

stark ecology^{ltd}

BAT SURVEY REPORT

OLD MILL, DOWNHEAD, SOMERSET

By

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DECEMBER 2022

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INTRODUCTION

Stark Ecology Ltd was asked by Simone Smith to carry out a building inspection for bats survey of Old Mill, Downhead, Somerset. The property is proposed for renovation, including roof and loft conversion work.

The site is located at OS Grid Reference ST688459 and is in a rural location surrounded by mixed farmland which supports good hedgerow networks and woodland connectivity.



Fig 1: The site is surrounded by mixed farmland with excellent hedgerow and woodland connectivity.

The building inspection survey was carried out by Georgie Starkie BSc (Hons) MSc MRSB (Natural England Class 2 Bat Licence Number 2015-13123-CLS-CLS) on 17th August 2021 when the weather was cloudy (50% light, high cloud) but dry and with a light wind. The temperature was approximately 16°C.

An emergence survey of the property was carried out on 19th August 2021 by Georgie Starkie and Alex Starkie PhD. The weather was overcast (100% cloud) but dry with no wind and the temperature was between 15 and 17°C.

A dawn re-entry survey was carried out by the same surveyors on 30th August 2021 when the weather was overcast (100% cloud) but dry with a light wind and the temperature was between 11 and 13°C.

A second emergence survey was carried out by the same surveyors on 16th September 2021 when the weather was overcast (100% high cloud) but dry with a light wind. The temperature was between 14 and 18°C.

METHODOLOGY

Data Search

A data search was requested from the Somerset Environmental Records Centre (SERC) for records of protected species and habitats within 2km of the site.

The MAGIC website was used to search for any protected or designated sites and any European Protected Species licences which have been granted by Natural England for work within 2km.

Building Inspection

The property was surveyed internally and externally in accordance with the Bat Survey Guidelines, published by the Bat Conservation Trust (BCT). Externally it was examined for cracks, crevices or other features that could be used by bats for shelter or as access points to voids within the building. Internally it was surveyed for signs of use by bats such as droppings, rub marks or bats themselves.

DNA Analysis (Bats)

Bat droppings collected from the loft space of the property were sent for DNA analysis to aid species identification.

Emergence and Re-entry Surveys

Two emergence surveys were carried out, on 19th August and 16th September 2021, when the weather conditions were suitable. The surveys commenced 15 minutes before sunset and ended 90 minutes after sunset. Surveyors used Anabat SD2 detectors to aid species identification.

One dawn re-entry survey was carried out on 30th August 2021 and commenced 90 minutes before sunrise, ending 15 minutes after sunrise. Surveyors used Anabat SD2 detectors to aid species identification.

Limitations

This survey provides a brief snapshot of the site at the time the work was carried out and while every step was taken to ensure that the results of the survey are accurate, features of ecological value can change and therefore this report is only valid for 12 months.

RESULTS

Desk Study

Approximately 1.2km to the east of Old Mill is Asham Woods Site of Special Scientific Interest (SSSI) which forms part of the Mendip Woodlands Special Area of Conservation (SAC). Asham Wood is the largest and most diverse ancient semi-natural woodland in the Mendips and supports a large hazel dormouse *Muscardinus avellanarius* population.

Old Mill lies on the boundary of Consultation Band B of the Mells Valley SAC, which supports an important breeding population of greater horseshoe bats *Rhinolophus ferrumequinum*.

There are nine Local Wildlife Sites (LWS) within 2km of Old Mill, as summarised in Table 1 below.

Table 1: Local Wildlife Sites (LWS) within 2km of Old Mill.

Site Name	Description	Distance and Direction
Wood at Downhead	Predominantly broadleaved woodland on south-facing site with streams and lakes.	25m N
Tadhill Quarry	An andesitic quarry site with a mosaic of habitats including species-rich grassland, woodland, marsh, open water and spoil heaps.	165m NW
Baucombe Coppice South	Semi-natural broadleaved coppiced woodland with occasional standards sited on a steep south-facing slope.	800m E
Tadhill Field	Mosaic of marshy grassland, neutral grassland, scrub and broadleaved woodland.	850m NW
Cranmore Tower	Mixed plantation with Somerset notable species.	1.1km W
Tadhill Valley	Areas of semi-natural broadleaved woodland, semi-improved grassland and scrub in stream valley.	1.2km W
Breach Field	Lowland priority habitat with remnants of calcareous grassland in the North East.	1.8km SW
Norwood	Ancient semi-natural broadleaved woodland with coppice.	1.8km S

Site Name	Description	Distance and Direction
Norwood Fields	A mosaic of semi-improved, rough ground and steep margins.	1.8km S

Old Mill is generally not well connected to these LWS, although the “Wood at Downhead” LWS is close to the north of the property.

