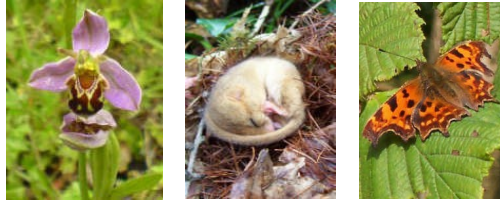


Abbey Sanders Ecology



**Colebrooks, Vention Lane, Lydbrook
Forest of Dean**

Bat Surveys & Ecological Appraisal

2023

For

Leonie & Nick Richardson

Abbey Sanders CEcol CEnv MCIEEM

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LIST OF CONTENTS	Page No.
SUMMARY	4
1.0 INTRODUCTION	6
2.0 SPECIES ECOLOGY, LEGISLATION & POLICY	9
3.0 METHODOLOGY	13
4.0 RESULTS	16
5.0 ASSESSMENT & MITIGATION	30
6.0 REFERENCES	37
APPENDIX A: DETAILED SURVEY RESULTS	38
APPENDIX B: DNA ANALYSIS RESULTS	46

SUMMARY

- The survey site, Colebrooks, Vention Lane, Joys Green, Lydbrook is a rural residential property in the Forest of Dean.
- The owners of Colebrooks are proposing to carry out some improvements to the property which will involve alterations to the front and side elevations (two storey) and a single storey extension to the rear (at which point the property is single storey being on sloping ground). The cottage is detached and close to an adjacent dwelling at part of the west elevation.
- Abbey Sanders Ecology have undertaken an update Preliminary Ecological Appraisal (PEA) including a Preliminary Roost Assessment (PRA) for bats in July 2023, following an initial survey in November 2018, to inform the planning process and proposed works. The surveys and assessment have been carried out in accordance with current best practice guidelines including those issued by the Bat Conservation Trust (BCT) and Chartered Institute for Environmental Management (CIEEM).
- The initial daytime internal and external inspection was carried out by Abbey Sanders in 2018 found the cottage to have moderate potential to support roosting bats due to gaps allowing potential access to bats into crevice spaces. The 2023 assessment found the site to remain similar with moderate potential and a small number of bat droppings (based on characteristic size, appearance and consistency) within a loft area. These droppings were sent for DNA analysis but it was not possible to obtain a species ID.
- A desk study has involved reviewing records obtained from the Gloucestershire Centre for Environmental Records (GCER) as well as obtaining other available records of species and designated sites. This has identified a range of local bat records although none at the site. No designated sites relevant to bats are likely to be affected by the proposals.
- Colebrooks is in an area of high habitat value being immediately adjacent to the open forest to the rear.
- To establish the use or otherwise of the cottage bats, one roost emergence survey and a dawn entry survey were initially carried out during suitable conditions within the main

bat activity season during May and July 2019, in line with best practice following the assessment of the cottage as having moderate bat roost potential.

- A single Brown Long-eared bat was found to be using the roof in 2019 within the external covered area of the first floor balcony shelter at the front of the cottage as a night roost and occasional day roost. A single Soprano Pipistrelle bat was found to be using a gap behind a fascia board on the same front elevation, as an occasional night roost, also in 2019.
- Update surveys at dusk in August and early September 2023 found higher numbers of Brown Long-eared bats with up to 7 to be using different crevice roost areas on the same front elevation as in 2019. No Soprano Pipistrelle roost use was recorded at the site on these occasions although activity by these species suggested a roost nearby, possibly next door.
- **As the proposals will directly affect the roost areas on the north side of the building, a bat development licence (from Natural England) will be required before works to that north side area**, which must follow the relevant method statement. Replacement and additional enhancement bat roosts will be provided in the form of three new oversized woodcrete / woodstone crevice bat boxes, two on the north-west and one on the north-east elevation. Protection measures for nesting birds will also be put in place as a disused Swallow/ House Martin nest was present within the balcony area; a replacement nest feature will be installed with an additional double Sparrow nest as a further biodiversity enhancement.
- **Works to the south (rear) side of the house will not affect bat roost areas and will not require a licence.**
- External lighting will also need to be minimised to avoid significant impacts to bats or other wildlife around the site, which included observations of Lesser Horseshoe bat, a particularly light sensitive species, during the surveys. The north-west site boundary treeline should be retained as a dark corridor with canopy overhanging towards the above bat roost area on the north corner.
- Other features will be protected including an ornamental pond within the gardens of the house and an area of tall grassland with orchid presence north of the house.

1.0 INTRODUCTION

The survey site, Colebrooks, is a residential property in a rural area on Vention Lane, Joys Green, Lydbrook in the Forest of Dean. The site is located at National Grid Reference SO 60558 16806, What3Words location stubborn.physical.icebergs.

The owners plan to improve the property to include a single storey extension to the rear (south-east) where the land is raised so that the property is single storey and level with the upper level of the front of the property. The plans also include smaller scale alterations to the front (north-west) and north-east side elevations cladding. The cottage is detached and close to an adjacent dwelling at part of the west elevation.

The relevant planning application to the local authority will require a ‘preliminary bat roost assessment’ ecology survey to inform the proposed works and the planning decision, together with any necessary follow up ‘Phase 2’ protected species surveys with bats being a particular feature to consider for this type of building and project.



Existing plans – Apex Architecture



Front (north-west elevation) of Colebrooks (2018) with detached adjacent dwelling to the west at right hand side of image.



Rear (south-east) view of Colebrooks where single storey extension is proposed (2023)



Side (north-east) elevation – cladding to be altered (2023)



Front (north-west) elevation of Colebrooks – cladding to be altered (2018)

Abbey Sanders Ecology were appointed to undertake the ecological assessment of Colebrooks in autumn 2018 with follow-up surveys carried out in 2019 and 2023. An initial daytime internal and external inspection of the site was carried out by Abbey Sanders on 5th November 2018, followed by two dusk emergence surveys and a dawn

entry survey, for bats, during May and July 2019. Follow-up surveys in 2023 comprised of a daytime assessment in July and dusk bat surveys in August and early September 2023. Abbey Sanders is a qualified professional consultant ecologist (BSc and MSc degrees), Chartered Ecologist, full Member of the Chartered Institute of Ecology and Environmental Management and Chartered Environmentalist. Abbey Sanders is trained and experienced in ecological surveying with over 20 years' experience, including for bats (NE licence Registration number 2015-12398-CLS-CLS) and has coordinated this survey and report.

