessment should not be required, but consultation with the local authority is recommended on this matter.

Mitigation: None required.

4.3 Priority Habitats

No effects to priority habitats are predicted by this proposed development due to the minor effects of the proposal and the distances involved.

Mitigation: None required.

4.4 Bats

One common pipistrelle and a presumed brown long-eared bat were recorded emerging from the building during the first survey, but none emerged during the second survey. It was not considered proportionate or necessary to undertake a third survey, as the likelihood of a finding any larger roost/s was considered very unlikely given the seasonal timing of the first two surveys and the evidence found previously.

The presence of droppings in one place in the loft strongly suggests this was an individual non-breeding long-eared bat roost used on an occasional or seasonal basis. This is most likely to be a brown long-eared bat being one of our most common species and given the high rarity of the other long-eared species, grey long-eared bat. Similarly the common pipistrelle roost was considered to be of a transitory or occasional nature relating to a single non-breeding bat. Both these roosts are considered to be of low conservation status. It is not considered likely that the building used for hibernation as roosing features are quite exposed to fluctuations in external temperatures and not a stable environment for which bats generally require for hibernation purposes.

The bat droppings sampled were lost in transit to the laboratory and the remaining droppings were considered too old to be able to get an identification, therefore a second sample was not able to be sent.

Mitigation: A licence will be required from Natural England before works can commence, as the roosts will be lost and there is a risk of injury or death during works, which would be an offence under current legislation. This Site qualifies to be registered under the Bat Mitigation Class Licence (BMCL) due to the low conservation roost status and low number of species and roosting sites. It also qualifies to be registered under the Bat Earned Recognition (BATER) pilot scheme. The author is registered to use both these licences. Theses licence can only be applied for once planning permission is in place and up to 12 weeks and no later than three weeks in advance of works commencing.

Mitigation requirements under these licences would be two bat boxes, a crevice type for pipistrelles and a cavity type for long-eared bats, which could either be mounted on the building or on nearby mature trees

in the garden. Suitable boxes are given in **Appendix 2**. These would be erected prior to any works taking place. The ecologist would be present to supervise roof stripping and any bats found would be placed inside one of these boxes by the ecologist.

As several species of bats have been recorded flying close to the building, it is recommended that if any additional exterior lighting is used then it should be on a short timer (30 seconds or less), triggered by a motion sensor, with the sensitively set to detect humans, rather than passing wildlife. It should also be low level, directional and downward pointing to avoid causing a barrier to foraging and commuting bats. It is recommended that recessed lighting rather than pendant lighting is used internally as this reduces external light spill. Best practice guidance detailed in Guidance Note 08/18 - Bats and Artificial Lighting in the UK (BCT, ILP, 2018) should be followed when siting lights both on and within buildings.

4.5 Nesting Birds

House sparrows were present nesting under roof tiles of the property. If the roof is stripped while birds are nesting, this risks destroying nests and contents, which would be an offence under current legislation.

Mitigation: Roof stripping work will be undertaken outside the nesting season which is March to August (inclusive). In the event nesting birds are found during works, then works should stop in that area until nesting has finished. Two house sparrow nesting terraces will be provided as compensation for the loss of nesting sites, these will be erected on a nearby outbuilding with a northerly or easterly aspect out of direct sunlight, but not above windows or doors to prevent droppings becoming a nuisance.

5 ENHANCEMENTS

In line with national and local planning policy it is recommended that ecological enhancements are included within the design of the development to ensure a biodiversity gain. Therefore, it is recommended that in addition to the boxes provided as compensation above, a further crevice type bat box and two bird boxes are installed on nearby outbuildings or mature trees (**Appendix 3)**. The bat box should be mounted at eaves height with a southerly aspect (or on a mature tree) and the bird boxes should be mounted with an easterly or northerly aspect out of direct sunlight, but not above windows or doors to prevent droppings becoming a nuisance.

Further advice on the siting and types of boxes is available on request.

6 CONCLUSIONS

In summary, two low conservation status bat roosts were found during surveys, therefore a licence from Natural England will be required before for works to go ahead. Avoidance measures and mitigation measures have been recommended to minimise effects on protected species.

Provided the mitigation measures are carried out, the proposal is considered unlikely to have any significant adverse effects on bats or any other protected species.

Enhancement measures have been recommended with the aim of providing a net biodiversity gain, contributing to the aims of National Planning Policy Framework and local policy and general good practice.

7 REFERENCES

Bat Conservation Trust/ Institute of Lighting Professional (2018) *Guidance Note 08/18 - Bats and Artificial Lighting in the UK.* Bats and the Built Environment Series.