The following bat species have been recorded within 2km of the site:

- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *P. pygmaeus*
- Brown long-eared *Plecotus auritus*
- Myotis sp.
- Whiskered *M. mystacinus*
- Natterer’s *M. nattereri*
- Noctule *Nyctalus noctula*
- Leisler’s *N. leisleri*
- Serotine *Eptesicus serotinus*
- Lesser horseshoe *R. hipposideros*
- Greater horseshoe

In 2017 a licence was granted by Natural England for work resulting in the destruction of a common pipistrelle resting place at a location c.575m to the south of Old Mill.

Building Inspection - External

Old Mill is a two-storey brick house with pointing which is generally in good condition. The roof is clay tiles which are an unusual “M” shape. None of the roof tiles were noted to be missing, damaged, lifted or slipped and they sit quite tightly across all aspects of the roof.



Fig 2: Old Mill.

This photo taken from the south-west on 17th August 2021.

At the northern end of the property is a single storey extension, which is of the same construction.



Fig 3: The single storey extension to the north of Old Mill.

This photo taken 17th August 2021, from the north-east.

The mortar at the gable ends of the property appears in good condition with no obvious crevice features noted from the ground. A stone chimney at the centre of the property also appears to be well sealed, with no crevices surrounding it identified.

Doors, windows and soffits are uPVC and no gaps around or behind these were noted.

Building Inspection - Internal

There is a single loft space above the two-storey part of the house which is c.3.5m high to the ridge. The loft space is boarded throughout and is used for storage.

The roof is lined with bitumen roofing felt and along the length of the ridge there is a large bundle of fibreglass insulation.



Fig 4: The loft space at Old Mill.

This photo taken facing north within the loft space on 17th August 2021.

There is no loft space above the single storey part of the property, which has been converted to habitable accommodation to the roof.

Bats

At the northern end of the loft space, against the gable end wall, an accumulation of approximately 50 bat droppings was noted. A sample of the droppings was collected and sent for DNA analysis, which confirmed they were from serotine bats.



Fig 5: An accumulation of serotine droppings against the northern gable end wall of the loft space.

This photo taken 17th August 2021.

Emergence Survey - 19th August 2021

During this survey two soprano pipistrelle bats emerged from the property. One from the verge of the southern gable end of the house, between the wall and roof tile, the other from below the lead flashing at the north-eastern corner of the house.

One serotine bat emerged from the verge of the northern gable end of the house, between the wall and roof tile.



Fig 6: Emergences by one soprano pipistrelle and one serotine bat during an emergence survey on 19th August 2021.

This photo taken from the north-east.

- Soprano pipistrelle
- Serotine

Foraging over the garden and surrounding habitat was recorded throughout this survey by common pipistrelle, soprano pipistrelle, serotine, noctule and long-eared bats.

Full results of this survey are set out in Appendix 2.

Re-entry Survey - 30th August 2021

During this survey one soprano pipistrelle bat was recorded returning to roost at the apex of the northern gable end wall and one serotine bat was recorded returning to roost between the wall and roof tiles on the northern verge of the property.

Five soprano pipistrelle bats were recorded returning to roost in a crevice in the brick work on the southern aspect of the property, seven brick courses above a large window.



Fig 7: Five soprano pipistrelle bats were recorded roosting in this crevice feature in the southern aspect of the property on 30th August 2021.



Fig 8: Crevice in the brickwork on the southern aspect of Old Mill where five soprano pipistrelle bats were recorded roosting during a re-entry survey carried out on 30th August 2021.

Full results of this survey are set out in Appendix 3.

Emergence Survey - 16th September 2021

During this survey one soprano pipistrelle emerged from the apex of the southern gable end of the property. No other emergences or entries were recorded.

Commuting and foraging over the site was by common pipistrelle, soprano pipistrelle, serotine and long-eared bats.

Full results of this survey are set out in Appendix 4.