The results of the surveys are detailed in **4.0 Results** below.

2.0 SPECIES ECOLOGY, LEGISLATION & POLICY

2.1 Bats

UK bat species are nocturnal, roosting by day and foraging during the night, particularly at dusk and dawn during the main active months, March to October. Summer roost sites include cavities and crevices within buildings or trees with bats relocating to winter roosts to hibernate, during which they can wake and emerge to feed for short periods. Winter roost sites are in more sheltered sites with relatively constant cool temperatures, such as disused mines or caves. When commuting to feeding sites or foraging, bats tend to follow linear features within the landscape such as hedgerows or rivers and feed on insects where these are readily found. Some bats commute through open areas and some feed over open habitat such as water bodies.

All bat species occurring in the UK are afforded full legal protection under the Wildlife and Countryside Act 1981 (as amended) and are included in Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994, amendments to which have been consolidated by the Conservation of Habitats and Species Regulations 2017, which gives them protection under European law. Through this protection it is illegal, among other offences to;

- Capture, kill or injure a bat
- Disturb bats

- Obstruct, damage or destroy the places where they breed or rest

unless a licence has been obtained to do so, for reasons of conservation, scientific research or through development (licences from Natural England). Licences are only granted for these purposes where works are necessary and measures to adequately protect the bats are in place.

A number of species are also listed under Section 74 of the CROW Act 2000 as being species of principal importance for the conservation of biological diversity and many species are also Priority BAP species on the UKBAP (United Kingdom Biodiversity Action Plan).

2.2 Great Crested Newt

The Great Crested Newt is the largest of three native newt species, being approximately twice the size as an adult in comparison, reaching a total length of 110 to 170mm. Whilst breeding in ponds, which are therefore essential to the survival of populations, the majority of the lifecycle is spent in suitable terrestrial areas, including preferably mixed habitats of rough tussocky grassland, scrub, woodland and hedgerow with underground shelters such as rock crevices or mammal burrows also used. Great Crested Newts are usually active on land between mid-February and early November, and egg-laying in ponds is typically between late March and early July although adults can be present in ponds throughout the year. Foraging for invertebrate prey including earthworms, insects, spiders and slugs, takes place mainly at night.

Great Crested Newts are protected under the Wildlife and Countryside Act, 1981, as amended, and are a European Protected Species through inclusion in Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994, amendments to which have been consolidated by the Conservation of Habitats and Species Regulations 2017 (as amended). Through this protection it is illegal, among other offences to;

- Capture, kill or injure a Great Crested Newt
- Disturb Great Crested Newts
- Obstruct, damage or destroy the places where they breed or rest

unless a licence has been obtained to do so, for reasons of conservation, scientific research or through development (licences from Natural England). Licences are only granted for these purposes where works are necessary and measures to adequately protect the Great Crested Newts are in place.

2.3 Other amphibian species inhabiting similar areas to Great Crested Newts

include the two other native newt species; Palmate Newt *Triturus helveticus* and Smooth Newt *Triturus vulgaris* as well as Common Frog *Rana temporaria* and Common Toad *Bufo bufo*. These more common species are widespread across England and Wales and have some protection against sale etc. under the Wildlife and Countryside Act 1981, as amended.

2.4 Reptiles

Species of reptile which may be expected to potentially occur in the wider area include four species of reptile; common or viviparous lizard *Lacerta vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus*. From the habitats present on site it is considered that slow-worm and possibly common lizard would be the most likely to occur within the site, although the site is quite exposed and isolated from surrounding similar habitats reducing the likelihood of their presence. All of these reptile species are afforded some protection, including against killing or injury, under the Wildlife and Countryside Act (1981, as amended). Reptiles are active during the summer months, emerging from hibernation from April to breed in the spring and early summer before returning to hibernation from around October. grass snakes are often found in association with water due to their preference for amphibian prey. Reptile species, including notably adders, often hibernate together and mate on emergence before migrating potentially several hundred metres to habitat where they will spend the rest of the summer. Reptiles require shelter and foraging habitat during the summer months and hibernate in well sheltered areas offering relatively constant temperatures, such as log or rock piles, stone walls, or underground cavities such as around tree roots.

2.5 Nesting Birds

The main bird breeding season is between March and August inclusive although breeding activity can also often take place in February and September. Whilst the specific requirements of different bird species are varied, any buildings and areas of vegetative cover including trees, hedgerow, scrub and tussocky grassland can provide potential nesting areas for birds. Under the Wildlife and Countryside Act, 1981, as amended, it is an offence to kill injure or take any wild bird, to take, damage or destroy the nest of a bird whilst it is being built or in use and to take or destroy eggs, or to possess or control a bird or eggs (unless done so legally). Some species have further protection including Barn Owls *Tyto alba* which are also listed on Schedule 1 the Wildlife and Countryside Act, which gives them further special protection.

2.6 Planning Policy

The **National Planning Policy Framework (February 2019)** states in Section 15. Conserving and Enhancing the Natural Environment, paragraph 170. *Planning policies and decisions should contribute to and enhance the natural and local environment by;.....*

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. Paragraph 174 states that ‘to protect and enhance biodiversity and geodiversity, plans should a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them; an areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

Paragraph 175 states that ‘when determining planning applications, local planning authorities should apply the following principles: a) 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;’ ...

