Review of the Status of Bats in Berkshire 2020

Client: Wokingham Borough Council

Date: February 2021

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Issue Date		26 February 2021

Version number	004
Revision notes	

This publication should be cited as:

Andrews, C. (2021). Review of the Status of Bats in Berkshire 2020. A report by CA Ecology on Behalf of Wokingham Borough Council.

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Executive Summary

To date there has been no systematic review of the status of bats in Berkshire. Wokingham Borough Council has provided funding to enable a systematic review of the records held by the Berkshire and South Buckinghamshire Bat Group.

The species accounts on the following pages summarise the information that is currently available (up to the end of 2020) on the distribution and status of bats in Berkshire.

The report is intended to inform and support bat conservation and awareness-raising work. It can also be used by conservation organisations, land managers, ecologists, planners and other interested parties but should not be used for commercial purposes in place of a data search with Berkshire and South Buckinghamshire Bat Group or Thames Valley Environmental Records Centre.

Of the 18 UK bat species 12 are considered breeding or resident in Berkshire with two species recorded as present but not confirmed resident. The table below summarises what the current records enable us to conclude about the status of each species in Berkshire.

Summary of species recorded in Berkshire

Status	Breeding	Resident	Resident?	Extinct	Not recorded	Not resident
Number of species	8	1	3	2	2	2
Species	Barbastelle Brown long-eared bat Common pipistrelle Daubenton's bat Natterer's bat Noctule Serotine Soprano pipistrelle	Nathusius' pipistrelle	Bechstein's bat Brandt's bat Whiskered bat	Grey long-eared bat Lesser horseshoe bat	Alcathoe Greater mouse-eared bat	Leisler's bat Greater horseshoe bat

Information on bat sightings, or location of roosts/suspected roosts should be sent to the county Records Officer in the first instance. Records can be submitted here: http://www.berksbats.org.uk/Home/submit-bat-record or sent directly to records@berksbats.org.uk

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1 Introduction

1.1 Background

1.1.1 With an area of 487 square miles, Berkshire shares a border with Hampshire, Surrey, Oxfordshire, Buckinghamshire and Wiltshire. The county supports a mix of habitats including 15 of the 45 UK priority habitats, providing a wealth of habitats suitable for a range of bat species. Approximately 14.5% of the county is wooded including pockets of ancient woodland, important for some of the UK rarer 'woodland bats'. The county also supports nationally rare lowland unimproved grassland habitats including neutral, calcareous and acid grassland types, which along with the multiple wetland areas contribute greatly to biodiversity in the county. Heathland, hedgerows and orchards are other principal habitats found across the county which provide an important contribution to connectivity and the range of habitats present. Historically the area is known for farming which still endures despite an increasing human population of around 915,157 making the county densely populated, three of the largest towns being Reading, Slough and Newbury. However, this urban habitat has proved important for some species especially those adapted to roosting in houses.

1.1.2 Bat populations in the UK have seen considerable declines over the past 100 years and although there are some tentative signs of recovery many species are still suffering declines. Of our 18 resident species we only have sufficient data nationally on two of those species to fully assess the population status.

1.1.3 To date there has been no systematic review of the status of bats in Berkshire. In 2007 the author undertook an informal review of the data held by the bat group at the time and produced a table published on the B&SBBG website. The table is now considerably out of date. Wokingham Borough Council have funded this report to provide an up to date review of the status of bats in the county. The Wokingham Borough Biodiversity Action Plan supports local recording groups and Wokingham Borough Council are keen to support evidence-based decision making for the benefit of biodiversity.

1.1.4 This review has been undertaken by Claire Andrews of CA Ecology. Claire grew up in Berkshire and has been involved in bat conservation and bat care in Berkshire since the early 1980s. Claire has over 25 years' experience working with bats and has been a licence holder for fifteen years. She has been registered to act under class licences CL16 (Level 2), CL19 and CL20 since their introduction in 2013 which includes disturbing, handling, mist netting and harp trapping bats. Although now living in Hampshire she is still involved with the B&SBBG as the trainer for the county, undertakes voluntary bat roost visits and as a licence holder for mist netting and harp trapping is one of two leads on the Nathusius' project in Berkshire.

1.1.5 Over the last three years, Claire has conducted over 3,000 hours of professional survey both inside roosts and externally using bat detectors and trapping equipment. Claire has held over 70 European Protected Species Licences (EPSL) for a range of bat species and is a Registered Consultant under the Bat Mitigation Class Licence CL21, giving her a good understanding of assessing conservation status in context.

1.2 Legal and planning policy context

1.2.1 Bats and their roosts receive full protection under the Conservation of Habitats and Species 2017 (as amended). Further protection is provided in England under Section 9 of the Wildlife and Countryside Act (as amended). Taken together these provide protection for bats and their roosts.

1.2.2 Consideration of the local distribution and abundance of a protected species is directly relevant to offence 43(2)(b) of the Habitats and Species regulations and, whilst this review may be data deficient in places, it goes some way towards describing local distribution and abundance.

1.2.3 Additional protection is provided for soprano pipistrelle, noctule and brown long-eared bats, all of which are included on a list of species of principal importance for the conservation of biodiversity in England, created by the Secretary of State as a requirement under section 41 (S41) of the Natural Environment and Rural Communities Act 2006 (NERC Act).

1.2.4 Under section 40 of the NERC Act all public bodies have a duty to have regard to conservation and biodiversity when carrying out their functions, the S41 list is a guide for decision makers when implementing their duty. This duty extends to all public bodies the duty of Section 74 of the Countryside and Rights of Way Act 2000, which placed a duty on government ministers.

1.3 The bat group and our data

1.3.1 The records used to produce this report originated from the data held by the Berkshire and South Buckinghamshire Bat Group (B&SBBG). The database comprises records managed by group members since the early 1990s and includes ad-hoc records sent in by members of the public, records from commercial ecological consultancies, records from the National Bat Monitoring Programme, and records held as a result of a data sharing agreement with the Thames Valley Environmental Records Centre. In addition, over the past 10 years the B&SBBG has undertaken a number of projects with the aim of increasing knowledge about bats in Berkshire. Some of the key projects and therefore sources of data have been:

- **Bat care** Records of bats that come into care can be very useful as they are in hand and confirmed identifications. These can be compared to the numbers of acoustic records for a species and can be a useful gauge of under- or over-recording in other areas and are also often a source of our rarer species records. Where non-volant bats are found this can be an

indication of a maternity roost (our first and only barbastelle maternity roost was identified this way!). In addition to the records collected bat carers are on the front line, providing valuable public relations work and are the face of the bat group in Berkshire.

- **Roost visits** The group has a number of Natural England Volunteer Bat Roost Visitors (VBRVs). The scheme allows members of the public who may have an issue with bats in their house to receive free advice and information, providing a valuable contribution to conservation of roosts in our area and also a source of roost records.
- **Hibernation surveys** Since the early 1980s members of the bat group have monitored hibernation sites in Berkshire. We are not blessed with huge cave systems or underground sites as found in some other counties but we do have a number of smaller follies, mines, ice houses and pillboxes that are now regularly monitored twice each year (where access permits) as part of the National Bat Monitoring Programme, helping to inform the national status of bats across the country. The visits are our longest running continuously monitored sites and have included our first confirmed record of Bechstein's bat.
- **Nathusius' project** Since 2016 the bat group has been involved with the National Nathusius' Pipistrelle Project (NNPP). The group has trapped at seven sites in total across Berkshire (plus one in South Buckinghamshire), each year trapping before and after the maternity season at four or five sites. The aim of the survey is to catch and ring Nathusius' pipistrelle bats, at which we have had some success. As a by-product a number of other species have been caught across the sites, significantly contributing to our records database, including our first confirmed records of Brandt's bat in Berkshire.
- **West Berkshire Living Landscape project** A Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust project aiming to connect local people with the natural heritage in West Berkshire, and to link up and strengthen its threatened wildlife habitats. The bat group has organised surveys and engagement including walks and talks within the project area and has supported training of members and volunteers. Surveys were carried out to gain a better understanding of the species present within the project area. This has included the establishment of a bat box scheme at Bowdown and Baynes Woods along with mist netting at four key sites twice a year over a period of five years. The project has now ended but the group continue to monitor the bat boxes and to ring two populations of soprano pipistrelle bats in order to gain more information about population dynamics.
- **Bat box schemes** The group has a number of bat box schemes across the county which provide detailed information at a local level.

1.3.2 The records have been collated by B&SBBG, while maintaining confidentiality of the individuals that submitted the records, and this data plays a vital role in informing conservation efforts, habitat management work and decisions about planning applications. As well as being useful from a local perspective, records are shared with the local records centre and many of the surveys are part of national monitoring organised by the Bat Conservation Trust, which is then combined with data from all over the country and used to inform national policy.

1.3.3 This review whilst produced by Claire Andrews has been reviewed by and commented on by B&SBBG records officer and is endorsed by the B&SBBG.

1.4 Sending in records

1.4.1 In order to be a position to best protect bats and their habitats it is important to have as accurate a picture as possible of the species range, location of roosts and feeding habits.

1.4.2 Information on bat sightings, or location of roosts/suspected roosts should be sent to the county Records Officer in the first instance. http://berksbats.org.uk/bat-records/ or sent directly to records@berksbats.org.uk.

1.4.3 The information will then be passed on to the Thames Valley Environmental Records Centre and included in national datasets in due course.

1.4.4 For any record it is important to include as much information as possible – in particular:

- Species – be as accurate as possible and provide information on how you determined this – in hand record, DNA of droppings, recorded acoustically etc.
- Date – let us know when you collected the record
- Location - a grid reference and postcode are best along with site name or address
- Number – where possible the number of passes or bats seen in or counted out of a roost should be included
- Sex and age – include these details if known – for example, a bat found in a bat box
- For roosts it is good to include details of the roost feature e.g., the tree species/type of building, where the bats are roosting e.g., under tiles or behind peeling bark etc.
- Contact details in case any further details are needed

1.5 Using this report

1.5.1 The following species by species accounts summarise the information that is currently available (up to the end of 2020) on the distribution and status of bats in Berkshire.

1.5.2 The report is intended to inform and support bat conservation and awareness-raising work. It can also be used by conservation organisations, land managers, ecologists, planners and other interested parties.

1.5.3 The report should not be used for commercial purposes in place of a data search with Berkshire and South Buckinghamshire Bat Group or TVERC.

1.5.4 Limitations of the data. When using and interpreting the information it is important to understand that:

- The records have not been systematically collected – absence of a record may just be because no one has recorded there
- Distribution maps should not be used as a definitive species distribution map or a projected distribution map
- Many records derived from bat care, VBRV or are from surveys commissioned as part of the planning process therefore there is a concentration around population centres and dwellings
- Correspondingly, areas where fewer people live or where there is no access are data deficient
- Records are sent in from a number of sources and from recorders with varying skill levels; this is likely to lead to under recording of some species and over recording of others. All acoustic records should be treated with caution.
- Apparent increases in last 10 – 20 years are likely to be due to changes in surveyor effort, and improvements in technology.

1.5.5 Heatmaps are representative only, for each species a scale has been chosen which best represents the data for that species as such maps may not be directly comparable. The hot (red) colours indicate the areas with higher concentration of records with cool colours fewer.

1.5.6 For the overall status of each species, confirmed breeding has been allocated where there is confirmed evidence of a maternity roost present. Resident has been used where confirmed roosts are present but there is no evidence of breeding. Resident ? is used to signify those species where, given the type of records, residency can be assumed (for example records of juvenile bats) but there is no confirmed evidence of a roost.

2 Brown long-eared bat (*Plecotus auritus*)

Photo: Claire Andrews

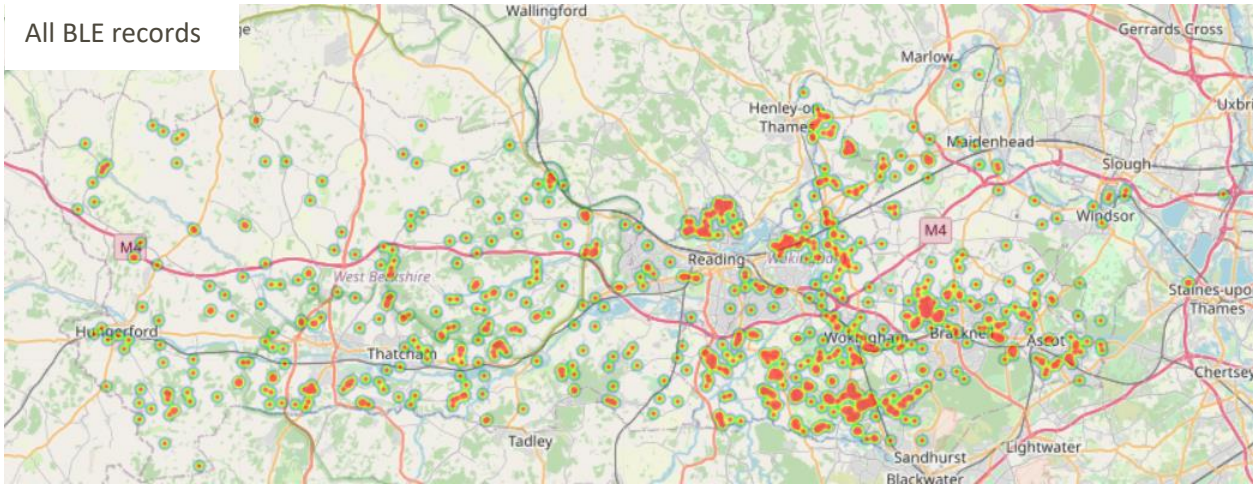
2.1.1 **County status**

Recorded breeding. A total of 1,077 records of which 893 are within the past 10 years. In contrast to all other species over half the records are roost records. Earliest record 1970.

2.1.2 **Distribution**

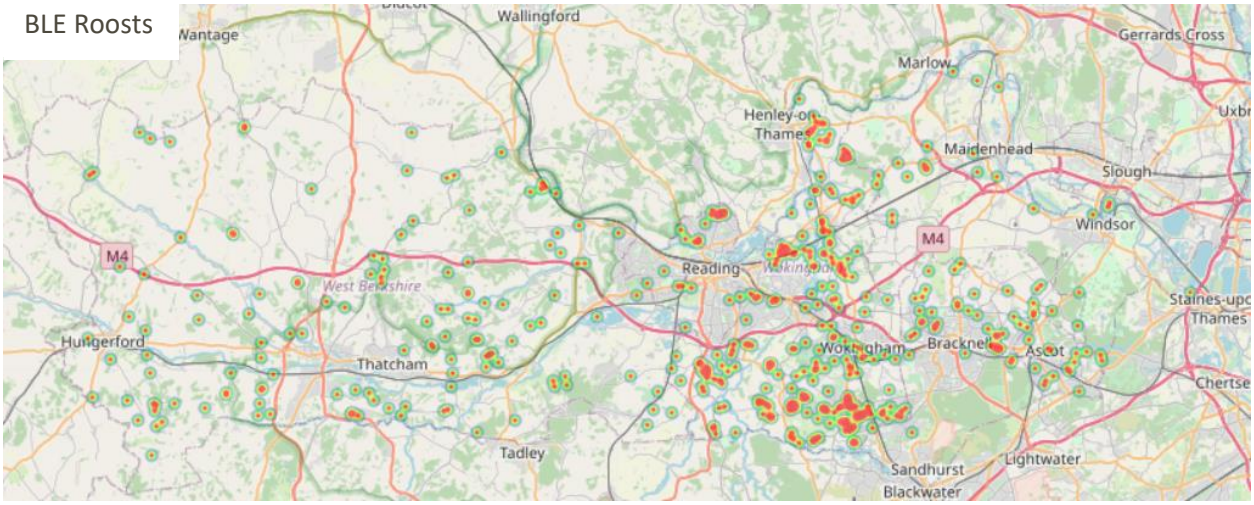
Widespread across the county occurring in all districts. Fewer than half the records (454) are acoustic records. Whilst the species is likely to be under-recorded acoustically due to its quiet echolocation calls, confidence in species identification is likely to be high as calls are relatively distinctive. However, calls are difficult to separate from the grey long-eared bat. Bat in hand records: brown long-eared bats (BLE) have been caught at Bearwood, Virginia Water, Thatcham Nature Discovery Centre and Hosehill (four of the seven Berkshire sites in the Nathusius' project) and are regularly caught at Greenham Common, Bowdown Woods and Crookham Common (three sites monitored as part of the West Berks Living Landscape project). There are 40 records of injured, grounded or orphaned bats.