LEGISLATION

Bats

Bats are protected under Regulation 41 of the Conservation of Habitats and Species Regulations 2017 and under Section 9 of the Wildlife and Countryside Act 1981.

Under this legislation it is an offence to:

- Kill, injure or handle a bat;
- Possess a bat (whether alive or dead);
- Disturb a roosting bat; or
- Sell (or offer for sale) a bat (without an appropriate licence).

In addition, it is an offence to damage, destroy or obstruct access to a bat roost, whether it is currently in use or not.

Where bats are present within a feature or structure on a development site in England, a licence may be granted by Natural England for works to alter or remove the roost. Licence applications can only be made once full planning permission has been granted and a suitable mitigation strategy (set out in a detailed Method Statement) forms an essential part of this application process. Works are likely to be seasonally restricted and must be carried out in accordance with the Method Statement agreed with Natural England.

DISCUSSION AND CONCLUSIONS

Mells Valley SAC

The garden of Old Mill supports habitat which is of value to bats when commuting and foraging and is connected to other areas of suitable habitat for this purpose in the surroundings. As the site is in Consultation Band B associated with the Mells Valley SAC it is likely that the on-site habitats are used by greater and lesser horseshoe bats as they move through the wider landscape.

Given the limited extent of the proposals for this site (renovation of an existing property) it is not considered proportionate to carry out extensive survey or monitoring effort to confirm the presence of horseshoe bats. It is assumed that these species are likely to make use of the site as they commute and forage through the surroundings.

The proposals for the site include the long-term retention of boundary hedgerows and the property will continue to be surrounded by a garden, all of which will retain connectivity for bats commuting and foraging through the wider landscape. As such, no impacts on bats associated with the SAC can be anticipated as a result of the proposals to carry out renovations to Old Mill.

Lighting

Where new external lighting is required for the purposes of security, this will comply with ILP Guidance Note 8.

When the renovation of the property has been completed, light spill from the windows and doors would not be anticipated to exceed current light spill levels the property in its current state.

Roosting Bats

A building inspection survey, DNA analysis of droppings and emergence/re-entry surveys carried out during August and September 2021 of Old Mill, Downhead has confirmed that the property supports day roosts of low numbers of serotine and soprano pipistrelle bats. Bat droppings found at the northern end of the loft space were identified through DNA analysis as being from serotine bats and this species was recorded emerging from this area of the roof of the property on 19th August 2021. No other activity by this species was recorded in the building during surveys carried out in 2021 although high levels of foraging in the habitat surrounding have been recorded during emergence and re-entry surveys. Up to six soprano pipistrelle bats have been recorded roosting in the property, predominantly using a crevice in

the brickwork on the southern aspect of the building, which likely leads to a cavity in the wall.

Any work to the roof, loft space and the cavity in the brickwork on the southern aspect of the property could result in disturbance and modification of these bat roosts and such works will need to be carried out under licence from Natural England in order to proceed lawfully.

An application to Natural England for a licence can be made once any necessary planning permission has been granted and all conditions relating to wildlife have been discharged. Under the terms of the licence, and to maintain the Favourable Conservation Status of bats at the site, works to enclose the loft space to create habitable space or to strip roof materials (tiles, batten, timber and felt) from the property will need to be carried out under ecological supervision. Where roof works are necessary, tiles, batten, timber, felt and other materials will be carefully removed by hand and will be lifted, not rolled, to prevent crushing any bats which may be present beneath. All materials will then be checked on all surfaces for bats before stacking or throwing.

Any bats that are found will be caught by the supervising ecologist and placed in a Schwegler 2F bat box (or suitable equivalent) which will be installed on a tree in a quiet area of the site, away from disturbance by construction works.

The bat roosts at this site are of low conservation significance (Figure 4, Bat Mitigation Guidelines) and so works which have the potential to disturb bats or their roosts can be carried out at any time of the year, although not when daytime temperatures are below 8°C, in heavy rain or strong winds.

Impacts

The cavity in the brickwork on the southern aspect of the property is to be retained but will be disturbed when timber cladding is added to this face of the building.

The soprano pipistrelle roosts at the northern end of the house will only be disturbed if the property has to be re-roofed.

The serotine day roost at the northern end of the property will be disturbed and modified by work to convert the loft space to habitable accommodation.

Mitigation

The site will need to continue to provide roosting opportunities for serotine and soprano pipistrelle bats on completion of the works.