Section 6.4 of the **Forest of Dean District Council’s Core Strategy (February 2012)** states that; *‘The Forest of Dean has a large number and variety of protected sites and landscapes. They include areas protected by European and national legislation and development within them is strictly controlled. Examples include the Special Areas of Conservation, Ancient Monuments and Sites of Special Scientific Interest. There are also locally protected Key Wildlife Sites and other areas of local interest. In addition it is essential to take proper account of the need to safeguard certain protected species which may be present throughout the district. As a general principle development in these areas or development which adversely affects protected species is very unlikely to be permitted. Semi natural habitats such as ancient woodland will be protected from development. Enhancement will be sought either independently or as a part of new development. Combinations of sites forming larger general areas are of greater importance in nature conservation and it is therefore important to assess the impact of proposals on the wider area using such considerations as the Gloucestershire Nature Map. All protected areas and others can form part of particularly important networks of ‘green infrastructure’. This can be multi-functional so for example recreational routes can be useful wildlife corridors.’*

3.0 METHODOLOGY

The following methodology for bat surveys was followed, in accordance with current best practice including the BCT Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition, 2016) current at the time of the surveys and assessment;

- **Desk study** - An assessment of habitats at and around the site was made from maps and aerial photographs. A data search was conducted through the Gloucestershire Centre for Environmental Records (GCER) for records of bat species and national/ international designated sites within approximately 2km of

the site and locally designated sites within 500m. A search for protected sites designated specifically for bats was extended to 10km. A search of the NatureSpace Great Crested Newt Risk maps was also undertaken.

- **An internal and external inspection of the building** was undertaken by licensed bat worker and ecologist Abbey Sanders during daylight hours on 5th November 2018, during which conditions were dry, still, bright and cool. A repeat assessment visit was undertaken on 14th July 2023 in mild conditions with light rain. On both occasions, a search of the property was made, with the use of high-power binoculars and a torch, for evidence of bats including;
 - The chattering noise of bats
 - The presence of droppings at entrances or beneath potential perching sites
 - Signs of oil staining from bat fur or urine stains around the edge of potential roost entrances
 - Feeding remains such as insect wings below potential perching sites.

An assessment of the potential for the building and surrounding area to support roosting bats was also undertaken. This identifies areas where bats may be able to access and use areas of the building for roosting in accordance with the best practice guidelines. The building is then given a score of ‘negligible’, ‘low’, ‘moderate’ or high bat roost potential which then determines whether further surveys at dusk and dawn are required and how many of these are needed where there is greater than ‘negligible’ potential. In this case the building was considered to have moderate potential and therefore two further survey visits were required as detailed below.

- **A dusk roost emergence survey and a dawn entry survey** of the building were undertaken, in May and July 2019 by Abbey Sanders (NE Licence Number 2015-12398-CLS-CLS) assisted by Lee Jenkins on the first visit (dusk) and by Rebecca Sheahan-East assisted by Lee Jenkins on the second visit.
- **Two dusk roost emergence surveys were undertaken in August and early September 2023**, by Abbey Sanders, assisted by Rebecca Cook on the first survey and Lee Jenkins on the second and by a third surveyor, Dan Westbury, on both occasions. The third surveyor was included in 2023 due to the varied locations of

both proposed works and potential impacts compared to 2019, as well as the presence of Brown long-eared bats, a species that often needs to be very close to be picked up by a bat detector.

Abbey Sanders is a full member of CIEEM, a Chartered Ecologist and Chartered Environmentalist and has over 20 years' experience in bat surveying, Rebecca Sheahan-East also had over 15 years' experience of bat surveys and is licensed for bat surveys in Wales. Lee Jenkins has several years' experience carrying out bat surveys and is licensed for bat surveys in England. Rebecca Cook and Dan Westbury each have several years' experience as assistant surveyors. During the surveys Abbey used a Batbox Duet frequency division/ heterodyne detector and EM3+ or Echo Meter Touch Pro detector/recorder whilst, Rebecca Sheahan-East used an EM3+. Lee used an Echo Meter Touch in 2019 and an Anabat Scout in 2023. Dan used an and EM3+ or Echo Meter Touch Pro detector/recorder.

Species identification was aided by recording of frequency division call recordings for in field and/ or later analysis and by direct observation of bat flight patterns and habitat use. Any bats observed flying or calling were recorded during the survey. During each survey, the surveyors were located around the site, one at the front, south-west of the chapel and one to the rear, north-east of the chapel), in order to observe all relevant areas. Any evidence of other protected species observed was also recorded during the surveys.

Details of the bat emergence surveys were as follows;

TABLE 1: Survey Dates and Conditions

Date	Sunrise/ Sunset Time		Start/ End Times	Temperature	Weather Conditions
23.05.19	21.14hrs (sunset)		20.55 – 22.45hrs	13°C approx. at sunset.	Dry, still and clear
05.07.19	04.59hrs (sunrise)		03.29 – 05.14hrs	17°C approx. at start	Dry, still
08.08.23	20.48hrs (sunset)		20.33 – 22.18hrs	17°C approx. at start	Dry, still, overcast,

				following earlier rain
07.09.23	19.45hrs (sunset)	19.30-21.15hrs	25°C approx. at start	Very warm during heatwave, dry and still

The results are described in **4.0 Results** below.

4.0 RESULTS

4.1 Data search and desk study

A data search was conducted through the Gloucestershire Centre for Environmental Records (GCER) for records of bats and national/ international designated sites within 2km. A search for locally designated sites within 500m was included with the search for sites designated for bats specifically extended to 10km.

Bat species within approximately 2km of Colebrooks (GCER)

Common Pipistrelle *Pipistrelle pipistrellus* including maternity and hibernation roosts

Soprano Pipistrelle *Pipistrellus pgmaeus* including roost

Lesser Horseshoe *Rhinolophus hipposideros* several roosts including maternity and summer roosts, hibernation roost.