All BLE records



2.1.3 **Known roosts** There is a total of 619 roosts across the county, all except two are in buildings or bat boxes (where roost structure is given). Of these, 73 are listed as maternity roosts with 23 recorded hibernation sites.

BLE Roosts



2.1.4 **Types of building/structure used** Of the 73 maternity roosts, where roost type is recorded, the majority (38) are in loft spaces. There is only one record of a maternity roost in a tree (no further details given), one in a school and one in an outbuilding (but again no further details given so these may well be within a loft). There is a record from 2001 of a breeding roost in a village hall, behind a skirting board and two records of breeding roosts in barns, one of which is listed as loft void of main barn. A small breeding colony was recorded in one of the hibernation boxes at Clayfield Copse in 2012, but it was not present the following year.

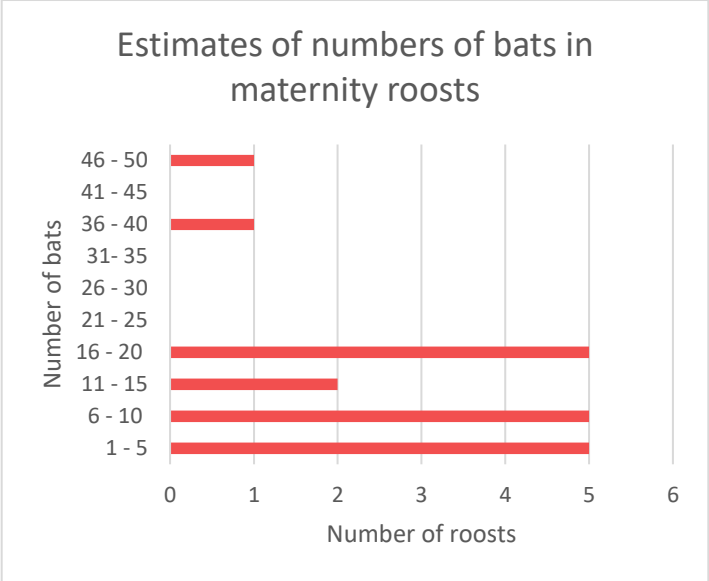
Typical view bats roosting at ridge, at a roost in Inkpen Photo: Claire Andrews

2.1.5 For non-breeding roosts, where roost type is recorded, only one has been reported in a tree, again the majority (179) are in lofts; other structure types given include a school (1), barns (9), garages (8), outbuildings (4) and churches (2), one of which is a roost behind a coat of arms. Other buildings (6) include three in garrison buildings, one is recorded as "hole in wall", one is a roost in a porch, and one is in the ticket office at Beale Wildlife Park. There are nine sites where BLE have been recorded using bat boxes, primarily in bat box schemes run by the bat group: Clayfield Copse, Bowdown Woods, Sheepdrove Organic Farm, Greenham Common and Crookham Common.

2.1.6 **Hibernation** Brown long-eared bats have been recorded at 23 hibernation sites. Seven of the sites are regularly monitored with BLEs encountered sporadically and in low numbers. A converted ice house in Wokingham that has been monitored since 1996 and continuously since 2009 has only seen a single BLE three times. The pattern is similar for three other regularly monitored sites: the ice house at Ufton, a chalk mine at Yattendon and a chalk tunnel at Remenham, all of which are monitored annually, only occasionally encountering BLE. However, at two sites BLE are recorded regularly: a converted pill box in Wokingham where BLE are recorded in double figures annually and a converted fire plane building at Greenham Common where low numbers are recorded annually. Other sites include: roof spaces (9), a castle (1), outbuildings (2), cellars (3), cave (1), an air raid shelter (1) and churches (3).

BLE in hibernation chalk tunnel near Henley. Photo: Claire Andrews

2.1.7 **Minimum and maximum maternity roost counts** Only 20 of 73 maternity roost records have attempted to estimate the numbers of bats present. None of the records provided are from direct counts. Minimum estimate was five bats, maximum was 50 bats, taking the upper end of the estimate. The chart right shows the spread of the estimates.



2.1.8 **Over the border** Recorded in all surrounding counties and considered widespread.

2.1.9 **Nationally** Primarily associated with deciduous woodland and rural gardens. Found throughout the UK, Ireland and the Isle of Man but absent from Orkney and Shetland and other exposed islands. It is the fifth most common species in Britain with the current population estimated at 943,000 (Mathews, 2018). Data deficient to draw any conclusion on population trends but data from the National Bat Monitoring Programme (NBMP) indicates that the population has been stable since 1999.

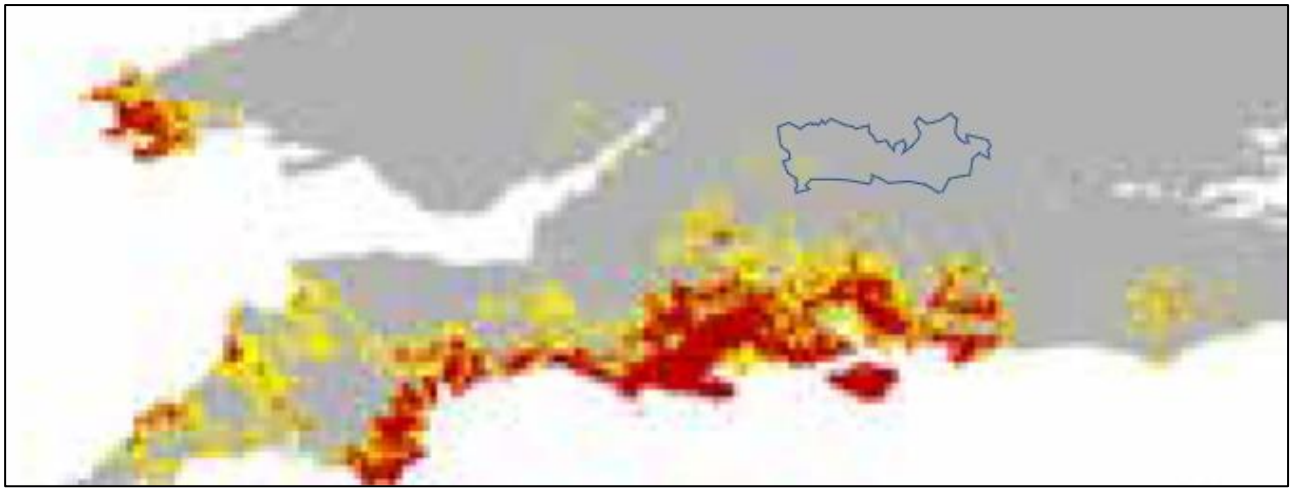
3 Grey long-eared bat (*Plecotus austriacus*)

Photo: Derek Smith

3.1.1 **County status** Not recorded, but see historical records below.

3.1.2 **Distribution:** No records.

3.1.3 Niche habitat modelling shows that most of Berkshire represents unsuitable habitat: this can be seen on the Berkshire boundary overlaid on the map below (Razgour, 2013). There is, however, some habitat in the Inkpen and Mortimer areas that represents marginal habitat. The modelling suggests that habitat is limited by low winter temperatures, high summer rainfall and the availability of grasslands, the model currently is a good fit for the current known distribution. Climate change may, however, alter the distribution. It is therefore important, particularly in the south west of the county, that where Plecotus bats are detected during surveys they are identified to species, preferably by DNA testing of droppings.



The base map shows predicted suitable areas for the grey long-eared bat in the UK based on ecological niche modelling (Maxent), with grey representing unsuitable areas, yellow marginal and red, suitable taken from Razgour (2013).

3.1.4 **Known roosts** No roosts recorded in Berkshire. All known maternity colonies in the UK (10) are in the loft spaces of residential buildings, usually large Victorian houses with a lined roof (felt or wood). UK hibernation sites unknown.

3.1.5 **Historical records of note** Two skeletons discovered in a blocked-up cave system on the Yattendon Estate in 1995 confirmed by the Natural History Museum to be those of grey long-eared bat (*pers. comm.*).

3.1.6 **Over the border** In December 2017, a female grey long-eared bat was picked up by bat carers in the Hampshire Bat Group having been found on the outside of a building in a business park near Basingstoke railway station. The bat was an adult female but had not reproduced and was thought to have been born that year. She was ultimately released in Old Basing in 2018 with a radio tag. She flew 2km away, returned a few days later, did a bit of house swapping and then the tag fell off in a house in Old Basing. This indicates the possible presence of a maternity roost in this area. (David Byett *pers. comm*.). There are a few other Hampshire records from the New Forest near Beaulieu. Not recorded in any of the other surrounding counties.

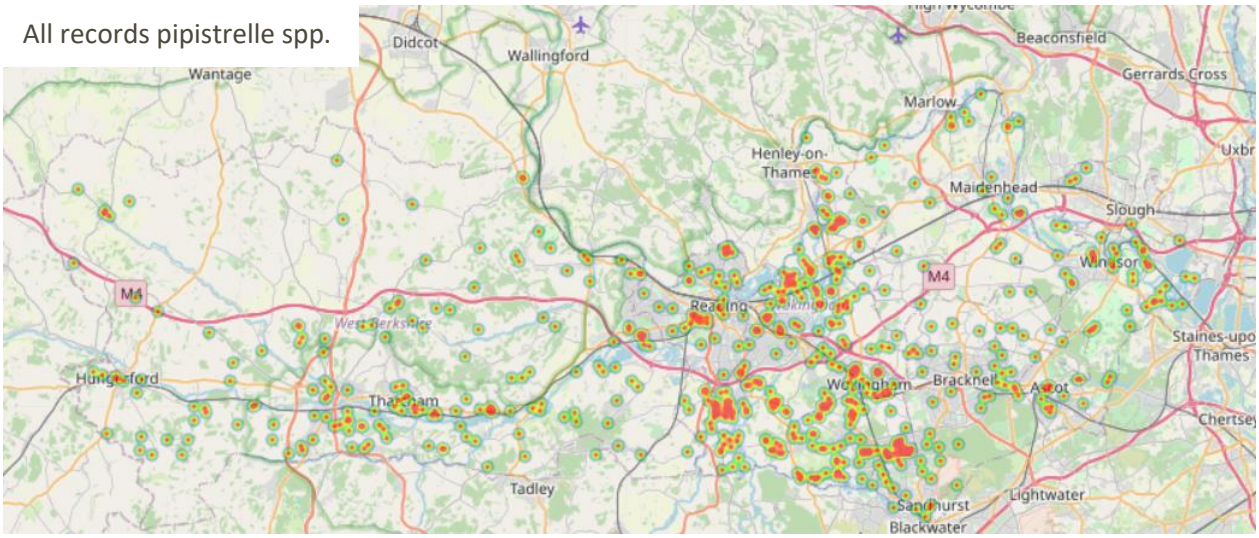
3.1.7 **Nationally** One of the rarest bats in the UK (sixteenth in Britain), with a distribution restricted mainly to the south coast. Common and widespread in southern Europe but rare at the northern edge of its range. A species of open habitat, especially areas of unimproved grassland.

3.1.8 **Current population** Estimated at between 1,000 and 3,000 bats. Geographical range is considered to be decreasing and the population estimate is considered data deficient but declining (Mathews, 2018). Considered at imminent risk of extinction on the IUCN Red list for British Mammals.

4 Pipistrelle species (*Pipistrellus* spp.)

4.1.1 Whilst pipistrelle calls are relatively distinct from other species and from each other there is some overlap and when bats are calling around 50kHz it can be difficult to attribute the calls to either common (*Pipistrellus pipistrellus*) or soprano (*Pipistrellus pygmaeus*) particularly where habitat type is not known. There will also be some overlap between common pipistrelle and Nathusius' pipistrelle (*Pipistrellus nathusii*) and Kuhl's pipistrelle (*Pipistrellus kuhlii*) at a lower frequency. Many roost records are based on the examination of droppings only and neither DNA analysis nor further survey has been conducted to distinguish further. In addition, common and soprano pipistrelle were only formally separated in 1999 so records that pre-date this do not distinguish species. As there are some 698 records of undifferentiated pipistrelle species they are explored separately here. The distribution very much reflects the nature of the records in that the majority are roost visits or internal inspections where droppings were found so primarily associated with dwellings.

All records pipistrelle spp.



4.1.2 **Known roosts** 397 roosts across the county, all are in buildings (where roost structure is given). There are 55 confirmed or suspected maternity roosts with only three hibernation records, two at Greenham Common and one at Remenham.

4.1.3 **Types of building/structure used** There are no records for tree roosts, two records in bat boxes, with the remaining records assumed to all be in buildings but for many, roost type is not recorded. Building types recorded are outbuilding (1), churches (2), boathouse (1), shed (1) and garages (4). Where details are given roost, types used include: in loft (96), behind wooden weatherboarding/cladding (11), behind hanging tiles (8), in soffit (2), missing mortar allowing access to ridge tile (1), under roof tiles (4), at gable ends (35), behind bargeboard (3), at eaves (1), flat roof (1), and in porch (1).

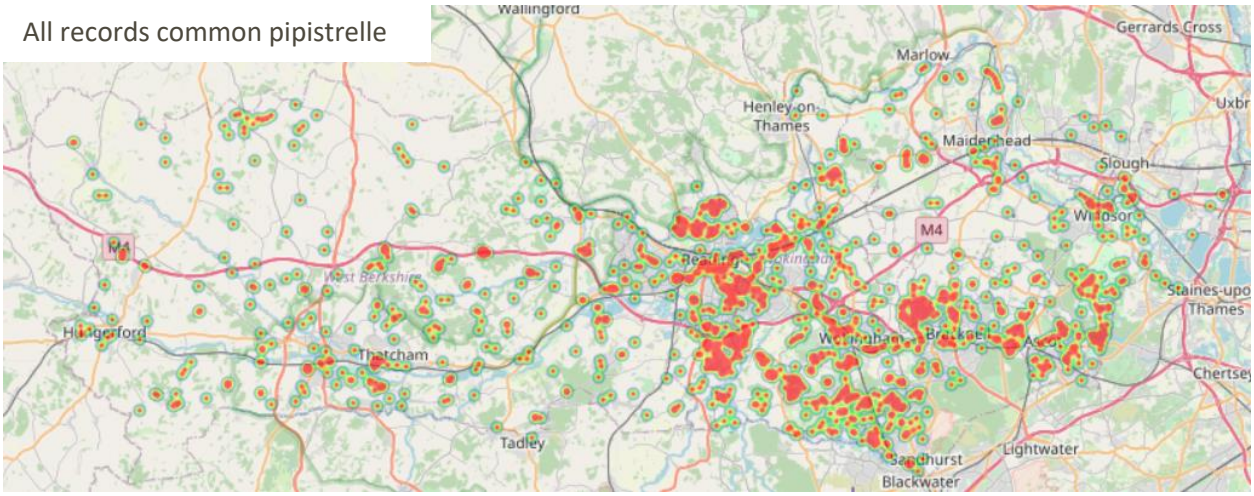
5 Common pipistrelle (*Pipistrellus pipistrellus*)

5.1.1 **County status** Recorded breeding. A total of 2,668 records of which 1,538 are from the past 10 years. 530 roost records of which 29 are maternity roosts. Earliest record 1964.