Where timber cladding is to be added to the southern face of the property, where soprano pipistrelle bats are roosting in a cavity in the wall, a gap will be created in the timber cladding which will allow bats to continue to access their roost and this work will be supervised by a suitably licensed ecologist to ensure the roost remains viable. Although this work could be carried out at any time of the year, in order to minimise disturbance to bats the timber cladding should be added outside the peak of the summer maternity period, between September and April (inclusive).

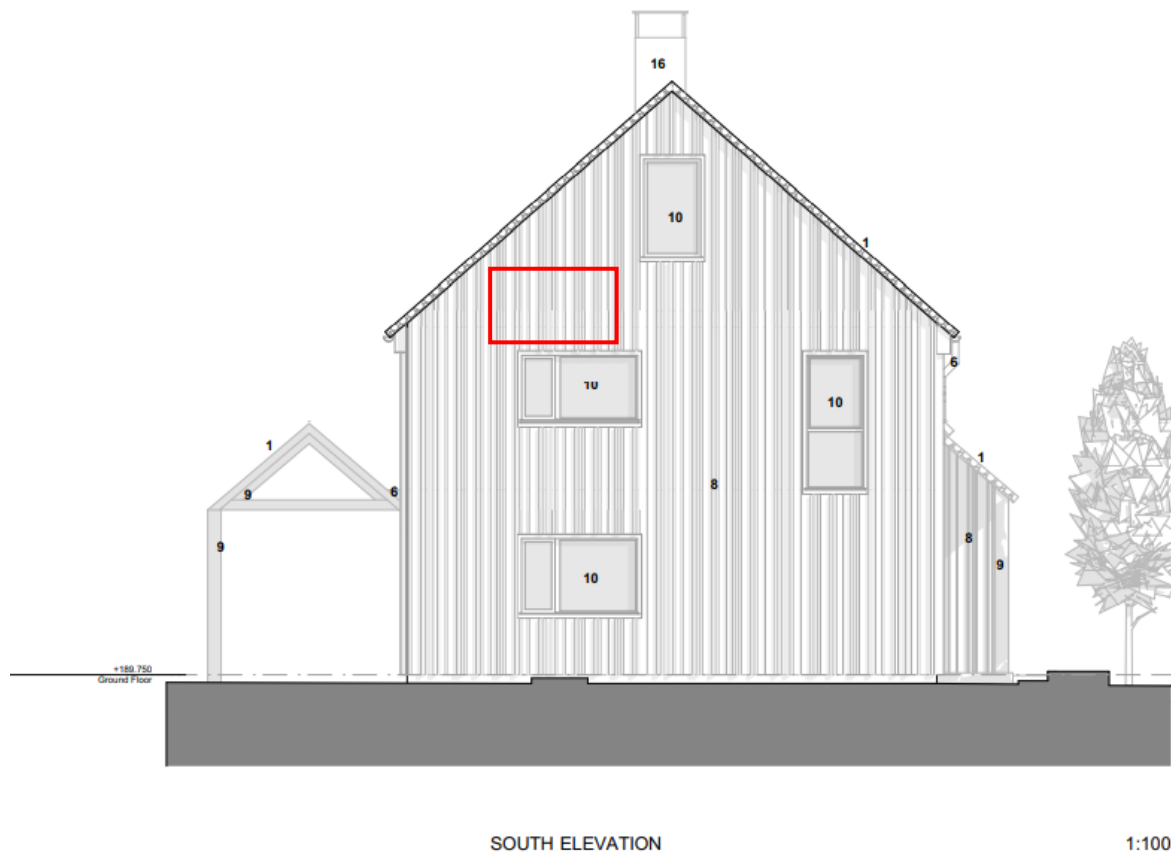


Fig 9: The timber cladding in this area of the property should be added between September and April (inclusive) under the supervision of a suitably licensed ecologist. A gap will be left around the roost access.

Unless the property has to be re-roofed, no direct impacts on the other soprano pipistrelle roosts in the property are anticipated and so no mitigation for this species would be required. In the event that works are likely to result in impacts on soprano pipistrelle roost features, a Schwegler 1FF bat box (or suitable equivalent) will be installed on a mature tree in the garden of the property to provide alternative roosting opportunities.

Work to create habitable accommodation in the loft space of the property will result in modifications to the serotine bat roost at the northern gable end. Leaving a void at the ridge in this area of the property will allow serotine bats to continue to use the roof of the property as they do currently and will result in minimal disturbance. Unless the property is to be re-roofed, no change to the roost access point would be anticipated and no new access points will need to be provided.