Greater Horseshoe *Rhinolophus ferrumequinum* hibernation roost

Myotis *Myotis* record

Brown Long-eared bat *Plecotus auritus* roost

Noctule *Nyctalus noctula* roost and *Nyctalus* record

Designated sites for bats within the 10km search area

Wye Valley and Forest of Dean Bat Sites SAC

The Wye Valley and Forest of Dean Bat Sites SAC encompasses thirteen SSSIs on the Monmouthshire/Gloucestershire border. The sites that make up the SAC are diverse, including woodland areas, buildings, caves and disused mines. They are designated primarily due to their importance for breeding or hibernation of lesser horseshoe bats (*Rhinolophus hipposideros*) and greater horseshoe bats (*Rhinolophus ferrumequinum*). Together the sites support around 26% of the national population of lesser horseshoe bats, and around 6% of the national population of greater horseshoe bats. Of the **component SSSIs**, the following are within 10km of the site:

- **Blaisdon Hall SSSI** (*approximately 9km from site*) - a nationally significant breeding site for Lesser Horseshoe bats thought to support one fifth of the breeding population of Gloucestershire. The hall is also used by other bat species, including Pipistrelle bats and Brown Long-eared bats.
- **Dean Hall Coach House and Cellar SSSI** (*approximately 8km away*) - Dean Hall is a breeding site for Greater Horseshoe bats, one of less than a dozen known breeding roosts for this species in the UK
- **Westbury Brook Ironstone Mine SSSI** (*approximately 3km*) - Both important bat hibernation locations for Lesser and Greater Horseshoe bats
- **Wigpool Ironstone Mine SSSI** (*approximately 5km*) – hibernation site for both Horseshoe species.

Great Crested Newt Risk Map

The ‘NatureSpace’ map for the Forest of Dean is available at low resolution online ([Impact Maps - NatureSpace Partnership \(naturespaceuk.com\)](https://www.naturespaceuk.com)).

The site is shown as being within an area of patchwork risk zones, it appears to be within a Green area (moderate habitat suitability, great crested newt may be present), close to an Amber area (suitable habitat, great crested newts are likely to be present).

Locally identified sites within 500m

Ferry Wood KWS (Key Wildlife Site) – ancient semi-natural woodland

Glasp Farm KWS – Semi-natural grassland with vascular plant interest

4.2 Internal and external inspection of the building

Setting

The building is a detached cottage with later extensions, set on the edge of its own grounds in a rural area surrounded by small fields and woodland on the upper Wye Valley edge. The cottage is single storey to the rear or south-east and, being on sloping ground, two storey to the front or north-west, bordering the adjacent footpath and Vention Lane beyond.

Internal inspection

The house has several loft areas, these are largely connected internally with a maximum height of 0.5m or less. The lofts are generally well insulated with low level storage use. The small size meant that the lofts were not entered although multiple loft hatches enabled a good search to be made, with the aid of binoculars and high powered torch, from the access hatches. All 5 roof voids, are all lined with plywood and some polystyrene sheets, no obvious gaps to outside (except some very small ones with filtered daylight and some felt or other covering over them so not 'open' gaps). The central 'front' gable apex has a balcony externally and is open into the apex of the roof internally with no loft in this area. There is also a small enclosed cellar storage area off the side elevation of the house.

No signs of bat use were identified internally in 2019. In 2023 a small loose group of approximately 5 **droppings typical of bats** in appearance and composition, was observed close to the centre of the loft over 'bedroom 2' in the north-west corner of the building. These droppings were considered characteristic of Brown Long-eared bat and were sent for DNA analysis, however no result was possible from the analysis (see **Appendix B**).



Inside central front gable balcony area – open to roof apex – 2023



Loft view over north-east corner (2023)



Loft view over south part of house (2023)



Inside cellar store room (2023)

External Inspection

The house generally has limited bat roost potential being rendered or having tight moulded concrete cladding with no gaps. A couple of gaps at the edge in the dark, shaded north-east corner with dense cobwebs the roof is in good 'tight' condition. There are small running gaps at the gable ends over plastic bargeboards and below the end row of slates. There were no notable gaps on the underside of the (plastic) bargeboards or fascias although small gaps were noted above the bargeboards/ fascias and below the gable end rows of roof tiles. The ridge is generally tight with a couple of small gaps possibly extending under the ridge. Chimney lead flashing was noted to be tight. The 2023 survey results were similar to the 2018 results although a small gap was noted in 2023 at the south-west corner, north-west facing elevation, close to the western gable apex that corresponded to the internal loft where droppings were found. This gap may have opened up within the 5 years since the original survey.



Cottage viewed from south (2018)



South-west gable end (2023)



Tight fascia on front south-east elevation (2018)



Front viewed from east (2018)



North-east side gable end (2018)



Under side of north-east gable (2018)



Front north-west elevation viewed from north and showing outside of balcony area (2018)



Cladding within balcony showing gaps beneath timbers (2018)

Nesting birds: a Swallow *Hirundo rustica* nest was observed within the sheltered floor balcony on the front elevation in 2018.



Swallow nest within covered balcony area (2018)



Small gap to loft noted in cladding below bargeboard over centre of window on south-east front gable (2023)

Gardens and wider site

A **garden pond** is located within 30m approx. of the house, to the south-west, within ornamental gardens. The pond was lined with marginal stones and a lack of marginal vegetation, being shaded by overhanging trees and small in size (2m x 2m approx).

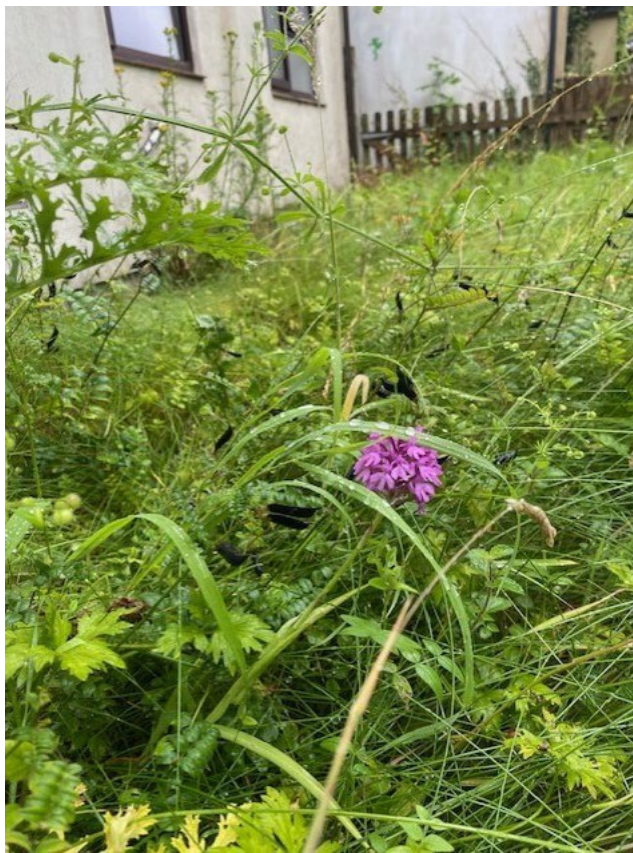
The gardens are roamed by free range chickens (present during both sets of surveys).