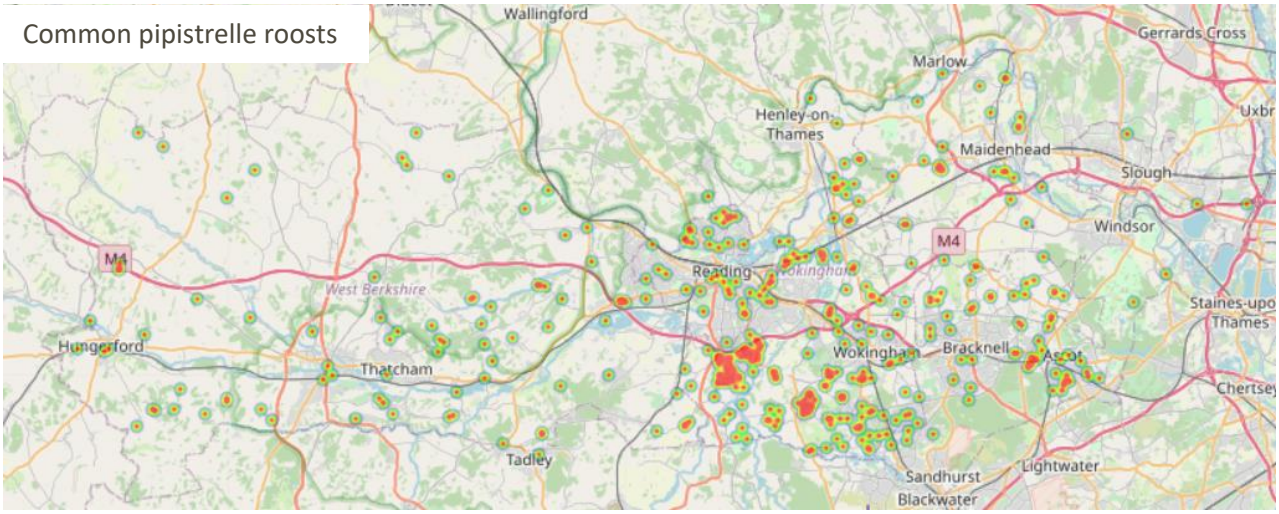
5.1.2 **Distribution** Widespread across the county occurring in all districts. As expected for this species the majority of records (1,975) are acoustic records of bats in flight. Bat in hand records consist of 97 care records and 52 bats caught at all but one of the National Nathusius' project sites but, perhaps surprisingly, at only one West Berks Living Landscape project site.

Photo: Claire Andrews

All records common pipistrelle



5.1.3 **Known roosts** 530 roosts across the county, all except 25 are in buildings (where roost structure is given). 29 of the roosts are confirmed maternity roosts with only four recorded hibernation sites.



5.1.4 **Types of building/structure used** Of the 29 recorded maternity roosts where roost type is recorded the following are used: dwelling - roost feature not recorded (1), behind weather boarding (1), behind hanging tiles (1), in soffit box (1), under roof tile (1), access point at gable end (4), hole around pipes in wall (1).

5.1.5 Non-breeding roosts, where roost type is recorded: 11 are in trees, of those one is a hollow elm, one in a woodpecker hole (tree species not given) and a woodpecker hole in horse chestnut; four other roosts are recorded in oak, ash, pine and horse chestnut. Bat boxes are also used with 13 records. The remaining records are assumed to all be in buildings but for many, roost type is not recorded: 81 of the records are listed as dwelling with no further roost details given. Other building types recorded are barns (10), leisure centre (1), farm buildings (6), garrison buildings (3), bridge (1), outbuilding (1), churches (3), and garages (2). Where details are given roost types used include: around windows (4), between secondary glazing (1), behind wooden weatherboarding/cladding (16), behind hanging tiles (29), access point around chimney (8), in soffit (5), horizontal expansion gap (1), lead flashing (2), missing mortar allowing access to ridge tile (10), under roof tiles (20), mortar gaps (2), cladding on dormer windows (8), at gable ends (14), behind bargeboard (1), at eaves (7), and in porches (3).

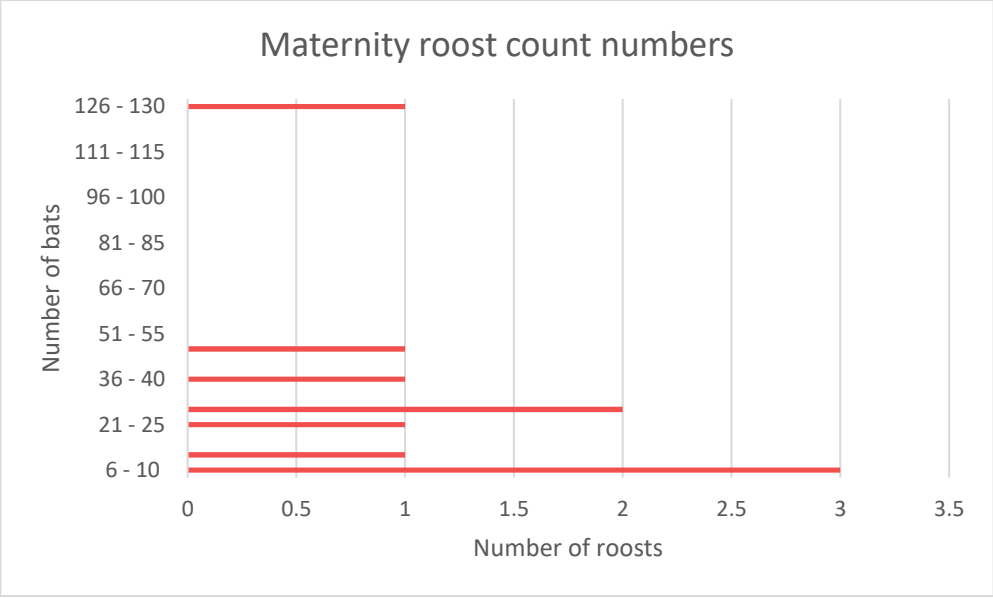
Droppings on wall below soffit access point of maternity roost in Mortimer. Photo: Claire Andrews

5.1.6 **Hibernation** Pipistrelle bats are not often recorded in hibernation at the regularly monitored sites frequented by the Myotis bats. One bat was recorded hibernating behind internal wooden cladding at the fire plane hibernaculum at Greenham Common for two consecutive years and in one year a single bat was found in one of the hibernation boxes at Clayfield Copse. Only two other sites are recorded: one in stables and the other when two bats were exposed when replacing a rotten window frame.

5.1.7 **Minimum and maximum maternity roost counts** Only 14 of the maternity roost records include the number of bats present and few appear to give a definite count. Minimum estimate is seven bats with a maximum count of 129 bats. The chart below shows the spread of the estimates and counts.

5.1.8 **Over the border** Recorded in all surrounding counties and considered widespread.

5.1.9 **Nationally** Second most common species in Britain, ubiquitous and widespread, found foraging in a range of habitat types with a flexible approach to foraging and tolerance of higher light levels and more disturbance than other species. Current population estimated at 3,040,000 (Mathews, 2018). Data deficient to make any conclusion on population trends but NBMP has shown significant population increase since 1999.



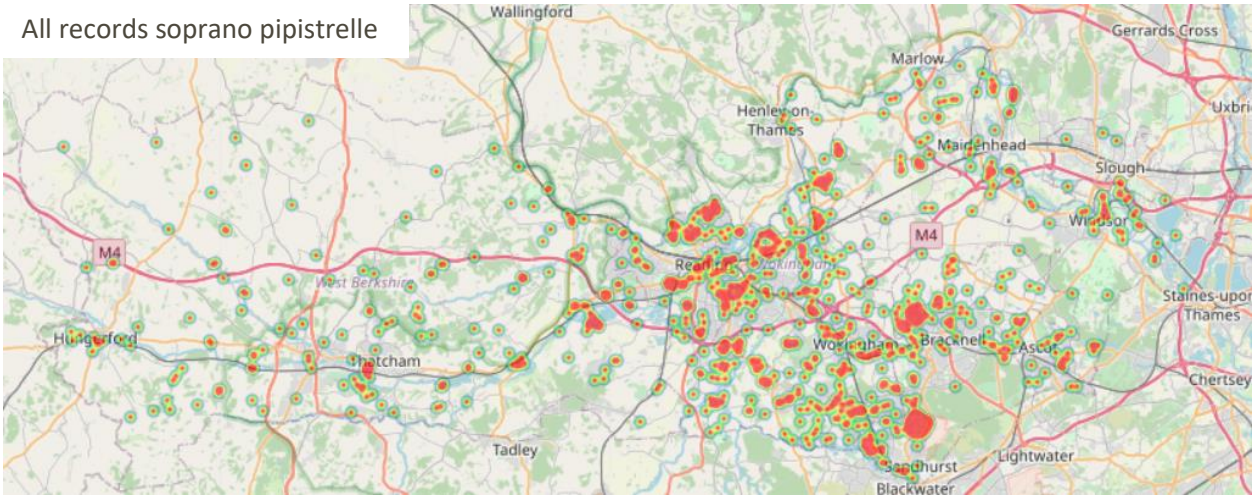
6 Soprano pipistrelle (*Pipistrellus pygmaeus*)

6.1.1 **County status** Recorded breeding. A total of 2,468 records of which 2,113 in the past 10 years with 363 roost records of which 53 are maternity roosts. Earliest record 2004 (only formally separated from common pipistrelle in 1999).

Photo: Claire Andrews

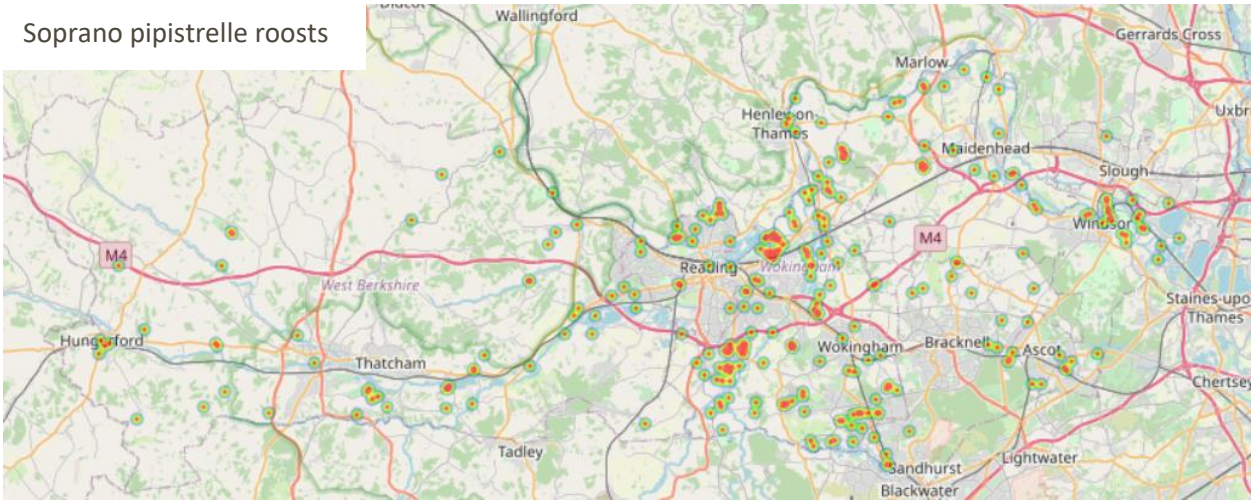
6.1.2 **Distribution** Widespread across the county occurring in all districts. Unsurprisingly for this species the majority of records (1,478) are acoustic records of bats in flight. A close inspection of the records reveals an association of this species with water, as might be expected, and to a lesser extent with woodland. In urban areas the bats tend to be recorded on the outskirts of those areas. Records include 562 bats in hand which stem from two main sources: regular monitoring of bat box schemes across three sites as part of West Berks Living Landscape project and captures during the NNPP. This is not unexpected as the trap sites are all in habitat preferred by this species, sopranos having been recorded at all seven of the sites in Berkshire. There are 53 care records.

All records soprano pipistrelle



6.1.3 **Known roosts** Of the 363 roosts all except 33 are in buildings (where roost structure is given). 53 of the roosts are confirmed maternity roosts with only one recorded hibernation site. There are an additional 182 records of soprano pipistrelle where they have been encountered on multiple occasions in the same bat boxes as part of the West Berks Living Landscape Project.

Soprano pipistrelle roosts



6.1.4 **Types of building/structure used** Of the 53 maternity roosts where roost type is recorded the following have been used: dwelling - roost feature not recorded (12), internally next to chimney (2), behind weather boarding (3), behind hanging tiles (1), in soffit box (1), under roof tile (1), access point at gable end (3), crevice near chimney (1), at eaves (2). Maternity roosts are also recorded in other buildings: in a barn between tiles and felt (1), two roosts in schools (one under a flat roof and the other behind wooden cladding), in a culvert (1) and behind weather boarding on a garage (1).

6.1.5 Non-breeding roosts: 22 are in trees of the following species: lime (1), oak (7), ash (4), cedar (1). None of the records provide details of the roost feature used. Bat boxes are also used with a total of 192 records, the majority of which are repeat records from regular monitoring of bat box schemes. Overall, eight different sites are represented each with a varying number of boxes.

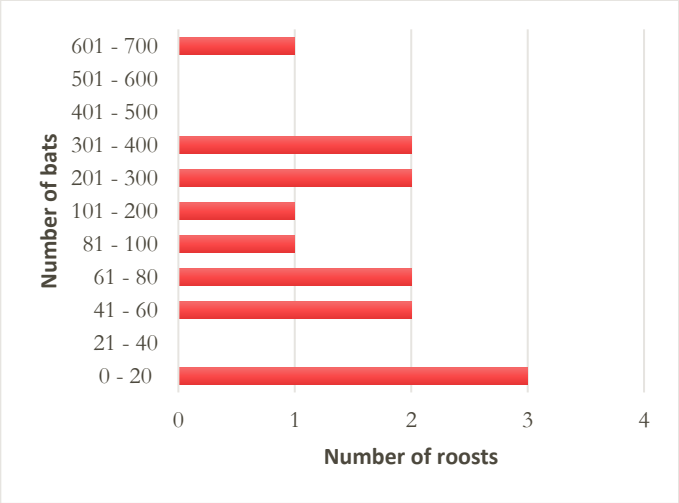
An unremarkable looking building with a maternity roost of soprano pipistrelle bats access point is just under eaves to the right of the dormer. Photo: Claire Andrews

6.1.6 The remaining records are assumed to all be in buildings but for many, roost type is not recorded. 54 of the records are listed as dwelling with no further roost details given.

6.1.7 Other building types recorded are barns (4), farm buildings (1), churches (2), in a pavilion (1) and garages (2). Where details are given roost types used include: around windows (1), behind wooden weatherboarding/cladding (10), behind hanging tiles (17), access point around chimney (10), in soffit (6), horizontal expansion gap (1), lead flashing (1), missing mortar allowing access to ridge tile (6), under roof tiles (17), mortar gaps (1), cladding on dormer windows (5), at gable ends (33), behind bargeboard (3), behind fascia board (1), at eaves (4), under a flat roof (1), gap by gargoyle (1), in porches (3) and one roost in thatch accessed at the eaves.

6.1.8 **Hibernation** Pipistrelle bats are not generally recorded in hibernation at the regularly monitored sites frequented by the Myotis bats. There is only one record of hibernating soprano pipistrelle which was recorded hibernating in stables.

6.1.9 **Minimum and maximum maternity roost counts** Only 16 of the 53 maternity roost records include the number of bats present but there appears to have been more effort to count the numbers of bats than for other species. The roost size on average is much larger than that seen for other species in the county. Minimum estimate was eight bats with a maximum count of 604 bats. The chart right shows the spread of the estimates and counts.



6.1.10 **Over the border** Recorded in all surrounding counties and considered widespread.