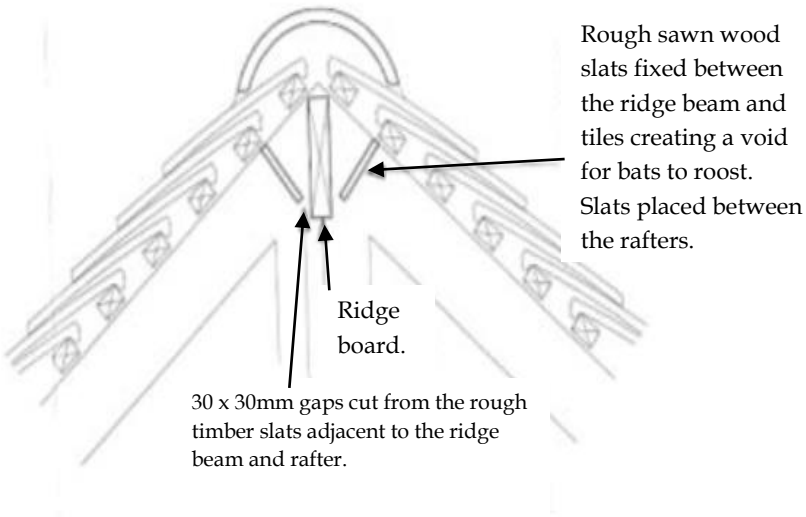


Fig 10: Crevice feature at the northern end of the ridge to be provided for the benefit of serotine bats.



Fig 11: A crevice feature will be created around the ridge at the northern end of the property for the benefit of serotine bats.

REFERENCES

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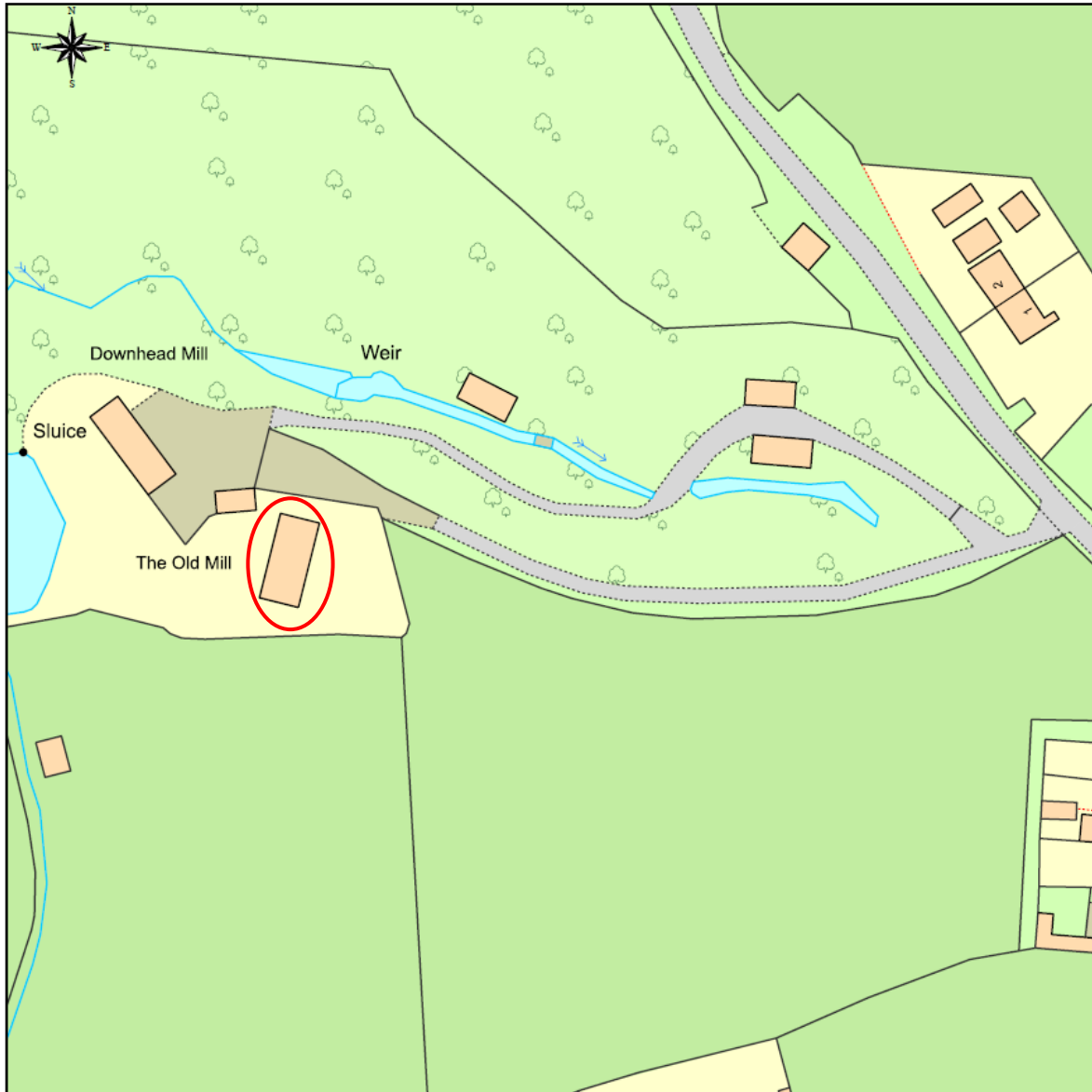
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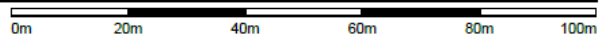
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APPENDIX 1: SITE MAP