To the immediate front (north-west elevation) of the western part of the cottage a small fenced area of tall grassland contained a range of herbs and Pyramidal Orchid *Anacamptis pyramidalis*.

Areas of wall, rough grassland and hedgerow/ scrub have potential to support reptiles, nesting birds, hedgehogs and Dormice although the impacts to these, except the grassland where reptiles and terrestrial phase amphibians could be present, will be minimal through the proposals.



Garden pond to south-west of cottage (2023)



Orchid in small meadow area to north of cottage (2023)

4.3 Emergence/ re-entry surveys

Bat use of cottage

During the 2019 dusk and dawn surveys, two bat roosts were identified on the front (north-west) elevation of the cottage;

- A **single Brown Long-eared bat** using the sheltered porch area over the first floor balcony as a night roost and occasional day roost; the exact roost location is likely to be above underside facing roof timber or behind timber cladding at the top of this area – central gable end on front north-west elevation.
- A **single Soprano Pipistrelle bat** using a crevice behind a fascia board to the south-west of the balcony.

A wide range of bat species were recorded **foraging and commuting** through the area, in addition to those recorded roosting, Common Pipistrelle, Noctule, Lesser Horseshoe, Myotis sp(p), and likely Serotine and Barbastelle.

During the 2023 dusk surveys,

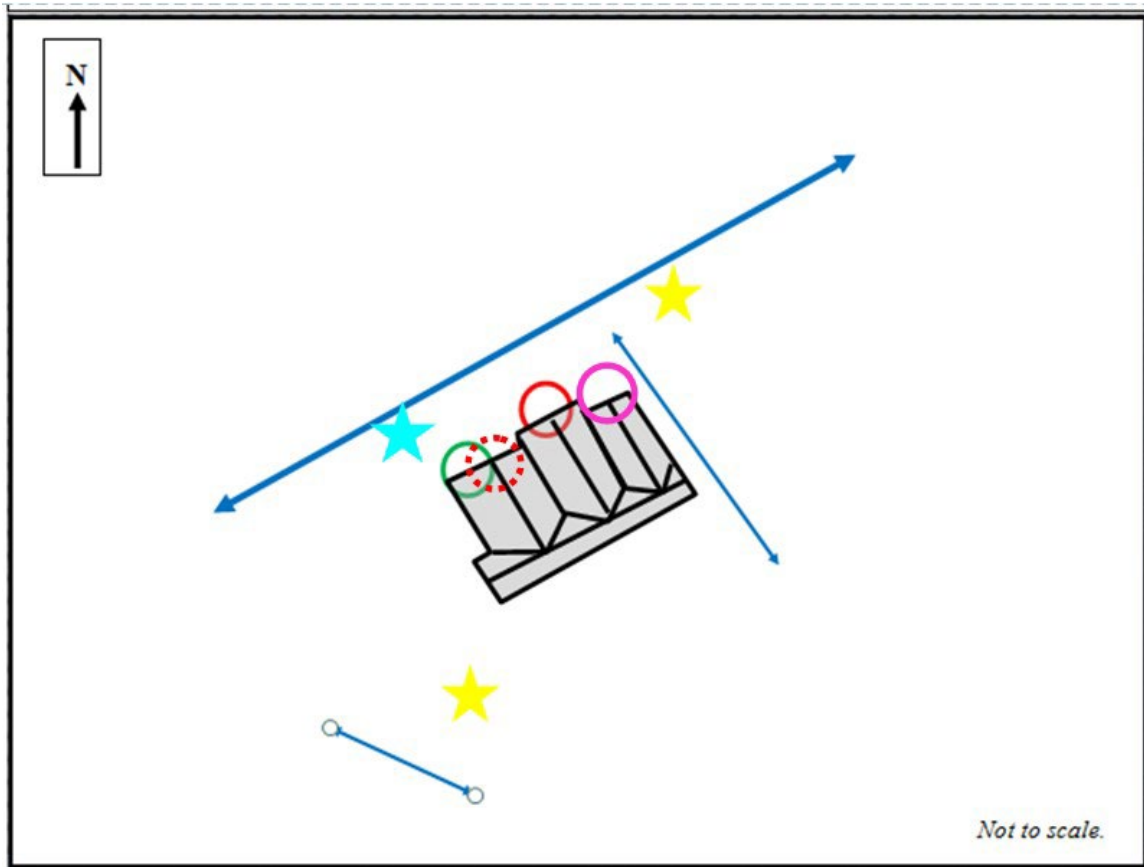
- A total of **7 Brown Long-eared bats** emerged from a gap at the apex of the north end gable apex on the front, north-west facing elevation on the first survey in August. A single bat of this species emerged at the same location during the September survey.

No other emergences or entries were observed.








Foraging and commuting activity was dominated by Soprano Pipistrelle bats with observations indicating a potential roost of this species within the adjacent dwelling to the west. Noctules were the next most frequently recorded species with Brown Long-eared, Lesser Horseshoe, Common Pipistrelle, myotis species, likely Serotine and Barbastelle also recorded, similarly to the 2019 results.

No further evidence of nesting birds or other protected species use of the site was identified during these surveys.