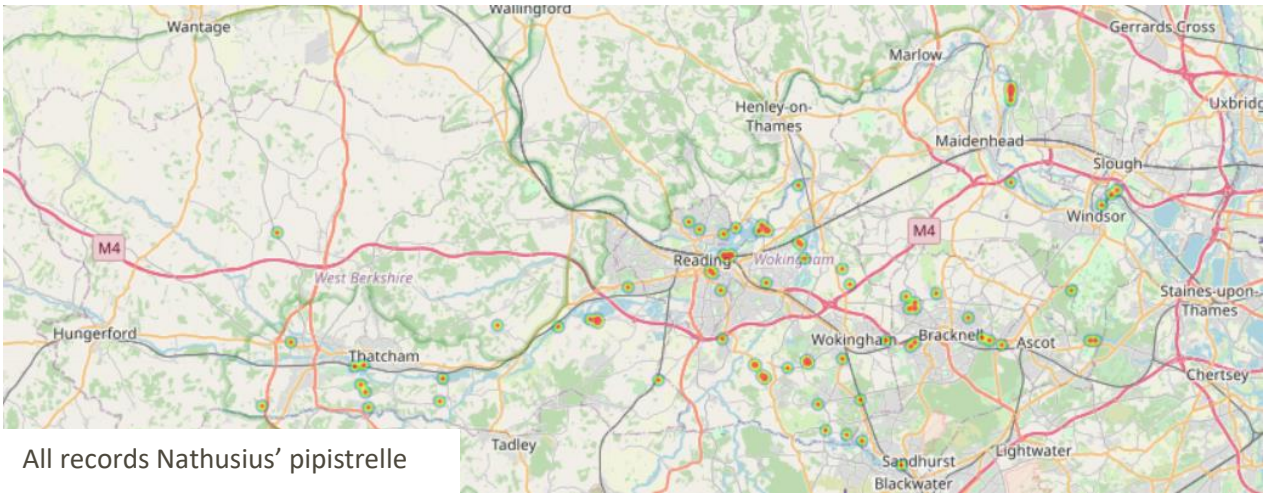
6.1.11 **Nationally** Most common species in Britain, ubiquitous and widespread, found foraging in a range of habitat types but more associated with wetland, riparian and other wet habitats and woodland than common pipistrelle. Current population estimated at 4,670,000. Data deficient to make any conclusion on population trends but NBMP has shown significant population increase since 1999.

7 Nathusius' pipistrelle (*Pipistrellus nathusii*)

7.1.1 **County status** Recorded breeding? A total of 124 records of which 120 in the past 10 years. Earliest record 1997.

Photo: Claire Andrews

7.1.2 **Distribution** Widespread across the county. A close inspection of the records reveals an association as might be expected for this species with water. There are three main areas where records appear in clusters away from water bodies: Arborfield, Bracknell and Caversham. However, as no systematic presence/absence recording has taken place it is difficult to draw any conclusions from this. Nathusius' calls are distinctive on the detector so acoustic records are fairly reliable.



All records Nathusius' pipistrelle

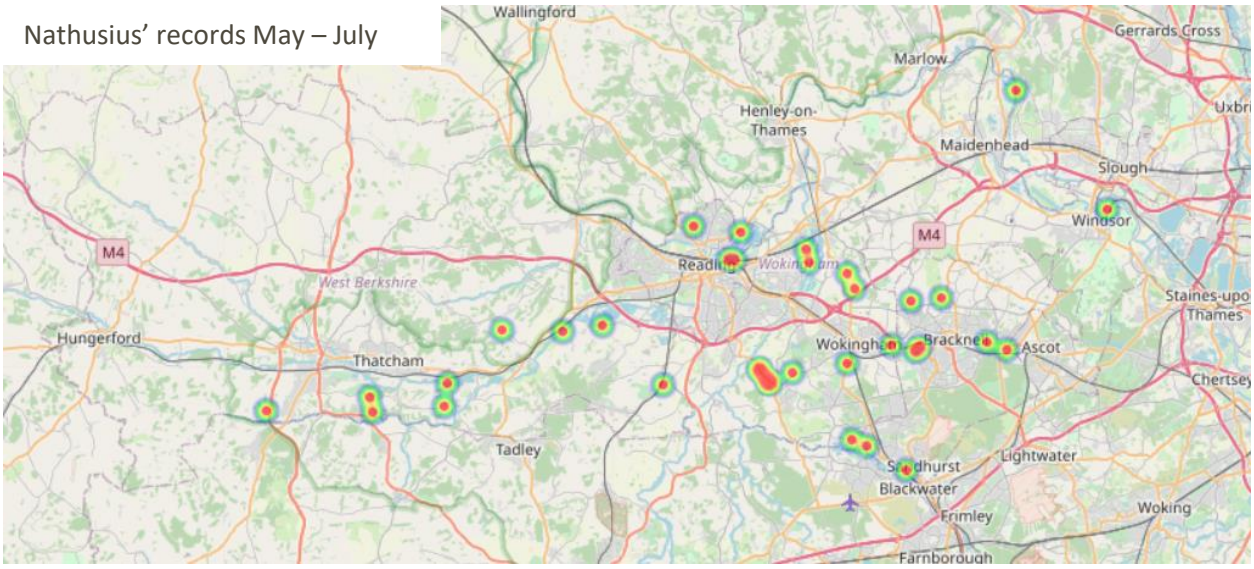
7.1.3 We also have a good number of in hand records as a result of the Nathusius' project. In total we have caught 20 Nathusius' at three sites: Hosehill, Caversham lakes, and Virginia Water. Two of the bats captured were juvenile bats. Of particular interest was a male juvenile bat caught at Caversham lakes in July, indicating the possibility of a maternity roost nearby. Bats have been caught pre- (9) and post- (21) maternity period, again an indication of year-round presence.

7.1.4 Two ringed bats have been recovered, one a Dorset-ringed bat recovered in Berkshire, the other a Berkshire-ringed bat recovered in Surrey. The former, an adult male, was discovered in a tree roost in Windsor Great Park in September 2020. It was ringed at Little-Sea National Nature Reserve, Studland as a juvenile in September 2018, a journey as the bat files of 100 miles. The latter was a bat recaptured in September 2016 at a site near Ankerwycke on the Runnymede estate, in Surrey. He was also an adult male, ringed in Berkshire in May 2016 at Hosehill Nature Reserve some 21 miles as the bat flies or 35 miles if you follow the river.

Harp trap set up at Caversham Lakes Photo: Claire Andrews

7.1.5 There are three care records, one dating back to 1997 from the Caversham area, one in 2017 in Wokingham and one in 2018 at the Museum of English Rural Life (which caused something of a Twitter storm).

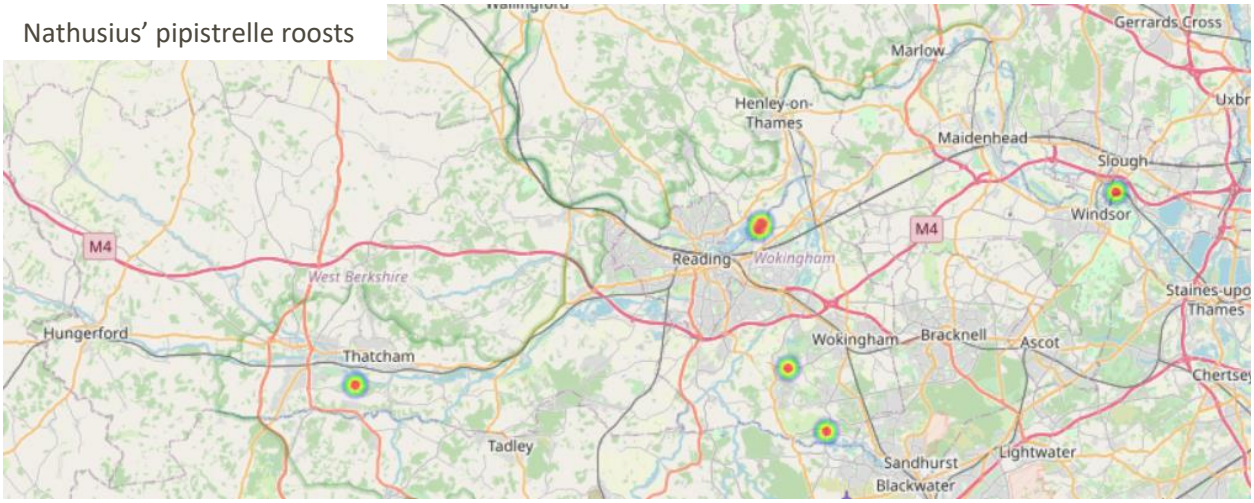
Nathusius' records May – July



7.1.6 There is a good spread in the records across the year indicating a year-round presence rather than just an autumnal influx. However, if only the months of May-July are selected the number of records is reduced from 124 to 52.

7.1.7 **Known roosts** There are six roost records: two tree roosts have been discovered, one in a tree at Bowdown Woods in 2019 and the other a ringed bat in a tree in Windsor Great Park in 2020. The four other roosts are in buildings, one, a possible maternity roost in the Sonning area is shared with a maternity roost of soprano pipistrelles. It is understood that droppings were confirmed by DNA analysis but to date no Nathusius' have been recorded emerging, initial indications were of a maternity roost but this is yet to be confirmed. Nathusius' have been recorded using bat boxes at Sonning lock sporadically since 2004 up to 2012. Two further roosts have been recorded in dwellings, one in Barkham where a single bat was recorded returning under hanging tiles and one in Finchampstead where scattered droppings confirmed by DNA analysis were recorded in a loft space. Both were considered day roosts for a low number of bats.

Nathusius' pipistrelle roosts



7.1.8 **Hibernation** No records of hibernating bats.

7.1.9 **Minimum and maximum maternity roost counts** No records.

7.1.10 **Over the border** Recorded in all surrounding counties and considered widespread. Maternity roosts recorded in Surrey.

Nathusius' captured at Caversham Lakes. Photo: Claire Andrews

7.1.11 Nationally There have been 2,689 captures of Nathusius' pipistrelle as part of the National project including breeding females and juveniles. There are records of maternity colonies in Kent, Northumberland and on the Surrey/Greater London border. In addition to indications of a resident population there have been nine long distance migratory records, the longest being a bat ringed in Latvia recovered 1,499km away in Feltham, London. Classified as Near Threatened on the IUCN Red list for British Mammals.

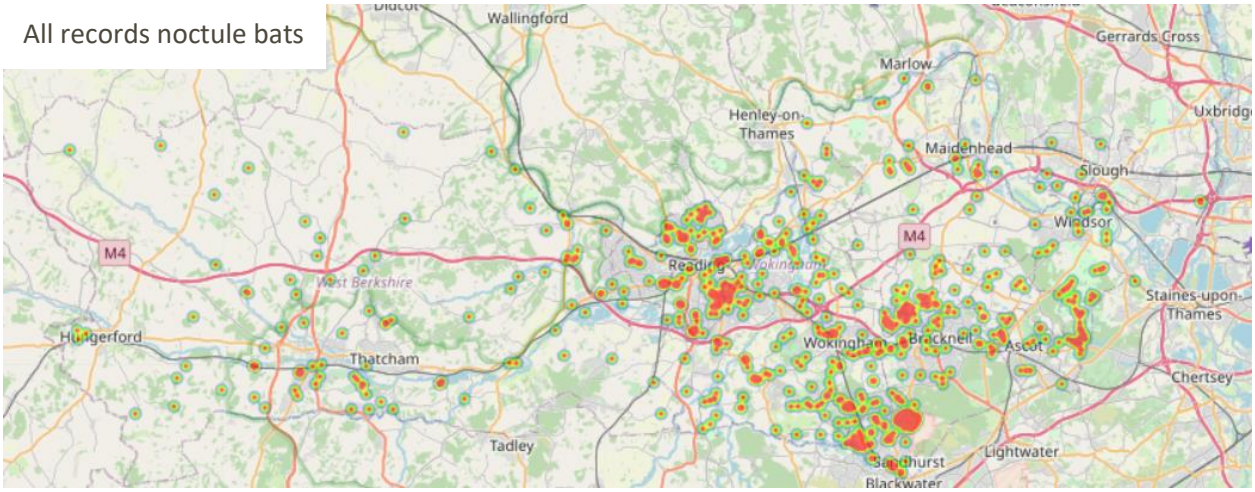
8 Noctule (*Nyctalus noctula*)

8.1.1 **County status** Recorded breeding. A total of 1,330 records of which 882 in the past 10 years.

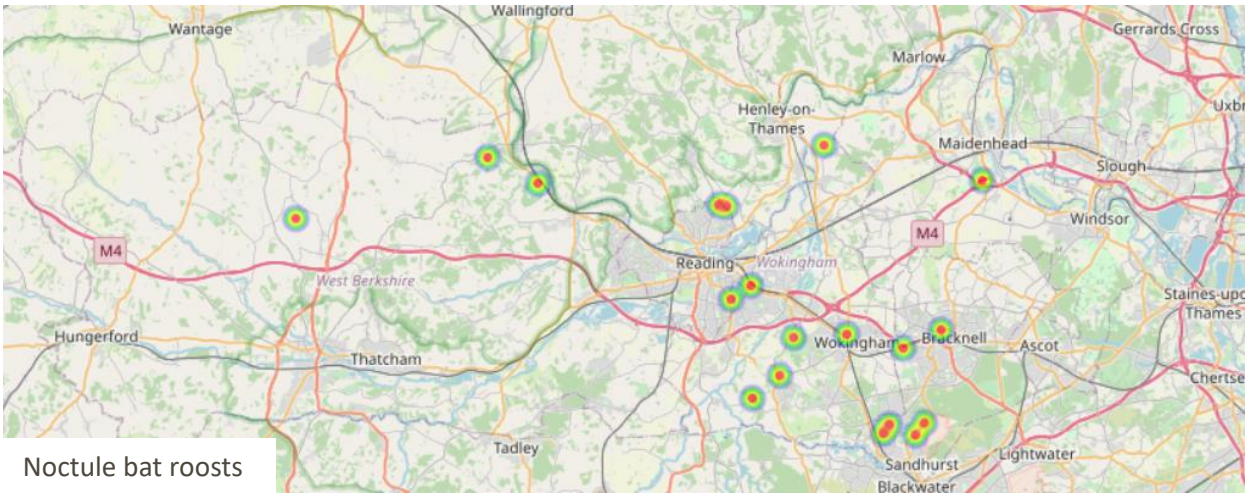
Photo: Claire Andrews

8.1.2 **Distribution** Records are heavily biased towards the centre of the county around Reading, Wokingham, Bracknell and Crowthorne with sparse records in West Berkshire and even fewer north of the M4, records around Windsor and Maidenhead also sparse. The majority of roost records are to the east of Reading with only three roost records in West Berkshire, all north of the M4. There are four care records the most recent from 2017 and two from the mid 90's, one an adult bat and the other a pup, both associated with the roost at Blackhouse Woods. The fourth care record is Rose (bat shown in photo above), a noctule bat collected from a vet in Woodley, that was a long-term resident and educational bat looked after by several members of the group: she was too badly injured to be released and lived in captivity for 16 years. Seven other in hand records: three from captures as part of the NNPP at Bearwood, two records from Greenham Business Park and one in boxes at Bowdown Woods.

All records noctule bats



8.1.3 **Known roosts** Twenty-two recorded roosts across the county, of those two are in buildings, two in a bat boxes and the rest in trees. Nine of the roosts are confirmed maternity roosts. Earliest record dates to 1995, 12 roost records within past 10 years.



Noctule bat roosts

8.1.4 **Types of building/structure used** Where tree species is recorded all roosts are in ash (2), oak (3) or beech (1) and where the roost feature type is recorded it was either a woodpecker hole (5) or a rot hole (1). Height above ground varies from 2.4m to 10m. The two records in buildings were identified by droppings alone, one was 40 droppings in a loft space above a shop in Bracknell town centre confirmed by DNA analysis, the other was three droppings in the porch of a pumping station. All the maternity roosts except one are in trees, four of the roosts are in the same woodland (Blackhouse Woods) recorded at different times. The roosts here were studied fortnightly during the summer months between 1992 and 1998: the colony moved between tree roosts and shared the roost with up to 80 Daubenton's bats. Three of the roosts no longer exist but in 2010 the colony was re-located using another tree in the same woodland. The only maternity roost not in a tree is in a domestic dwelling.