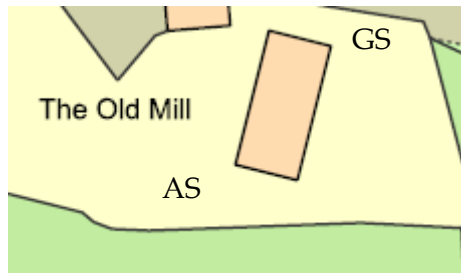


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Scale: 1:1250, paper size: A4

APPENDIX 2: EMERGENCE SURVEY 19TH AUGUST 2021



Survey Sheet - Bat Activity

Site Name: Old Mill, Downhead

Date: 19/08/21

Weather Conditions: 100% high cloud, no rain, light wind

Max Temp: 17°C

Min Temp: 15°C

Sunset Time: 2023

Survey Type: Emergence

Survey Starts: 2008

Survey Ends: 2153

Surveyor: GS

Time	Map Ref	Species	Activity
2018	1	55 pip	1 bat emerged from gap between tiles below lead
2030		45 pip	Brief HnS below trees to N
2031		55 pip	1 bat foraging over driveway
2032		45 pip	Foraging HnS
2034		45 pip	Flew from back of house then foraged over driveway
2036		45 pip	Foraging around trees on driveway
2039		55 pip	Foraging over driveway
2042		55 pip	HnS
2051		Serotine	Flew from back garden around house
2052		Serotine	Foraging around mature trees to N of house

Time	Map Ref	Species	Activity
2053		Serotine	Foraging over driveway
2056	2	Serotine	1 bat emerged
2059		Serotine	1 bat foraging over driveway
2101		Serotine	Foraging up and down tree line to N of house
2018		Serotine	HnS
2110		Serotine	HnS
2118		45 pip	HnS
2122		Serotine + 45 pip	HnS foraging over driveway
2125		45 pip	Foraging over drive
2127		45 pip	HnS
2128		Noctule	HnS
2128		45 pip	2 bats foraging over driveway
2132		Serotine	Foraging HnS
2133		Serotine	Foraging ongoing HnS
2134		45 pip	HnS
2136		Noctule	HnS
2141		55 pip	HnS until 2143



Survey Sheet - Bat Activity

Site Name: Old Mill, Downhead

Date: 19/08/21

Weather Conditions: 100% high cloud, no rain, light wind

Max Temp: 17°C

Min Temp: 15°C

Sunset Time: 2023

Survey Type: Emergence

Survey Starts: 2008

Survey Ends: 2153

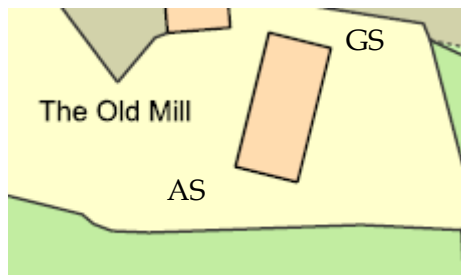
Surveyor: AS

Time	Map Ref	Species	Activity
2039		45 pip	HnS
2040	1	55 pip	1 bat emerged
2048		55 pip	HnS
2050		55 pip	2 bats HnS
2051		LE	Foraging overhead
2052-55		LE + Noctule	Continuous calls HnS
2056		Serotine	Flew towards house from hedgerow to S
2101		Serotine	Foraging over garden to S of house
2108		Noctule	HnS
2109		Serotine	Foraging high over the garden
2112		45 pip	HnS
2122		Serotine	HnS
2123		55 pip	HnS
2125		55 pip	HnS
2128		45 pip	HnS