FIGURE 1: Summary of survey results:



KEY:

-  Surveyor location
 -  Additional surveyor location 2023
 -  Bat roost location Brown Long-eared
 -  Bat roost location Soprano Pipistrelle
 -  Bat roost location Brown Long-eared colony 2023
 -  Bat roost loft access Brown Long-eared 2023
-  Arrows indicate main bat flight paths

Refer to detailed activity survey results at **Appendix A**.

5.0 ASSESSMENT & MITIGATION

The proposed works are as follows;

1. **A new single storey rear extension incorporating a conservatory / green room with large glazed areas, on the southern side of the house, this will be single storey and tying into the existing roof below ridge level.**
2. **Removing areas of the cladding on the side and front / northern facing elevations of the house and replacing this with alternative cladding and / or render.**
3. **Internal alterations, not affecting the roof voids.**

Proposals drawings (Apex Architecture);





Bat survey results - Colebrooks has been found to support an area of a small maternity, satellite or transitory roost of Brown Long-eared bats as well as two areas of individual day roosting bats of the same species and another of Soprano Pipistrelle bat species, these are likely to be males or non-breeding females and not connected with any designated sites. The locations of these are;

1. **A Brown Long-eared bat individual day roosting (red solid circle on survey results plan)** within a crevice in the balcony shelter at the centre gable of the northern elevation, possibly in the wooden cladding or within the gaps within timbers in the underside of the roof here – this area is not expected to be affected by proposed works.
2. **A Soprano Pipistrelle individual day roosting (green solid circle on survey results plan)** behind the fascia on the same northern elevation as the balcony, several meters to the west of the balcony, at the south-west end – likely to be affected by cladding alteration works.

3. **A Brown Long-eared small maternity / satellite or transitory roost of up to 7 bats (pink solid circle on survey results plan)** also on the northern elevation at the north-east end - –likely to be affected by cladding alteration works.
4. **A Brown Long-eared bat individual day roosting (red dashed circle on survey results plan)** on a single or low number of occasions, inside the loft at the north-west corner, accessed via a gap in cladding on the south-western gable of the northern elevation (identified through characteristic droppings through the experience of the surveyor, which were sent for DNA testing but this was inconclusive) – likely to be affected by cladding alteration works.

These species are relatively common amongst bats and therefore of lower conservation significance, although the larger roost is of higher value (low to moderate). A single bat does not need access to a roof void so the loft use may be incidental to and potentially replaced with a crevice roost as acceptable mitigation.

A high range of bat species were recorded in and around the site foraging and commuting, including Lesser Horseshoe and possible Barbastelle which are of higher conservation value.

Evidence of **nesting birds** was found in the form of a Swallow / House Martin nest in November 2018 on the balcony shelter, this is not likely to be affected during works and the opportunity for Swallows to return to nest here in the future will remain following works.

Other species and habitats - The garden pond is likely to have potential to support more common species of amphibians although is expected to be of lower value to Great Crested Newts. The pond and surrounding ornamental gardens are not due to be affected by the proposed works although the wider site may support protected species including reptiles and Hedgehogs. The hedgerow / tree line bordering the north of the site is of value to foraging and commuting bats and provides near touching cover to the larger Brown Long-eared bat roost which is likely to be significant. This is also likely to be used by other species including Dormice. The small area of tall grassland adjacent to the immediate north of the building is of some site level value and likely to provide habitat for butterflies and other invertebrates.

It will therefore be necessary to put in place **bat mitigation measures** during the works, to
Colebrooks, Lydbrook, Forest of Dean
Bat Surveys & Ecology Assessment 2023

include suitable working methods and replacement roost provision to be put in place under a **bat development licence** which must be obtained in advance of works and following consents being in place.

Precautionary working methods for other species must also be put in place.

External lighting will need to be limited to avoid spill onto bat flight areas, including the **northern hedgerow corridor** in particular, which should be maintained, including the canopy overhang to the north-east corner. The **tall grassland habitat** north of the cottage should also be retained.

In order to adequately protect bats and nesting birds during the proposed works and in the longer term, the following **ecological protection, mitigation and enhancement measures** will be put in place;

- **Timing of works and licensing** – due to the presence of a possible maternity roost of brown long-eared bats, works to the building will require timing restrictions so that **works to the north corner gable end in particular must take place between October and April inclusive, to avoid the most sensitive breeding season**. It is advised that all works to the north-west elevation also follow this timing, due to the varied apparent roost locations of lower numbers over time that may be association with this potential breeding colony. Extension works to the south elevation do not require timing restrictions. Timing works to September to February would avoid nesting birds being present; if works take place during the March to August period the area will be checked in advance for nesting birds and works will only take place once any nesting birds have left the nest of their own accord.
- **A bat development licence will be obtained before works to the north elevation commence**. A licence will not be required for works to the south elevation as all bat roosting activity has been recorded on the higher, dark, gable ends on the north elevation.
- **At the start of any works phase, an induction or ‘tool-box talk’** will be provided to construction/clearance workers by a suitably qualified ecologist appointed to oversee works. This will include details to be taken to protect bats, and other protected species during works to include their legislative protection,

appearance, potential habitat on site and the procedure to be followed should any of these species be found during works.

- A **suitably qualified ecologist** will attend site to inspect bat roost areas immediately before work impacting on these areas begins.
- The **ecologist** will directly oversee the removal of high risk areas of the roof, including the cladding, bargeboards, adjacent roof tiles and any repairs or sealing of gaps in this area.
- Should any **bats** be found during works, works will stop and the ecologist will be contacted for advice before works to the relevant area recommence. If necessary, the ecologist will remove the bat by hand and place it in a suitable container to recover and released when their health and weather conditions are suitable. A **bat box** will be available on site during the works for this purpose.
- Should any **nesting birds** be found during works, works to the relevant area will need to be delayed until the young birds have left the nest, as nesting birds are protected under the Wildlife and Countryside Act, 1981 (as amended).
- The tree line at the northern site boundary will be retained together with the overhanging vegetation towards the north corner gable, this area must also remain at existing artificial lighting levels or lower.
- **Bat roost replacement provision and additional roosting opportunities to provide biodiversity enhancement, will be put in place as detailed below (or similar alternatives agreed with an ecologist);**