8.1.5 **Hibernation** Not recorded in hibernation.

8.1.6 **Minimum and maximum maternity roost counts** There are four roost counts; 7, 10-15, 60 (shared with up to 80 daubenton's bats) and 71.

8.1.7 **Over the border** Known to hibernate in large numbers (up to 120 bats) in 1FW bat hibernation boxes near Thursley in Surrey.

8.1.8 **Nationally** Considered a tree-dwelling species with few roosts recorded in buildings. One of our earliest emerging bats foraging high above suitable habitat. Considered to be common and widespread throughout the UK. It is the sixth most common species in England with the current population estimated at 565,000, considered data deficient for analysis of population trends and with no significant trend shown in NBMP.

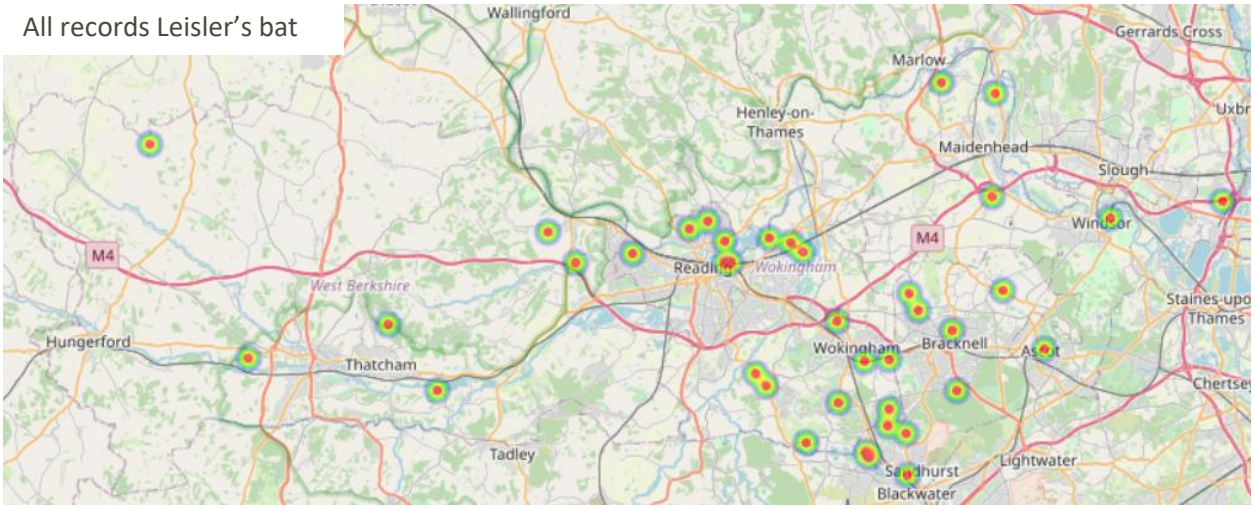
9 Leisler's bat (*Nyctalus leisleri*)

9.1.1 **County status** Not resident. A total of 44 records, of which 40 were recorded in the past 10 years. Earliest record 1979. However, all records are acoustic records. Acoustically Leisler's can be confused with noctule bats and even in some cases serotine bats, acoustic data should therefore be treated with caution. Further doubt is thrown on the validity of the acoustic records because there are no in hand records nor confimed records from DNA analysis. The complete absence of confirmed records of this species from the county is interesting, especially as we have records for species considered to be rarer in this part of the country. It does point to the absence of the species from the county, particulary as a breeding species but possibly in its entirety.

Photo Derek Smith

9.1.2 **Distribution** Acoustic records are heavily biased towards the centre of the county around Reading, Wokingham, Bracknell and Crowthorne with sparse records in West Berkshire, records around Windsor and Maidenhead are also sparse

All records Leisler's bat



9.1.3 **Known roosts** None recorded.

9.1.4 **Hibernation** None recorded.

9.1.5 **Over the border** More regularly recorded towards London and Oxford, also scarce in Surrey but recorded in all surrounding counties.

9.1.6 **Nationally** Forages at woodland edge, in wooded areas and over pasture. Patchy distribution across southern England, absent from Cornwall and the west of the country. Also recorded in Dumfries and Galloway. Internationally important population in Northern Ireland. Known to roost in bat boxes, tree holes and buildings. Hibernation sites are unknown. Data deficient for population estimate but considered to be around 24,000-40,000 ranking it thirteenth in terms of British population size. Considered data deficient for analysis of population trends and no significant trend shown in NBMP. Classified as Near Threatened on the IUCN Red list for British Mammals.

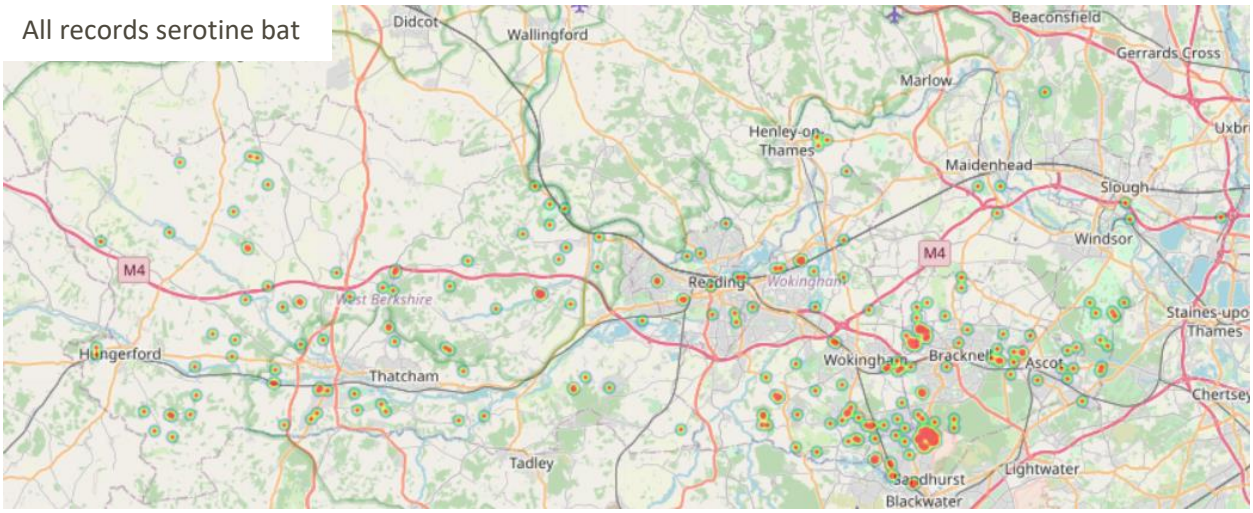
10 Serotine (*Eptesicus serotinus*)

10.1.1 **County status** Recorded breeding. A total of 343 records of which 248 in the past 10 years. Earliest record 1970.

Photo: Claire Andrews

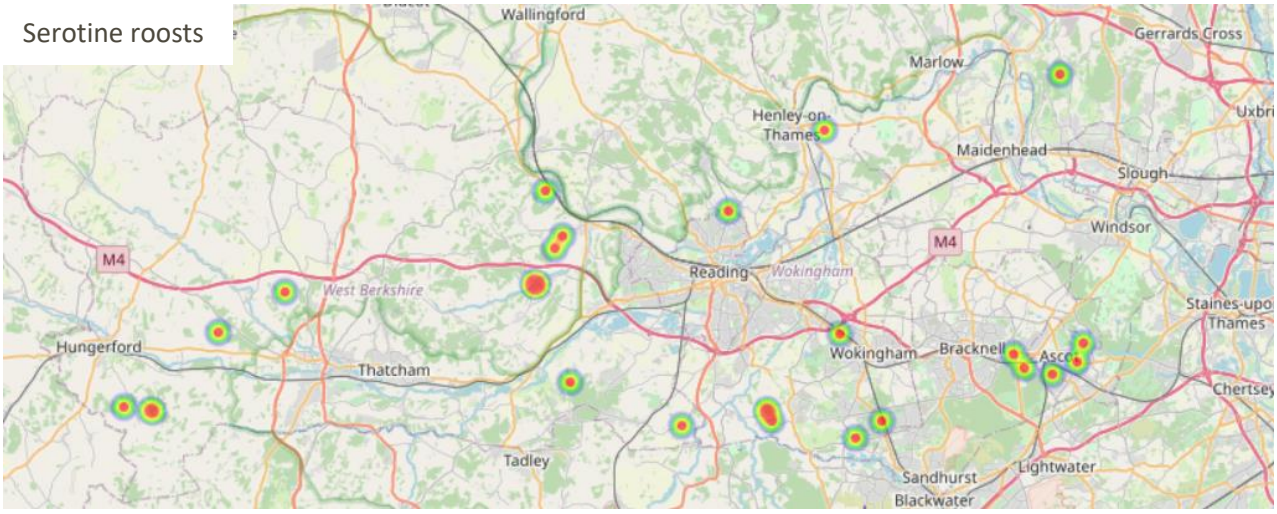
10.1.2 **Distribution** Widespread across the county occurring in all districts, well represented in Bracknell Forest area. Acoustically fairly distinctive though there can be some overlap with Nyctalus spp. in certain habitats. There are only five care records and two in hand records from captures as part of the West Berks Living Landscape project. None were caught as part of the Nathusius' project, but they would not be expected with the protocol used.

All records serotine bat



10.1.3 **Known roosts** Thirty recorded roosts across the county, all of which are in buildings. Five of the roosts are confirmed maternity roosts. Earliest record dates to 1995, 23 roost records within past 10 years.

Serotine roosts



10.1.4 **Types of building/structure used** Where building type is recorded, roosts are in houses (9), bungalow (1), mansions (2), garage (1), churches (3) and school/other building (3). Where roost location is recorded roosts are within the loft void (10) inside garage (1) or inside a church (3).

Serotine droppings inside a church. Photo: Claire Andrews

10.1.5 **Hibernation** Not recorded in hibernation in the county.

10.1.6 **Minimum and maximum maternity roost counts** Only one record provides a count: 14 individuals.

10.1.7 **Over the border** Single bat regularly recorded in hibernation in lime kiln in Surrey.

10.1.8 **Nationally** A species of parkland and woodland edge, emerging early and with roosts mainly associated with buildings. Restricted to southern England, and parts of Wales. Current British population estimated 136,000 making it the seventh most common species. Considered data deficient for analysis of population trends with no significant trend shown in NBMP. Considered at imminent risk of extinction on the IUCN Red list for British Mammals.

11 Natterer's bat (*Myotis nattereri*)

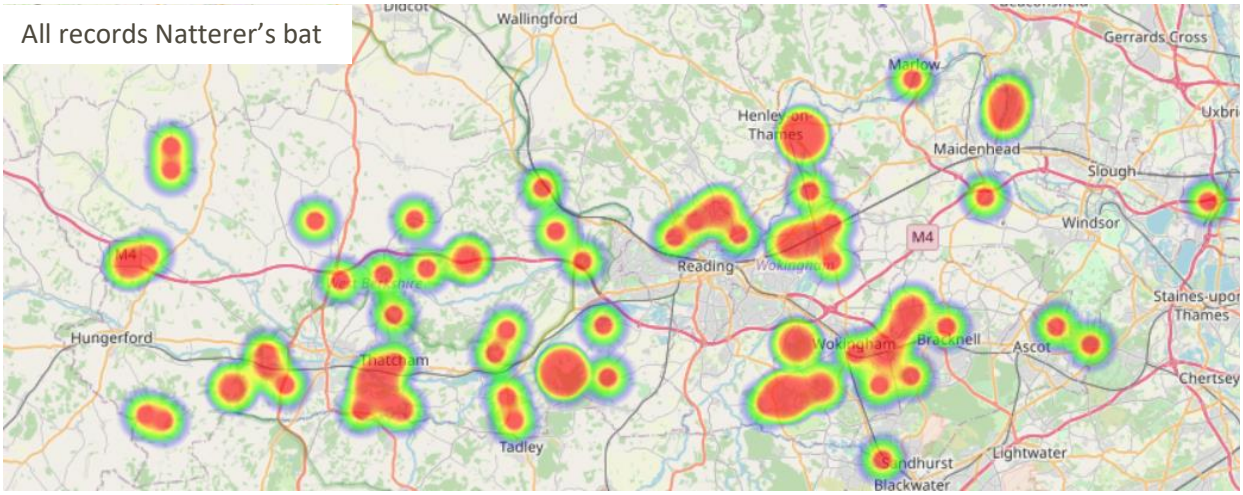
11.1.1 **County status** Recorded breeding. A total of 365 records of which 222 in the past 10 years. The majority of the records (183) are from repeat counts at known hibernations sites. Earliest record 1967.

Photo: Claire Andrews

11.1.2 **Distribution** Widespread across the county occurring in all districts. Only 56 of the records are acoustic records of bats in flight. As with other Myotis, acoustic records should be treated with caution but the abundance of confirmed records for this species greatly adds to confidence when looking at distribution. Bat in hand records: Natterer's have been caught at five of the seven Nathusius' project sites and are regularly caught at Greenham Common, Bowdown Woods and Crookham Common (three sites monitored as part of the West Berks Living Landscape project). There are five care records.

11.1.3 **Known roosts:** Thirty-three recorded roosts across the county. All except two are in buildings (where roost structure is given). Four of the roosts are confirmed maternity roosts with a further two suspected maternity roosts and eight recorded hibernation sites.

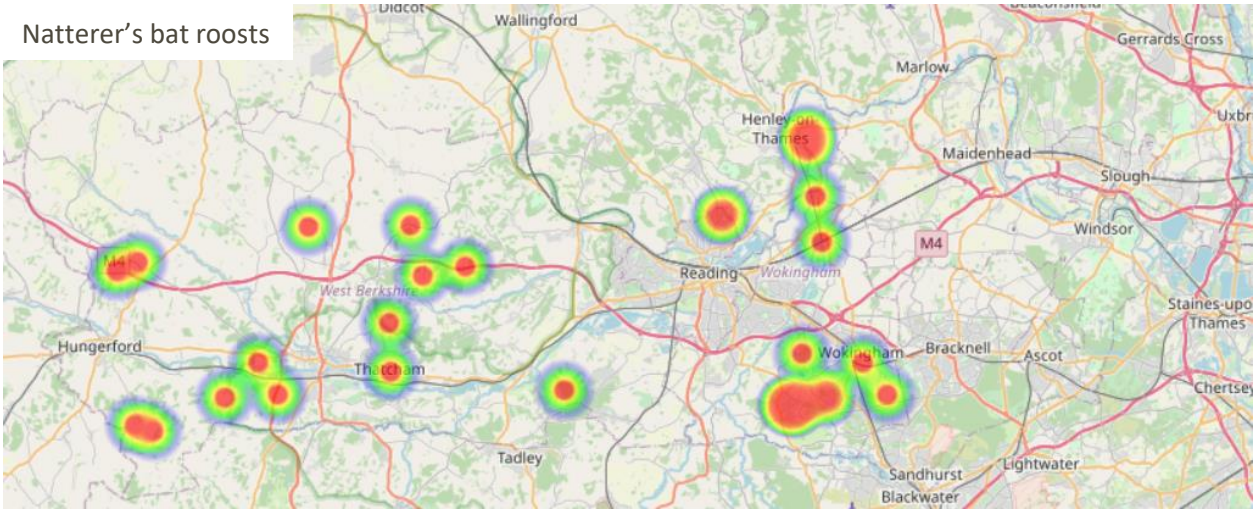
All records Natterer's bat



11.1.4 **Types of building/structure used** There are four confirmed maternity roosts: one in a church, one in a rot hole in an ash tree, one in a modern detached house where bats were observed emerging from the gable end and the fourth details are not given. There are two further unconfirmed maternity roots: the first is in the mortice joints of a timber-framed barn and the other is inferred from bat care records where no roost has been located but a newly volant pup, a lactating female and a pup were all collected from within 100m of each other in Finchampstead in 2019-2020.