Time	Map Ref	Species	Activity
2129		45 pip	HnS
2131		Serotine	HnS
2132		Serotine	HnS
2133		Serotine	HnS
2136		45 pip	HnS
2137-39		55 pip	Foraging HnS
2139		Serotine	HnS
2141		55 pip	HnS
2142		55 pip	HnS
2144		Noctule	HnS
2145		55 pip	HnS



APPENDIX 3: RE-ENTRY SURVEY 30TH AUGUST 2021



Survey Sheet - Bat Activity

Site Name: Old Mill, Downhead

Date: 30/08/21

Weather Conditions: 100% high cloud, no rain, light wind

Max Temp: 13°C

Min Temp: 11°C

Sunrise Time: 0620

Survey Type: Re-entry

Survey Starts: 0450

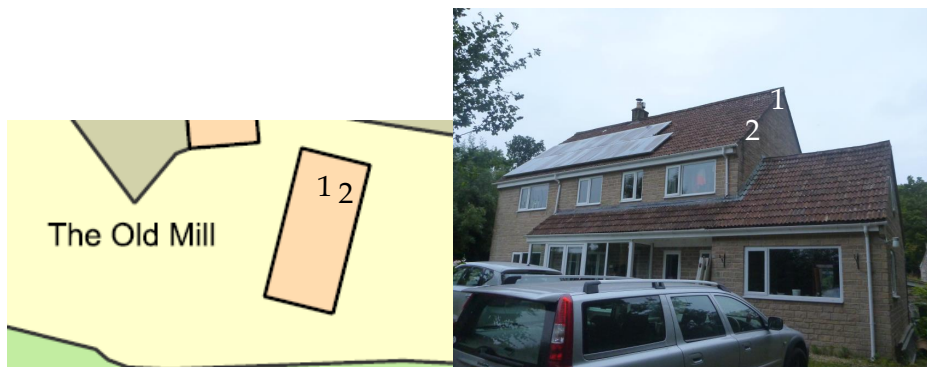
Survey Ends: 0635

Surveyor: GS

Time	Map Ref	Species	Activity
0450-55		LE, 45 + 55 pip	Foraging HnS ongoing as survey commenced
0456		45 pip	Foraging HnS
0457		55 pip	Foraging HnS
0459		45 pip	Foraging HnS
0502		55 pip	Foraging HnS
0503		55 pip	Foraging HnS
0505		Noctule	HnS
0506		45 pip + LE	Foraging HnS
0507		Noctule + 55 pip	HnS foraging over site
0510		55 pip	Foraging HnS

Time	Map Ref	Species	Activity
0513		45 pip	Foraging HnS
0515		Noctule	HnS
0516		55 pip	HnS
0517		55 pip	Foraging directly above surveyor
0518		Noctule	HnS
0519		45 pip	HnS
0521		45 pip	Flying above roof and foraging over driveway
0522		LE	HnS
0524		55 pip	HnS
0526		45 pip	HnS foraging over driveway
0528		Serotine + 45 pip	Foraging over driveway
0530		55 pip	Foraging HnS
0532		45 pip	Faint calls HnS
0535		Serotine	Faint calls HnS
0536		45 pip	Foraging HnS
0538		45 pip	HnS
0539		55 pip	Flying above the house
0540		45 pip	HnS
0542		Serotine	Flew above house then circled over driveway
0544		45 pip	Foraging over driveway
0544	1	45 pip	2-3 bats circling near apex at gable end
0550		LE	Flying over roof and driveway