Mitigation:

Replacement bat roost provision – 3 x bat boxes

Replacement nesting bird provision – 1 x swallow nest cup

Retention of hedgerow and tall grassland north of house

Enhancement:

Oversized double chamber bat boxes x 2

Double sparrow nest terrace



FRONT ELEVATION - North West - Scale 1:100



SIDE ELEVATION - South West - Scale 1:100



REAR ELEVATION - South East - Scale 1:100



SIDE ELEVATION - North East - Scale 1:100

Bat and bird provision – base plan by Apex Architecture

KEY:



Swallow nest cup—Vivara Pro woodstone



Sparrow double nest terrace—Vivara Pro woodstone



Bat double chamber box—Lela wood concrete



Bat single chamber box—Elisa wood concrete



- A **lighting strategy** shall be provided (this can potentially be as a planning condition) to demonstrate that dark habitat corridors will be retained around the site for wildlife including bats.

Lifetime of the ecology survey and report: It should be noted that, whilst it is understood that the planning application and proposed works are due to take place in the near future, ecology surveys are generally considered up to date for a maximum of one and a half to 2 years, so if there is any significant delay it is recommended that update advice is sought from an ecologist before commencing.

6.0 REFERENCES

BCT '**Bat Surveys for Professional Ecologists; Good Practice Guidelines – 3rd Edition**' 2016, Bat Conservation Trust *Current at the time of survey*

CIEEM '**Guidelines for Ecological Impact Assessment**' V1.2 April 2022

CIEEM '**Guidelines for Preliminary Ecological Appraisal**' 2nd Edition, December 2017

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Mitchell-Jones, A.J. '**Bat Mitigation Guidelines**' English Nature (now Natural England) 2004.

Mitchell-Jones, A. J. & McLeish, A. P. (Eds.) '**Bat Workers' Manual**' Joint Nature Conservation Committee (JNCC) 2004.

Newton, J., Thackray, C. and Nicholson, B. '**Working With Wildlife Site Guide**' CIRIA 2005

Richardson, P. '**Bats**' British Natural History Series, Whittet Books, 2000

Russ, J. '**British Bat Calls: A Guide to Species Identification**' 2012

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APPENDIX A: DETAILED ACTIVITY SURVEY RESULTS

28th May 2019 (Dusk survey)

Surveyor to north-east of cottage (AS);

Ref.	Time	Species	Observation
1	21.02	Tawny Owl	To south, distant
2	21.28	Noctule	HNS (Heard Not Seen)
3	21.30	Soprano Pipistrelle	From north over hedgerow foraging in circles in front of the house, briefly joined by a second
4	21.31	Noctule Soprano Pipistrelle	HNS Still foraging
5	21.34	Noctule	HNS
6	21.35	Long-eared bat?	Very quiet bat emerged from inside the top of the shelter over the balcony
7	21.36	Noctule	Foraging overhead
8	21.37	Soprano Pipistrelle	2 bats foraging together above briefly
9	21.44	Soprano Pipistrelle	Foraging in front of house and over neighbours garden
10	21.47	Noctule	Flying high over house foraging, to south-west
11	21.49	Tawny Owl	Calling in distant
12	21.57	Common Pipistrelle Tawny Owl	Faint call, passing low over roof heading north Calling from north and south
13	22.02	Soprano Pipistrelle	Pass from east, foraging
14	22.03	Lesser Horseshoe	Pass low from east
15	22.06	Lesser Horseshoe	Pass in front of house then up side of house to south
16	22.13	Common Pipistrelle	Foraging HNS
17	22.15	Lesser Horseshoe	Pass, HNS
18	22.17	Noctule	HNS

Surveyor to south-west of cottage (LJ);

Ref.	Time	Species	Observation
1	21.26	Noctule	HNS
2	21.35	Common Pipistrelle	Fly by from west to east then west again
3	21.37	Soprano Pipistrelle	2 bats from west with social calls
4	21.44	Soprano Pipistrelle	Foraging, west to east
5	21.51	Soprano Pipistrelle	HNS

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6	21.55	Serotine?	HNS
7	21.56,	Soprano Pipistrelle	Foraging

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		22.02, 22.07, 22.08		
		22.08	Common Pipistrelle	Foraging
		22.12	Lesser Horseshoe	HNS
		22.16	Common Pipistrelle	Foraging

5th July 2019 (Dawn survey)

Surveyor to north-east of cottage (RSE);

Ref.	Time	Species	Observation
1	03.45	Soprano Pipistrelle	HNS, distant
2	03.50	Brown Long-eared?	Faint call
3	03.52	Brown Long-eared?	Entered roost inside porch over balcony
4	03.56	Brown Long-eared?	May have left over roof (low light levels)
5	03.59	Common Pipistrelle	Over house
6	04.00	Noctule	HNS
7	04.04	Soprano Pipistrelle	Foraging
8	04.07	Brown Long-eared?	Entered roost inside porch over balcony
9	04.08	Brown Long-eared?	Emerged again and started foraging
10	04.16	Common Pipistrelle	Foraging briefly
11	04.18	Noctule	HNS
12	04.18, 04.21, 04.22	Soprano Pipistrelle	Foraging over hedgerow and house
13	04.23	Noctule	HNS
14	04.24	Soprano Pipistrelle	Entered roost under bargeboard after lots of foraging, circling and mock landing.
15	04.34	Noctule	HNS then seen foraging high over trees
16	04.40	Noctule	HNS distant
17	04.49	Soprano Pipistrelle	HNS distant

Surveyor to south-west of cottage (LJ);

Ref.	Time	Species	Observation
1	03.34	Soprano Pipistrelle	HNS
2	03.40	Lesser Horseshoe	HNS close (sounds like in tree behind)
3	03.44	Soprano Pipistrelle	HNS distant
4	03.51	Barbastelle?	HNS
5	03.53	Noctule	HNS
6	03.54	Soprano Pipistrelle	HNS Foraging
7	03.54	Myotis	HNS
8	03.57	Brown Long-eared	HNS
9	03.59	Common Pipistrelle	HNS