11.1.5 For non-maternity roosts, where roost type is recorded, roosts are in houses (5) of which three are in lofts and one is in ridge tiles and the other roost location is not recorded. Other buildings include mansions (2) only one of those has roost location specified and was in the loft, barns (2), bridge (1), farm building (1) roosting under ridge tiles, outbuilding (1), school/other building (2), one of which was recorded behind weatherboarding and finally one in a tree in a south-west facing rot hole 4m above the ground.

Natterer's bat roosts



11.1.6 **Hibernation** Natterer's have been recorded at 11 hibernation sites: four of the sites have been regularly monitored with Natterer's bats regularly encountered. Hibernacula include an ice house in Wokingham where low numbers (up to 12 bats) have been recorded annually since 1996, most recently in 2020; an underground chalk mine in Yattendon where low numbers (up to 26 bats) have been recorded since 1995, most recently in 2019; an underground chalk tunnel at Remenham where reasonable numbers (up to 32) are recorded, first in 1975 with regular monitoring and records since 1984, most recent record 2020; an underground ice house/store at Ufton with bats in low numbers (up to 19) since 1995, most recently 2020. The other sites include drainage holes in a motorway bridge over the River Loddon, a storeroom, a mansion house cellar, a mansion house stairs and two barns.

11.1.7 **Minimum and maximum maternity roost counts** Only two records provide a count or estimate of numbers. For one site no formal count was conducted but it was estimated that 20 bats were present, for the other a single count took place in June 2020 with 15-20 bats recorded emerging.

11.1.8 **Over the border** Recorded in all surrounding counties and considered widespread.

11.1.9 **Nationally** Primarily a woodland species roosting in old buildings and trees. Widespread throughout much of the UK, patchy distribution across Scotland. Current British population estimated at between 414,000 and 973,000 making it the fourth most common species. Considered data deficient for analysis of population trends but the NBMP from the most recent data has tentatively concluded that the population is increasing.

Natterer's bats behind boards at Bearwood Ice house. Photo: Claire Andrews

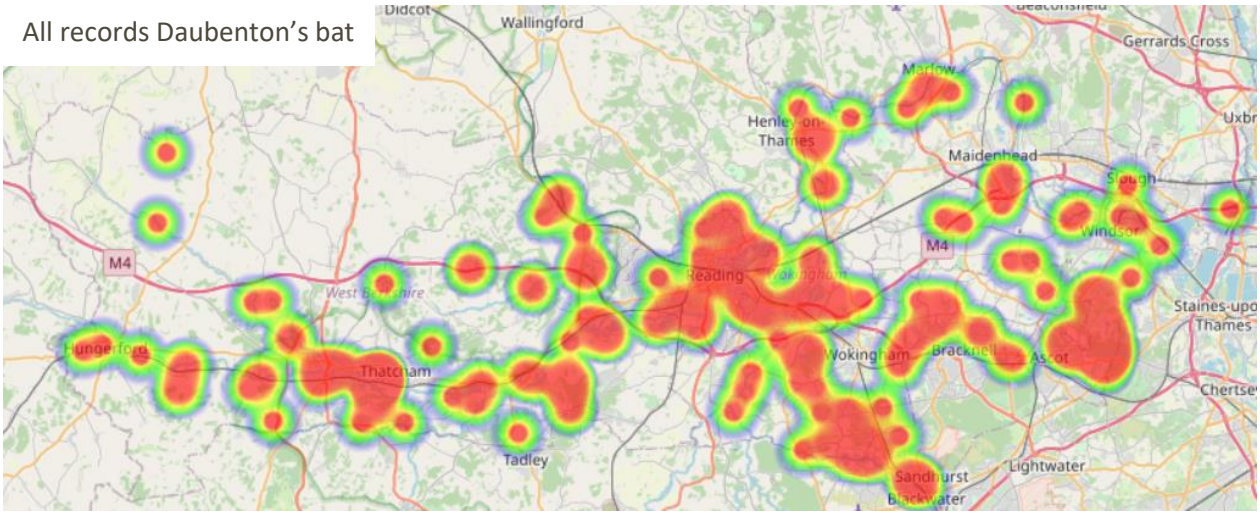
12 Daubenton's bat (*Myotis daubentonii*)

12.1.1 **County status** Recorded breeding. A total of 948 records of which 555 in the past 10 years. Earliest record 1975.

Photo: Claire Andrews

12.1.2 **Distribution** Widespread across the county occurring in all districts, the records show a strong association with rivers and other large waterbodies though this is likely to be biased by the fact that many of the surveys for this species focus on waterbodies (for example the NBMP Waterway Survey which accounts for 22% of the records). The majority of the records are acoustic records of bats in flight; as with other Myotis species, acoustic records should be treated with caution. However, the Daubenton's call in typical habitat coupled with a distinctive flight style means acoustic records for this species are more reliable. Daubenton's were caught often in large numbers at all seven of the Nathusius' project sites - a total of 235 captures - and are regularly caught at Greenham Common, Bowdown Woods and Crookham Common (three sites monitored as part of the West Berks Living Landscape project). There are 12 records of injured bats.

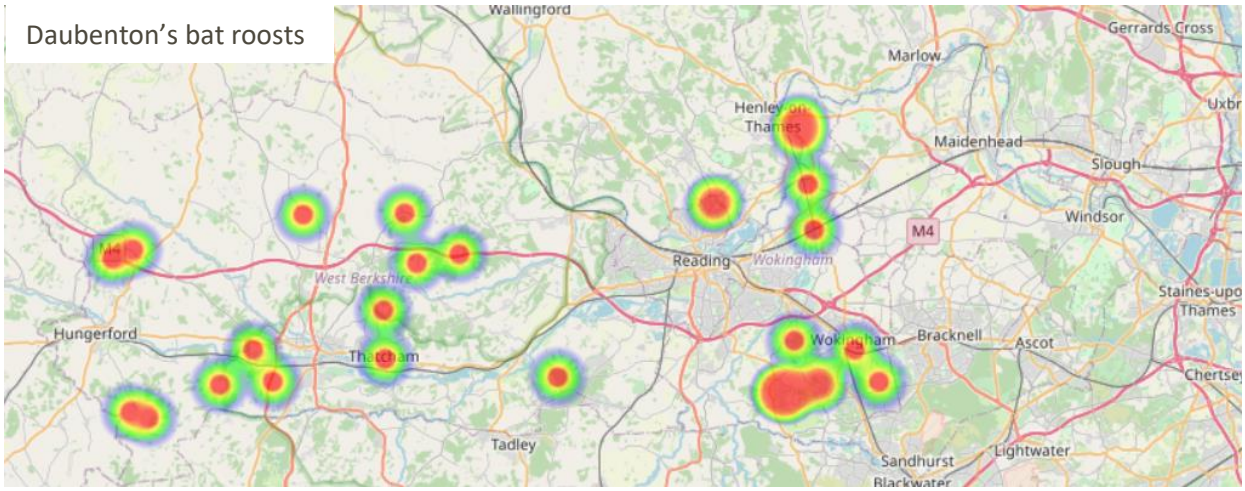
All records Daubenton's bat



12.1.3 **Known roosts** Eighteen recorded roosts across the county, all in buildings bar two in trees. Three of the roosts are confirmed maternity roosts with eight recorded hibernation sites.

12.1.4 **Types of building/structure used** Where roost type is recorded roosts are trees (2), a lock (1), a bridge (1) a mill building (1) and a culvert (1). The culvert supports a maternity roost and may also be used in winter, the two other maternity roosts are in trees. One of the latter is no longer present but was monitored for several years at Blackhouse Woods in Caversham being a shared roost with noctule bats. The noctule colony has been relocated elsewhere in the wood and there are indications that the Daubenton's colony is still active, but its location is unknown. The third maternity roost is in a rot hole low down (about 4m above ground) in a willow tree.

Daubenton's bat roosts



12.1.5 **Hibernation** Daubenton's have been recorded in low numbers at eight hibernation sites: at five of the regularly monitored sites Daubenton's are occasionally encountered, including the ice house in Wokingham monitored since 1996 where there is only one record of a single Daubenton's bat. The underground chalk tunnel at Remenham, monitored sporadically since 1994, has had low numbers of Daubenton's but in the four most recent visits (2016, 2018, 2019 and 2020) they were recorded in double figures in each visit (up to 29 bats). Low numbers (up to 6) have been recorded at an underground chalk mine at Yattendon, first in 2001 with regular monitoring since and most recently recorded in 2020. An underground ice house/store at Ufton, monitored regularly since 1995, had a single Daubenton's recorded in 2011. The other sites include a school, a mansion house cellar and a single record in a chalk cave.

Daubenton's bats in a Chalk mine in Yattendon. Photo: Claire Andrews

12.1.6 **Minimum and maximum maternity roost counts** The roost in the Thames culvert has a peak count of 100 bats. The roost at Clayfield Copse shared with a colony of noctule bats was monitored from 1992 to 1998 with a peak count of 80 Daubenton's bats.

12.1.7 **Over the border** Recorded in all surrounding counties and considered widespread.

12.1.8 **Nationally** Predominantly associated with freshwater habitats. Fairly widespread up to northern Scotland. Current British population estimated at 1,030,000 making it the third most common species. Considered data deficient for analysis of population trends. NBMP considers the population to have been stable since 1999.

13 Bechstein's bat (*Myotis bechsteinii*)

13.1.1 **County status** Not recorded breeding, Resident. Only two contemporary records are held for this species in Berkshire.

13.1.2 **Distribution** Both records are from the same site in Remenham, so it is impossible to infer any distribution pattern. A third record from 1901 appears to be of a bat hibernating in the same tunnel.

13.1.3 **Known roosts** No recorded non-hibernation roosts in Berkshire. Likely to be under-recorded as, although a roost in a dwelling house is known of in Surrey, the species is primarily tree-dwelling.

Photo: Claire Andrews

13.1.4 **Hibernation** Twice recorded in hibernation, one in 2018 and two bats in 2020, in an underground chalk tunnel. Recorded free hanging (see photo below) and in crevices within the tunnel.

Bechstein's in the chalk tunnel at Remenham. Photo: Claire Andrews

13.1.5 **Over the border** Recorded in Hampshire, Surrey, Buckinghamshire, Oxfordshire and Wiltshire. Between 2007 and 2011 ten bat groups (North Buckinghamshire, Cornwall, Devon, Dorset, Gloucestershire, Kent, Oxfordshire, Somerset, Surrey, and Worcestershire) took part in a four-year project to map the UK distribution of the Bechstein's bat.

13.1.6 The project added considerably to the known range of the species in the UK extending it north and identified hotspots in the distribution of breeding colonies. Sadly, Berkshire was not part of the project. The apparent dearth of records in Berkshire is likely to be due to the species' elusive nature as it is not often found in buildings and, as with all the Myotis bats, it is difficult to attribute calls to species level. The rarity of this species in the county would lead to lower confidence when attributing calls to this species. Berkshire does, however, support areas of ancient broadleaved woodlands, in particular those of oak and ash known to be favoured by the species. Netting work undertaken at Bowdown Woods and Crookham Common has yet to reveal the species, but it may only be a matter of time.

13.1.7 **Nationally** Predominantly associated with broadleaved woodland. Restricted distribution across the south of England with population centres in Devon, Dorset, Gloucestershire, Isle of Wight, Somerset and Wiltshire. There have also been two recent records from Wales and the identification of several roosts in Surrey in 1992. Current British population estimated 21,800 ranking it eleventh in terms of British population size. Considered data deficient for analysis of population trends but evidence of recent declines.

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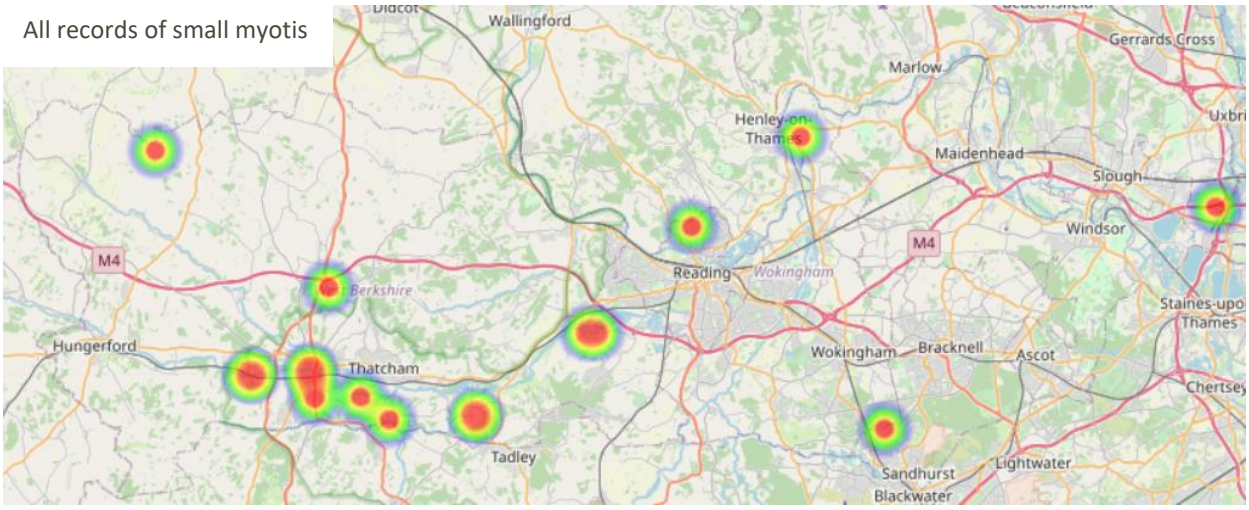
14 Small Myotis (*Myotis mystacinus, M. brandtii, M. alcathoe*)

14.1.1 The small Myotis, also often referred to as WABs (whiskered/Alcathoe/Brandt's), are cryptic species that are often considered together. Whiskered (*Myotis mystacinus*) and Brandt's bats (*Myotis brandtii*) were only separated in the 1970s while Alcathoe was new to science in 2001 and first reported in the UK in 2010. Acoustic records are also often simply classified as Myotis spp. due to the considerable overlap in their echolocation parameters. With no further attempt to classify to species, it is therefore likely that these species are under recorded. Where acoustic data has been submitted as whiskered or Brandt's these have been re-classified as WAB due to the low level of confidence in correct species identification. Only records that involve in hand ID or DNA analysis of droppings have been recorded at the species level. In addition, all hibernation records have been submitted as WAB due to the difficulty in separating these species without disturbing them during hibernation.

14.1.2 **Distribution** There are records of WABs hibernating at two sites in Berkshire, one in Yattendon and one in Remenham. The Yattendon records date back to 1995 and most years since, most recently recorded 2019. WABs have also been recorded hibernating at the tunnel at Remenham, most recently in 2018. Other than hibernation records the remaining acoustic records for WAB number just 11. The distribution map below shows all WAB records along with confirmed records for individual species. The records are concentrated in West Berkshire and do largely seem to be associated with the riverine corridors of either the Kennet or the Thames.