Time	Map Ref	Species	Activity
0552		45 pip	HnS
0554		Myotis sp.	Circling over house and driveway
0556		55 pip	Foraging over driveway
0557	1	55 pip	1 bat re-entered at apex of gable end
0559		45 pip	Foraging over driveway
0602	2	Serotine	1 bat re-entered at verge of N gable
0603		55 pip	HnS
0605		45 pip	2 bats foraging over driveway and circling house
0606		LE	Foraging over driveway
0610		45 pip	Foraging along tree line to N and over driveway
0611		55 pip	Foraging along tree line to N and around house
0614		55 pip	Circling over house and driveway
0615		55 pip	Circling over driveway
0617		45 pip	Foraging over driveway
0619		45 pip	1 bat continuing to forage along tree line to N



Survey Sheet - Bat Activity

Site Name: Old Mill, Downhead

Date: 30/08/21

Weather Conditions: 100% high cloud, no rain, light wind

Max Temp: 13°C

Min Temp: 11°C

Sunrise Time: 0620

Survey Type: Re-entry

Survey Starts: 0450

Survey Ends: 0635

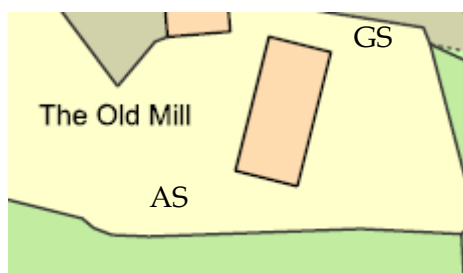
Surveyor: AS

Time	Map Ref	Species	Activity
0454		45 pip	HnS
0455		55 pip	HnS
0457		55 pip	HnS
0500		LE	Commuting over garden
0505		55 pip	HnS
0506		LE + Noctule	HnS
0516		55 pip	HnS
0517		Noctule	HnS
0518		Noctule	HnS
0520		55 pip	HnS
0521		55 pip	HnS
0525		45 pip	HnS
0527		LE	Commuting over garden
0534		Serotine	Flying NW to SE over garden
0536		55 pip	HnS

Time	Map Ref	Species	Activity
0539		55 pip	HnS
0542		45 pip	Flew N to S over roofline
0551		55 pip	Foraging over garden
0600	1	55 pip	3 bats entered into crevice in brick work
0605		LE	1 bat circling over roof
0606	1	55 pip	1 bat entered into crevice in brick work
0614	1	55 pip	1 bat circled house then entered into crevice in brick work
0620		45 pip	1 bat continuing to forage over the garden



APPENDIX 4: EMERGENCE SURVEY 16TH SEPTEMBER 2021



Survey Sheet - Bat Activity

Site Name: Old Mill, Downhead

Date: 16/09/21

Weather Conditions: 100% high cloud, no rain, light wind

Max Temp: 18°C

Min Temp: 14°C

Sunset Time: 1920

Survey Type: Emergence

Survey Starts: 1905

Survey Ends: 2050

Surveyor: GS

Time	Map Ref	Species	Activity
1921	1	55 pip	1 bat emerged from apex of southern gable end
1933		55 pip	1 bat foraging over driveway
1934		55 pip	1 bat foraging over driveway
1939		45 pip	1 bat foraging over driveway
1943		LE	HnS
1945		45 pip	1 bat foraging over driveway
1946		45 pip	1 bat foraging over driveway
1947		LE	Brief call HnS
1950		45 pip	Foraging HnS
1955		45 pip	1 bat foraging along tree line to N

Time	Map Ref	Species	Activity
1958		45 pip + Serotine	HnS
2003		55 pip	Foraging HnS
2010		LE	HnS
2020		45 pip	HnS over driveway
2039		45 pip	HnS
2042		Serotine	HnS
2043		Serotine	Foraging HnS



Survey Sheet - Bat Activity

Site Name: Old Mill, Downhead

Date: 16/09/21

Weather Conditions: 100% high cloud, no rain, light wind

Max Temp: 18°C

Min Temp: 14°C

Sunset Time: 1920

Survey Type: Emergence

Survey Starts: 1905

Survey Ends: 2050

Surveyor: AS

Time	Map Ref	Species	Activity
1939		45 pip	1 bat foraging over garden
1946		45 pip	Foraging over garden
1958		45 pip	HnS
2003		55 pip	Foraging over garden
2014		LE	HnS
2015		LE	HnS
2018		45 pip	Flew over house and garden, away to S
2020		45 pip	HnS
2031		Serotine	HnS
2042		Serotine	HnS
2043		55 pip	HnS