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10	03.59	Noctule	HNS
11	04.05	Soprano Pipistrelle	Foraging

12	04.05 04.18	Noctule	HNS
13	04.21	Soprano Pipistrelle	HNS

8th August 2023 (Dusk survey)

Surveyor to north-east of cottage (AS);

Ref.	Time	Species	Observation
1	20.56	Silent bat – likely Brown Long-eared	Emerged from NE gable end flew to immediately adjacent trees
2	21.00, 02	2 x Silent bat – likely Brown Long-eared	Emerged from NE gable end flew to immediately adjacent trees
3	21.04 - 06	3 x silent bats – likely Brown Long-eared	Emerged from NE gable end flew to immediately adjacent trees
4	21.08	Silent bat – likely Brown Long-eared	Emerged from NE gable end flew to immediately adjacent trees
5	21.15	Silent bat – likely Brown Long-eared	Pass to south along side of building
6	21.21	Lesser Horseshoe	Pass close to north
7	21.29	Lesser Horseshoe	HNS
8	21.31	Common Pipistrelle	Foraging over house roof
9	21.33	Serotine	HNS
10	21.34	Common Pipistrelle	HNS
11	21.39, 48	Soprano Pipistrelle	HNS
12	21.49	Noctule	HNS
13	21.51	Soprano Pipistrelle	HNS close, foraging
14	21.53	Lesser Horseshoe	Along hedge to SW
15	22.07	Pipistrelle species	HNS faint

Surveyor to north-west of cottage (RC);

Ref.	Time	Species	Observation
1	21.00	Silent bat – likely Brown Long-eared	Pass from north gable end to south-west possible emergence?
2	21.02	Silent bat – likely Brown Long-eared	Emerged from gap between top of barge board and tiles over – north gable end as above
3	21.04 - 06	Silent bat – likely Brown Long-eared	Emerged as above
4	21.17	Brown Long-eared	Pass HNS
5	21.20	Unidentified bat	Faint call, HNS
6	21.24	Unidentified bat – Brown Long-eared?	Faint call, HNS
7	21.28	Brown Long-eared	Flew to balcony area, circled around then away to north
8	21.31	Brown Long-eared	HNS
9	21.33	Common Pipistrelle	By roof top, north-east corner
10	21.37, 39, 44	Common Pipistrelle	HNS
11	21.50, 55, 22.00	Brown Long-eared	Close pass, HNS
12	22.04	Pipistrelle?	Brief pass
13	22.08	Noctule	HNS

Surveyor to south-west of cottage (DW);

Ref.	Time	Species	Observation
1	21.24	Brown Long-eared	Pass north-west, over roof
2	21.24 onwards	Soprano Pipistrelle	Occasional passes, foraging / commuting

7th September 2023 (Dusk survey)

Surveyor to north-east of cottage (AS);

Ref.	Time	Species	Observation
1	19.54	Silent bat, likely Brown Long-eared	Emerged from NE gable end flew to immediately adjacent trees
2	20.10	Tawny Owl	Calling to NW
3	20.12	Brown Long-eared	From NE, low circling then away to NE
4	20.13, 15	Pipistrelle species	HNS by hedge
5	20.18	Pipistrelle species	In hedge / treeline canopy then over roof to S
6	20.33	Tawny Owl	Pass to N
7	20.42	Common Pipistrelle	Close pass
8	20.47	Myotis, likely Natterers	Close pass
9	20.54, 57, 59	Common Pipistrelle	Close pass
10	20.59, 21.02, 05, 07, 08	Noctule	Close, foraging
11	21.02, 05, 15	Common Pipistrelle	Pass, foraging
12	21.08	Soprano Pipistrelle	Pass, foraging

Surveyor to north-west of cottage (LJ);

Ref.	Time	Species	Observation
1	19.39	Noctule	Pass
2	20.05	Soprano Pipistrelle	HNS
3	20.07	Soprano and Common Pipistrelle	HNS
4	20.11	Soprano Pipistrelle	Foraging
5	20.18, 19	Soprano Pipistrelle	NE side then pass to SW

6	20.20	Common Pipistrelle	HNS
7	20.36	Brown Long-eared	HNS
8	20.41	Common Pipistrelle & unidentified bat	HNS
9	20.42	Brown Long-eared	HNS (neighbours' external light has come on)
10	20.54	Soprano Pipistrelle	HNS
11	21.53, 59	Unidentified bat	HNS
12	21.01	Serotine	HNS
13	21.01, 05	Soprano Pipistrelle	HNS
14	21.07	Unidentified bat	HNS

Surveyor to south-west of cottage (DW);

Ref.	Time	Species	Observation
1	20.03	Silent bat, likely Brown Long-eared	Pass from north side of house
2	20.06, 10	Soprano Pipistrelle	Pass from north side of house
3	20.18	2 x Soprano Pipistrelle	Pass from north side of house, foraging over garden
4	20.44	Noctule	Foraging for several minutes over garden
5	20.58, 21.17	Soprano Pipistrelle	Foraging and social calls

APPENDIX B: DNA ANALYSIS RESULTS



15 September 23

Re: Genotyping Identification Results for Abbey Sanders, Abbey Sanders Ecology

Job number 20051, received 10 August 2023
Sample labelled: Colebrk

PCR amplification unsuccessful.

Unfortunately, our analysis of this sample failed. We normally re-attempt the analysis up to three times depending on the availability of sample material sent. There are usually three possible reasons for sample failure:

1. DNA degradation has occurred to an extent beyond which we can detect it using PCR technology.
2. The sample might have an unusually high content of inhibiting substances causing enzymatic failure in the analysis.
3. The sample might not have been the target species.

Without further data we are not in a position to judge which of these possibilities is more likely correct. We are sorry to not have been able to identify this sample for you, and we make no charge for the attempt.

Best regards,

Robin Allaby
Associate Professor.

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

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