BSI (2013) BS42020: 2013 Biodiversity. Code of practice for planning and development. British Standards Institution, London, UK.

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.* Chartered Institute of Ecology and Environmental Management, Winchester.

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

Mitchell-Jones A.J. (2004) *Bat Mitigation Guidelines.* English Nature, Peterborough.

Figure 1: Location Plan (Copyright Google Earth)

Appendix 1 – Legislation and Planning Policy

Habitat and Species Legislation

Species and habitats receive legal protection in the UK under various legislation, including:

- The Wildlife and Countryside Act (WCA) 1981 (as amended).
- The Conservation of Habitats and Species Regulation 2017 (as amended).
- The Countryside Rights of Way (CRoW) Act 2000.
- The Hedgerows Regulations 1997.
- The Protection of Badgers Act 1992.
- The Natural Environment and Rural Communities (NERC) Act 2006.

Where relevant, this report takes into account the legislative protection afforded to specific habitats and species.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Governments planning policies for England and how local planning authorities should incorporate them into their own policies and plans. Chapter 15 of the NPPF contains several policies targeted at enhancing the natural environment and requires local authorities to consider how impacts on biodiversity can be minimised and provide net gains in biodiversity. Paragraph 170 states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."

Additional Planning Practice Guidance (PPGs) supports the NPPF and includes guidance on:

- Landscape;
- Biodiversity, ecosystems and green infrastructure; and
- Brownfield land, soils and agricultural land.

South Somerset Local Planning Policy

The South Somerset Local Plan 2006 – 2028 sets out the long-term planning framework for the district and includes objectives for providing homes, jobs and services in an environmentally friendly and sustainable way. Of relevance to this report are policies:

- EQ4: Biodiversity;
- EQ5: Green Infrastructure; and,
- EQ6: Woodland and Forests.

Post-2010 Biodiversity Framework

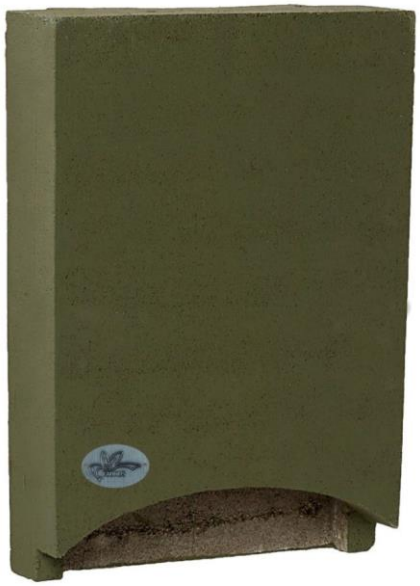
The UK Biodiversity Action Plan (UK BAP) was succeeded in 2012 by the 'UK Post-2010 Biodiversity Framework' which demonstrates a whole-environment strategy on how the UK contributes to achieving the Convention on Biological Diversity's (CBD) 20 Aichi Biodiversity Targets. In England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' (Defra, 2011) sets out the strategic direction for biodiversity policy in the future. The former UK BAP was used to draw up lists of species and habitats of 'principal importance' which continue to be regarded as priorities under the Post-2010 Biodiversity Framework and are identified under Section 41 of the NERC Act 2006; these species have been considered throughout this report.

Wild Somerset Biodiversity Strategy 2008-2018

Wild Somerset biodiversity strategy is a county wide plan covering the period 2008 - 2018, which has been produced by the Somerset Biodiversity Partnership and adopted by the local council. It details how planning authorities should safeguard and seek to enhance biodiversity and includes actions for specific habitats and species.

The Wild Somerset Strategy provides visions and goals for biodiversity conservation by setting out objectives and actions and the key organisations to achieve them. A key objective is to encourage sustainable development through the land use planning system.

Appendix 2 – Mitigation and Biodiversity Enhancements.

Suitable Bat and Bird Boxes for Tree Mounting	Image
The Elisa Bat Box is a suitable crevice type box for wall or tree mounting. Available from Elisa Bat Box | NHBS Practical Conservation Equipment .	
The Improved Cavity Bat Box is suitable for tree mounting. It is available from Improved Cavity Bat Box | NHBS Practical Conservation Equipment or other suppliers.	

Vivaro Woodstone sparrow nest box. Available from Wildcare Vivara Pro WoodStone House Sparrow Nest Box | NHBS Practical Conservation Equipment or other suppliers.	
Vivara Pro Seville Woodstone Nest Box. Available from Search (nhbs.com) and other suppliers.	

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