All records of small myotis



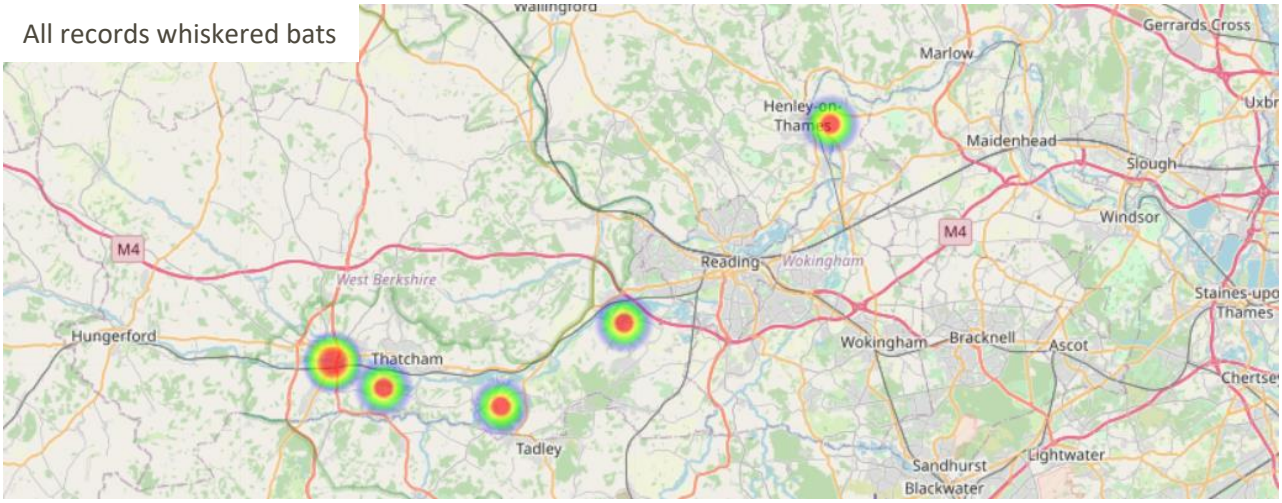
15 Whiskered bat (*Myotis mystacinus*)

15.1.1 **County status** Resident. Breeding not confirmed. There are only eight confirmed records for this species. Two of those are injured bat records from the Newbury area from 2017. In 2016 a juvenile female bat was caught at Hosehill as part of the Nathusius' project suggesting that there may be a maternity roost nearby. In 2018 an adult male and a parous female were again caught at Hosehill. A single female bat was also netted at Bowdown Woods in 2016. Two older records from 1994 and 1995 possibly indicate the location of roosts, one near Aldermaston and the other near Remenham, but there is not sufficient detail in the records to be certain.

Photo: Claire Andrews

15.1.2 **Distribution** The sporadic nature of the records makes it difficult to infer any pattern. However, all of the records, except one by the Thames, are close to or in habitat associated with the River Kennet in West Berkshire. Their absence from the Reading and Wokingham areas which generate a lot of records for other species, largely due to more commercial surveys being carried out in these larger population centres, is notable. The pattern shown by this species, although data deficient, potentially represents a more realistic distribution than that seen for some other species.

All records whiskered bats



15.1.3 **Known roosts** None recorded.

15.1.4 **Hibernation** There are several known hibernation sites across the county for Myotis bats but where the small Myotis are concerned they are identified as WAB rather than to species level (see WAB entry above for details).

15.1.5 **Over the border** In the south of England whiskered bats are generally considered to be more abundant than Brandt's bats. This pattern is reflected in our neighbouring counties, all of which have records for this species.

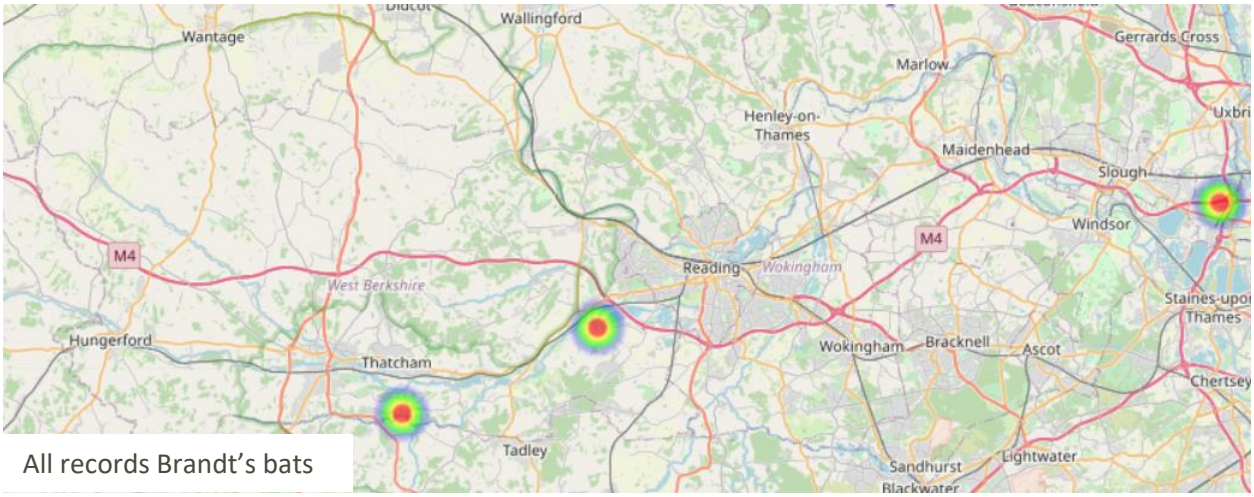
15.1.6 **Nationally** A species of edge habitats. The ratio of Brandt's to whiskered bats increases from west to east and from south to north in Britain (Mathews, 2018). Mathews also cites expert opinion that "there is a ratio of approximately 10:1 of captures of whiskered compared with Brandt's bats at swarming sites, woodland and hedgerows". Data deficient for estimate of population but one estimate puts the population around 40,000 (Harris, 2008) ranking it ninth in terms of British population size. Considered data deficient for analysis of population trends. NBMP considers the population to be stable.

16 Brandt's bat (*Myotis brandtii*)

16.1.1 **County status** Resident. Not recorded breeding. There are only three confirmed records for this species: a single record from 1981 of an individual bat netted in the Slough area, a female Brandt's caught in Crookham Gully in 2013 indicating the possibility of a nearby roost and a single Brandt's bat caught at Hosehill in 2017 as part of the Nathusius' project (photo right). ID of the latter was also confirmed by DNA analysis of the droppings sample and the bat was a juvenile, again indicating the possible presence of a nearby roost.

Photo: Claire Andrews

16.1.2 **Distribution** The two contemporary records were recorded close to or in habitat associated with the River Kennet.



All records Brandt's bats

16.1.3 **Known roosts** None recorded.

16.1.4 **Hibernation** There are several known hibernation sites across the county for Myotis bats but where the small Myotis are concerned they are recorded as WAB rather than to species level (see WAB entry above for details).

16.1.5 **Over the border** In the south of England whiskered bats are generally considered to be more abundant than Brandt's bats, nonetheless Brandt's are recorded in all of our neighbouring counties.

16.1.6 **Nationally** A species of edge habitats with a preference for good quality woodland. Increasing proportion of Brandt's to the east and north in comparison to whiskered. Less widespread than whiskered. Data deficient for estimate of population but one estimate puts the population around 40,000 (Harris, 1995) ranking tenth in terms of British population size. Considered data deficient for analysis of population trends. NBMP considers the population to be stable.

17 Alcathoe (*Myotis alcathoe*)

17.1.1 **County status** Not recorded in Berkshire

17.1.2 **Distribution** Unknown in Berkshire.

17.1.3 **Known roosts** None recorded in Berkshire.

17.1.4 **Hibernation:** As for whiskered and Brandt's bats, records of hibernating bats are considered together as WAB.

Photo: Claire Andrews

17.1.5 Over the border Recorded in Hampshire, Surrey and Wiltshire.

17.1.6 **Nationally** The species was first recorded in the UK in Yorkshire & Sussex in 2010. At that time Alcathoe was considered most likely restricted to southern England & North Yorkshire. In the two sites where Alcathoe were discovered over 70% of the bats were Alcathoe shedding doubt on the proportions small Myotis bats in other areas. During 2013 Philip Brown collected faecal samples from contributing researchers carrying out trapping across 70 sites in the Midlands and south of England as part of his thesis, with surveys by Daniel Whitby, Somerset and Surrey bat groups, with molecular analysis of 140 faecal samples; Alcathoe were not recorded in any of the areas sampled apart from Sussex and Surrey (Brown, 2016). Since then, there have been a number of additional maternity colonies discovered in Sussex bringing the total to at least 8. (Daniel Whitby pers. comm.), with the biggest roost of 96 bats in a tree, and further roosts identified in Kent and ||Hampshire since 2016. Daniel Whitby and Bat Conservation Research Unit's small Myotis project is currently expanding the known range through their surveys on the project but no data has yet been published. Since 2010 Surrey Bat Group have been working with the species and have records from 20 sites across the county, including a maternity roost in a house near Haslemere (the only known maternity roost in a dwelling for this species anywhere). There are other individual records including one roost record in Worcestershire, one in Jersey, one in Wiltshire and roost ID by droppings in Cumbria but these should be treated with caution until further work is done.

17.1.7 Given the number of records across Surrey along with records in Hampshire and Wiltshire it would be surprising if this species were not to be found at least in the southern parts of Berkshire. It is therefore important that where small Myotis bats are detected during surveys they are identified to species, preferably by DNA testing of droppings

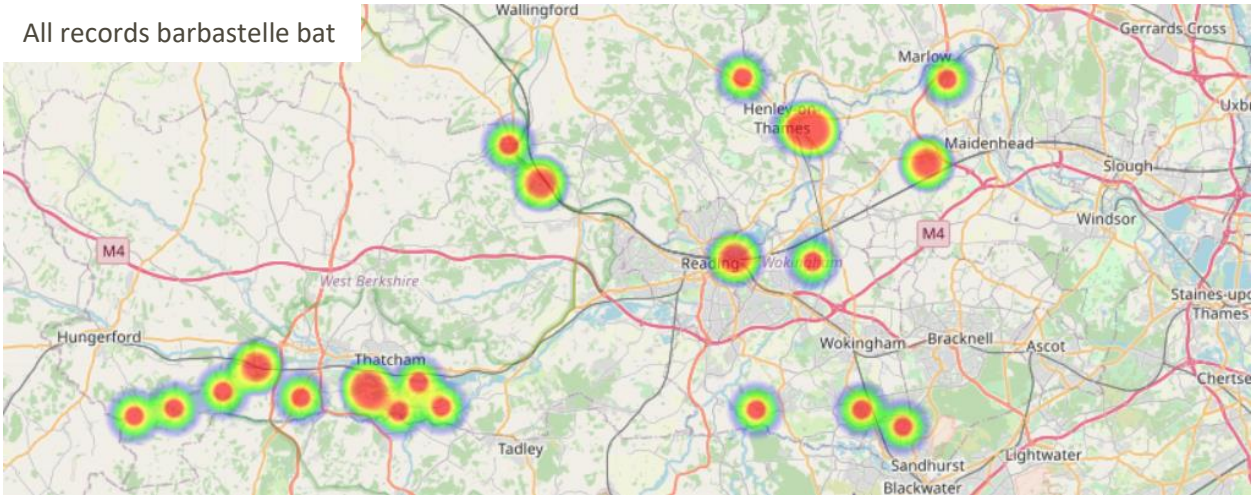
18 Barbastelle (*Barbastella barbastellus*)

18.1.1 **County status** Recorded breeding. A total of 51 records of which 50 in the past 10 years. Earliest record 1994 in hibernation.

18.1.2 **Distribution** Absent from the east of the county and records biased towards West Berkshire. With the exception of the three records in Reading all other records are associated with areas of woodland.

Photo: Claire Andrews

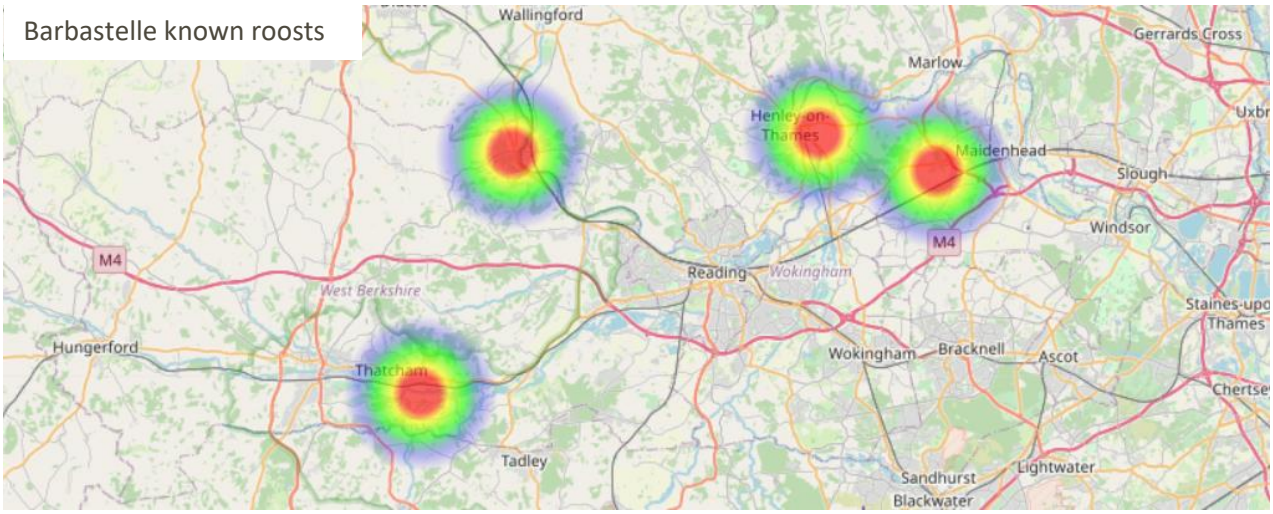
All records barbastelle bat



18.1.3 **Known roosts** Four recorded roosts across the county all of which are in buildings. One of the roosts is a confirmed maternity roost. Earliest record dates to 2014 with other two roosts being first recorded in 2017 and 2018, respectively. Bats have also been captured at Bowdown Woods and Crookham Common indicating the presence of a population in these areas but as yet no roosts have been identified in this area.

18.1.4 **Types of building/structure used** Two of the roosts are in timber-framed barns and the third is a maternity roost behind wooden weather boarding on a contemporary garage in a small housing development.

18.1.5 **Hibernation** Recorded twice in hibernation at the tunnel in Remenham, in 1994 and in 2011, deep in a crevice in an exposed part of the tunnel.



18.1.6 **Minimum and maximum maternity roost counts** No formal count was undertaken but while a pup was being reunited a count was made of visible adults and emerging bats, totalling 12 individuals.

18.1.7 **Over the border** Recorded in all surrounding counties. Recently (2019) recorded breeding in Surrey for the first time, with evidence of another colony on the Hampshire border using the Alice Holt Forest complex.

18.1.8 **Nationally** Considered a tree-dwelling species with few roosts recorded in buildings. Found in southern and central England and Wales with centres of population in south-west and mid-west England, and Norfolk. Data deficient for estimate of population but one estimate puts the population around 5,000 (Harris, 1995) ranking it fourteenth in Britain. Considered data deficient for analysis of population trends, no data from the NBMP. Considered at imminent risk of extinction on the IUCN Red list for British Mammals.

19 Lesser horseshoe bat (*Rhinolophus hipposideros*)

19.1.1 **County status** Extinct within Berkshire.

19.1.2 **Distribution** Not recorded in Berkshire.

19.1.3 **Known roosts** No known roosts in Berkshire.

19.1.4 **Over the border** Recorded in Hampshire in the New Forest and in Wiltshire, where large numbers can be found in hibernation in the cave systems around Bath.

Photo: Claire Andrews

19.1.5 **Nationally** Associated with broadleaved woodland, well documented in buildings. Now found only in south-west England and Wales, it was formerly present in south-east England and the Midlands. British population estimated at 50,400 making it the eighth most common species in Britain. Population appears to be increasing. Data from the NBMP for both roost and hibernation surveys show significant population increases since 1999 “although it is considered unlikely, they have yet reached their pre-decline population levels” (BCT, 2017).

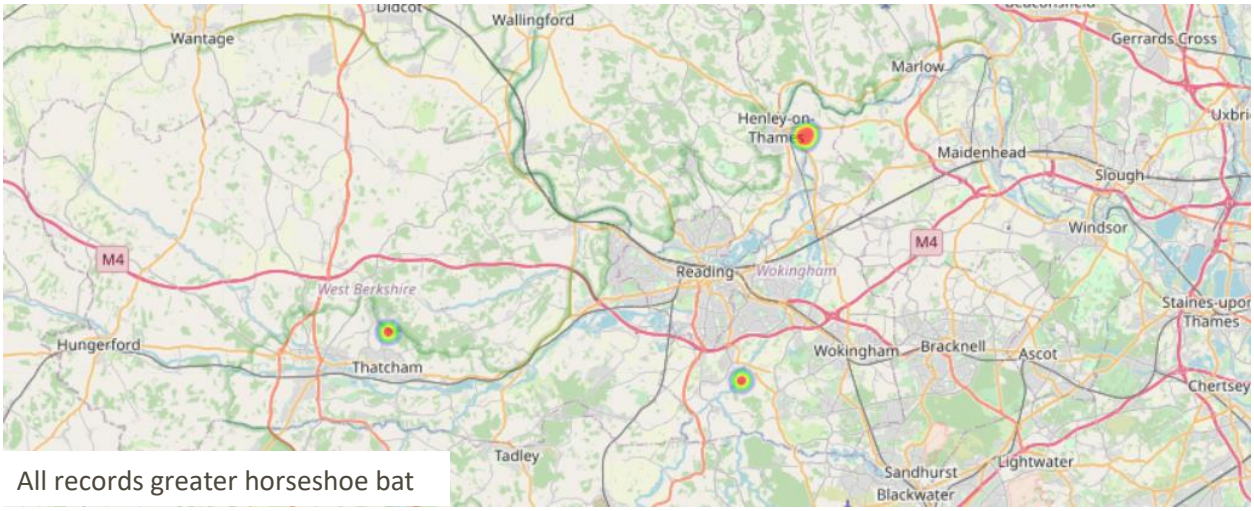
20 Greater horseshoe bat (*Rhinolophus ferrumequinum*)

20.1.1 **County status** Not recorded breeding. Resident. A total of six records, the oldest dating to 2002 and most recent 2012.

Photo: Claire Andrews

20.1.2 **Distribution** Two in flight records, one from Cold Ash area and the other a single pass on a static detector in Shinfield. A single bat was recorded in hibernation in Remenham in two consecutive years in 2002 and 2003, but has not been recorded there since. There are also two records from buildings in the same area of possible day roosts.

20.1.3 **Known roosts** Hibernation site is an underground chalk tunnel/folly. The two other records relate to a mansion house and a bungalow and are given as possible day roosts.



All records greater horseshoe bat

20.1.4 **Over the border** Recorded in Hampshire and Wiltshire, historic records in in Surrey, recent records in West Sussex and Kent.

20.1.5 **Nationally** Associated with broadleaved woodland, well documented in buildings. In the UK, this species is restricted to south-west England and south Wales, although vagrants may be recorded elsewhere. British population estimated at 12,900 ranking it twelfth in Britain. Population appears to be increasing. Data from the NBMP for both roost and hibernation surveys show significant population increases since 1999 “although it is very unlikely, they have yet reached their pre-decline population levels” (BCT, 2017).

21 References

21.1.1 Brown, P.A. (2016) *The Cryptic Group of Small Myotis Bats (M. mystacinus, M. brandtii and M. alcathoe) and Habitat Use by Woodland Bats Species in Britain*. MSc thesis. University of Bristol

21.1.2 Harris, S. and Yelden, D. (2008) *Mammals of the British Isles: Handbook* 4th ed. Mammal Society.

21.1.3 Mathews, F.; Kubasiewicz, L.M.; Gurnell, J.; Harrower, C.A.; McDonald, R.A.; Shore, R.F. (2018) *A Review of the Population and Conservation Status of British Mammals.* A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

21.1.4 Mathews, F. and Harrower, C. (2020). *IUCN-compliant Red List for Britain's Terrestrial Mammals*. Assessment by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough .

21.1.5 Razgour, O.; Whitby, D.; Dahlberg, E.; Barlow, K.; Hanmer, J.; Haysom, K.; McFarlane, H.; Wicks, L.; Williams, C.; Jones, G. (2013) *Conserving grey long-eared bats (*Plecotus austriacus*) in our landscape: a conservation management plan*. Available to download from the Bat Conservation Trust http://www.bats.org.uk/.

21.1.6 BCT (2019) *National Bat Monitoring Programme Annual Report 2019*

21.1.7 BCT (2017) *State of UK Bats 2017 : NBMP Population Trends*.

22 Appendix - Summary of status in Berkshire and the national context

Species	Status in Berkshire	Pop total in Britain (plausible intervals in brackets)	National distribution Extent of occurrence in England **	National population trend	Status in UK*
Pond bat (*Myotis dasycneme*)	Not recorded	-	Recorded in Kent in 2004 and in Suffolk in 2005. Lactating female caught in Suffolk in 2005 and tracked back to sycamore tree.	-	Vagrant
Parti-coloured bat (*Vespertilio murinus*)	Not recorded	-	Two records from the 1800s. Recorded 10 times on UK mainland up until 2010. Single bat brought in to care in Hampshire in 2014. Recorded on Isle of Aran, April 2011.	UK's most regular vagrant with 1-2 records most years.	Vagrant
Northern bat (*Eptesicus nilssonii*)	Not recorded	-	One bat found hibernating in Betchworth, Surrey, 1987, 1 on North Sea oil platform. Plus 2 accidental imports.	-	Vagrant
Savi's pipistrelle (*Hypsugo savii*)	Not recorded	-	In France distribution towards the south east. One recorded in Jersey but arrived on a boat.	-	Not recorded on mainland
European free-tailed bat (*Tadarida teniotis*)	Not recorded	-	One taken in to care by IOW bat hospital in 2017 now a long-term captive. Also 1 reported from Plymouth that later died.	-	Vagrant
Kuhl's pipistrelle (*Pipistrellus kuhlii*)	Not recorded	-	Resident in Jersey. First report from UK mainland 1991 from Suffolk with 11 more records across the UK, most recent record from a bat that cam e into care in Sussex in Janurary 2021	As the European population is moving northward Kuhl's may become a UK resident. May already be present in low numbers in Kent towns on the south coast.	Vagrant

Species	Status in Berkshire	Pop total in Britain (plausible intervals in brackets)	National distribution Extent of occurrence in England **	National population trend	Status in UK*
Geoffroy's bat (*Myotis emarginatus*)	Not recorded	-	Recorded in and Bath in 2013 and Sussex in 2012 and a injured female was taken into care in 2021. Caught on Jersey in summer 2013 also recorded in hibernation there.	-	Vagrant
Greater mouse-eared bat (*Myotis myotis*)	Not recorded	1?	Sussex	Last known maternity roost in Sussex, burned down in 1985. One remaining bat recorded in hibernation in the 1980s. When he was no longer seen the species was declared extinct in 1990. A female taken into care in Jan 2001 died after a few days. Dec 2002 to Feb 2018 a single male has been recorded using the same hibernaculum as the 1980s lonely male. Not recorded during the 2018/19 survey.	Extinct[2] Native IUCN RL:CR Range - Decline Habitat - Stable
Nathusius' pipistrelle (*Pipistrellus nathusii*)	Resident Breeding? 124 records 6 roosts 1? maternity roost 0 hibernation sites	It is likely that there is a population of at least several hundred in GB[1].	Maternity colonies have been discovered in Kent, Northumberland and on the Surrey/Greater London border. Extent: 70,285 km^2	Data deficient[1] Awareness of the species and advances survey techniques have resulted in a rapid increase in the number of records of the species. The scale of the change indicates that there is genuine increase in numbers[1].	Native IUCN RL:NT Range - Unknown Habitat - Stable

Species	Status in Berkshire	Pop total in Britain (plausible intervals in brackets)	National distribution Extent of occurrence in England **	National population trend	Status in UK*
Grey long-eared bat (*Plecotus austriacus*)	Extinct in Berkshire. Historic record of skeletons in cave system. No other records.	1,000 (400-3,000)[1]	Lowland southern England, close to the coast. Extent: 7,247 km^2	Data deficient[1] Declining	Native IUCN RL:EN Range - Unknown Habitat - Decline
Alcathoe (*Myotis alcathoe*)	Not recorded	2,000 (6,000-8,000)[1]	Known in parts of southern England and Yorkshire. Extent: 5,040 km^2	Data deficient[1]	Native IUCN RL:DD Range - Unknown Habitat - Unknown
Barbastelle (*Barbastella barbastellus*)	Breeding 51 records 4 roosts 1 maternity roost 1 hibernation site	Unknown Best estimate 5,000[3] but very uncertain	Southern and central England and Wales with centres of population in south-west and mid-west England, and Norfolk. Extent: 67,610 km^2	Data deficient[1] Unknown	Native IUCN RL:VU Range - Unknown Habitat - Decline
Leisler's bat (*Nyctalus leisleri*)	Not resident 44 records No roosts	Unknown Best estimate 10,000[3] but very uncertain	Patchy distribution across southern England, absent from Cornwall and the west of the country. Also recorded in Dumfries and Galloway. Internationally important population in N. Ireland. Extent: 68,353 km^2	Data deficient[1] No significant trend[2]	Native IUCN RL:NT Range - Unknown Habitat - Stable

Species	Status in Berkshire	Pop total in Britain (plausible intervals in brackets)	National distribution Extent of occurrence in England **	National population trend	Status in UK*
Greater horseshoe bat (*Rhinolophus ferrumequinum*)	Not resident? 6 records 1 hibernation site	12,900 (9,210 – 18,500)[1]	Restricted to south-west England and south Wales, although vagrants may be recorded elsewhere. Extent: 29,567 km^2	Increase.[1] Both Roost and Hibernation surveys show significant population increases since 1999, although it is very unlikely, they have yet reached their pre-decline population levels.[2]	Native IUCN RL:LC Range - Increase Habitat - Stable
Bechstein's bat (*Myotis bechsteinii*)	Resident? 2 records (both in hibernation) 1 roost which is a hibernation site	21,800 (10,300 – 55,600)[1]	Restricted distribution across the south of England with population centres in Devon, Dorset, Gloucestershire, Isle of Wight, Somerset and Wiltshire. There have also been two recent records from Wales and the identification of several roosts in Surrey in 1992. Extent: 23,344 km^2	Data deficient but evidence of recent declines.	Native IUCN RL:LC Range - Stable Habitat - Decline
Brandt's bat (*Myotis brandtii*)	Resident? 3 Records No roosts	Unknown Best estimate 30,000[3] but very uncertain	Increasing proportion of Brandt's to the east and north in comparison to whiskered. Less widespread than whiskered. Extent: 109,201 km^2	Data deficient[1] Stable[2, 4]	Native IUCN RL:DD Range - Unknown Habitat - Unknown
Whiskered bat (*Myotis mystacinus*)	Resident? 8 Records No roosts	Unknown Best estimate 40,000[3] but very uncertain	General pattern of the ratio of Brandt's: whiskered bats increasing from west to east and from south to north in Britain. It is suggested that a ratio of	Data deficient[1] Stable[2, 4]	Native IUCN RL:DD Range - Unknown

Species	Status in Berkshire	Pop total in Britain (plausible intervals in brackets)	National distribution Extent of occurrence in England **	National population trend	Status in UK*
			approximately 10:1 of captures of whiskered compared with Brandt's bats at swarming sites, woodland and hedgerows. Extent: 109,201 km^2		Habitat - Unknown
Lesser horseshoe bat (*Rhinolophus hipposideros*)	Extinct in Berkshire	50,400 (36,000 – 72,000)[1]	Now found only in south-west England and Wales. It was formerly present in south-east England and the Midlands. Extent: 33,552 km^2	Increasing[1] Both roost and hibernation surveys show significant population increases since 1999, although it is very unlikely, they have yet reached their pre-decline population levels.[2]	Native IUCN RL:LC Range - Increase Habitat - Stable
Serotine (*Eptesicus serotinus*)	Breeding 343 records 30 roosts 5 maternity roost 0 hibernation sites	136,000 (7,250 – 413,000)[1]	Restricted to southern England. Occurring mainly south of a line drawn from The Wash to south Wales. Extent: 78,082 km^2	Data deficient[1] Stable since 1999[4]	Native IUCN RL:VU Range - Increase Habitat - Decline
Noctule (*Nyctalus noctula*)	Breeding 1,330 records 21 roosts 9 maternity roost 0 hibernation sites	England only – 565,000 (17,700 – 1,872,000)[1]	Widespread, found as far north as central Scotland but absent from Northern Ireland. Extent: 125,913 km^2	Data deficent[1] Population considered stable 1999 - 2019[4]	Native IUCN RL:LC Range - Unknown Habitat - Unknown

Species	Status in Berkshire	Pop total in Britain (plausible intervals in brackets)	National distribution Extent of occurrence in England **	National population trend	Status in UK*
Brown long-eared bat (*Plecotus auritus*)	Breeding 1,077 records 619 roosts 73 maternity roosts 23 hibernation sites	943,000 (51,900 – 2,200,000)[1]	Found throughout the UK, Ireland and the Isle of Man. Absent from Orkney and Shetland, and other exposed islands. Extent: 129,683 km^2	Data deficient [1] Stable since 1999.[4]	Native IUCN RL:LC Range - Stable Habitat - Stable
Natterer's bat (*Myotis nattereri*)	Breeding 365 records 33 roosts 4 (+2) maternity roost 8 hibernation sites	414,000 – 973,000 (15,100 – 2,630,000)[1]	Widespread throughout much of the UK, patchy distribution across Scotland. Extent: 126,502 km^2	Data deficient [1] Tentatively thought to be increasing 1999[4]	Native IUCN RL:LC Range - Stable Habitat - Decline
Daubenton's bat (*Myotis daubentonii*)	Breeding 948 records 18 roosts 3 maternity roosts 8 hibernation sites	1,030,000 (27,000 – 4,440,000)[1]	Fairly widespread up to northern Scotland. Extent: 129,146 km^2	Data deficient[1] Overall population is considered to have been stable since 1999[4]	Native IUCN RL:LC Range - Stable Habitat - Unknown
Common pipistrelle (*Pipistrellus pipistrellus*)	Breeding 2,668 records 530 roosts 29 maternity roosts 4 hibernation sites	3,040,000 (991,000 – 7,510,000)[1]	Widespread Extent: 129,914 km^2	Data deficient[1] Field Survey data show statistically significant population increases since 1999. While the upward trends are encouraging it is likely that these represent only a partial recovery from much greater population declines over the last century.[2]	Native IUCN RL:LC Range - Stable Habitat - Stable

Species	Status in Berkshire	Pop total in Britain (plausible intervals in brackets)	National distribution Extent of occurrence in England **	National population trend	Status in UK*
Soprano pipistrelle (*Pipistrellus pygmaeus*)	Breeding 2,468 records 363 roosts 53 maternity roosts 1 hibernation site	4,670,000 (1,970,000 – 8,400,000)[1]	Widespread Extent: 128,458 km^2	Data deficient[1] Field Survey data show statistically significant population increases since 1999. While the upward trends are encouraging it is likely that these represent only a partial recovery from much greater population declines over the last century.[2]	Native IUCN RL:LC Range - Stable Habitat - Stable

[1] - Mathews, F. ***et al.*** (2018) A Review of the Population and Conservation Status of British Mammals. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.
[2] - State of UK Bats 2017 – NBMP population Trends.
[3] – Harris, S. and Yalden, D. (2008) Mammals of the British Isles: Handbook 4th Edn.
[4] – National Bat Monitoring Programme Annual Report 2019
* The IUCN Red List Categories and Criteria is a widely understood system for classifying species at high risk of global extinction. The categories are: DD = Data deficient, LC = least concern, NT = Near threatened, VU = Vulnerable, EN = Endangered, CR = Critically endangered, EW = extinct in the wild, EX = extinct
**Extent of occurrence is given as the total area (km^2) (including unsuitable habitat) within range based on alpha hull approach[1]