

Bechstein's bat

Myotis bechsteinii



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Bechstein's bat is one of our rarer bat species, found exclusively in woodland habitats. In the UK, the Bechstein's bat is on the northern edge of its European range.

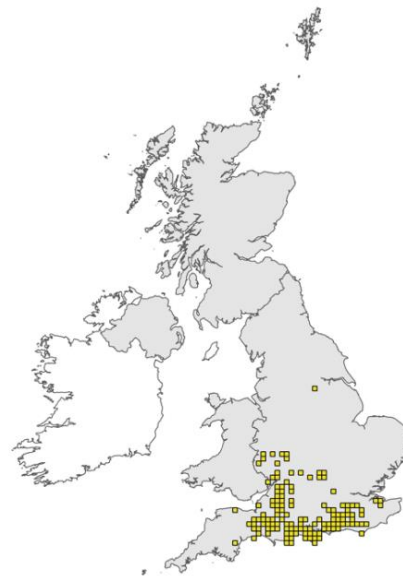
Distribution

The current understanding is that the species is present from Devon in the west of England to Kent in the east, extending north to Worcestershire and Buckinghamshire, with outlying records in South Wales. Core areas are believed to be Somerset, Dorset, Wiltshire, Hampshire, Isle of Wight and East Sussex.

Protection under the law

All bats in Britain and their roosts are protected by domestic and international legislation. Bechstein's bat is protected by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). It is also listed under Annexes II and IV of the European Habitat Directive making it a European Protected Species. It is illegal to take, injure or kill a bat or disturb it in its roost, whether in trees or other structures. It is illegal to damage or destroy a roost even if the bats are not

occupying a roost at the time. If work on trees or woodlands cannot be avoided, appropriate bat surveys should be undertaken before any work starts, to assess whether bats could be present and the potential risk to them from any tree/woodland work.



Bechstein's bat distribution in United Kingdom

(Map taken from 4th Report under Article 17 on implementation of the Habitats Directive in the UK, JNCC 2019)

Lifecycle

From April/May, female Bechstein's bats will start to gather in their maternity colonies. Up to 20 to 25 female bats can be found roosting together, though larger numbers have been recorded. Male Bechstein's bats play no part in the rearing of young and are usually found roosting alone. Young pups are born towards the end of June, and sometimes in early July. Maternity colonies are often spread across a number of roost sites, changing their roost locations frequently throughout the summer. Juvenile bats can fly and forage for themselves by six weeks old. Mating

takes place in the autumn and the hibernation period starts during the cold winter months when the temperature drops.

Habitat

Bechstein's bat is a woodland specialist using trees all year for mating, rearing young and hibernating. Typically, they roost in deciduous semi-natural or ancient woodlands with a diversity of tree ages and vegetative structure but will roost in veteran trees, deadwood, hedgerow trees and orchard trees. Roost woodlands are often greater than 25 hectares and have a high proportion of oak in the canopy mix with a well-developed understorey. There is, as yet, insufficient data to dismiss different types of woodland, however, a woodland considered particularly favourable for a maternity roost of Bechstein's bats would have the following characteristics:

- An unevenly aged, deciduous woodland
- With a high number of mature oaks
- Above 25 hectares in size
- Semi-natural or ancient woodland
- A high degree of canopy cover consisting of native species
- Containing numerous woodpecker holes
- Mixed native species understory
- Streams/ponds or ditches retaining water within the wood.



Bechstein's bats typically roost in deep tree cavities which can be either on the main stem or branches. Woodpecker holes appear most favoured, with rot holes and splits also used. The majority of recorded roosts are in oak, though favoured features in

several other tree species including Beech, Ash, birch, poplar, and willow have been recorded. During the maternity season, roost switching will occur frequently, so it's important to retain a cohort of suitable roost trees with tree holes within

the territory of the colony. Bechstein's bats will also roost in bat boxes. This species is thought to hibernate in similar roosting sites to those used in summer, although deeper tree holes may provide a more suitable microclimate for hibernation. Bechstein's bat also hibernates in underground structures like caves and mines.

Bechstein's bats are short distance fliers and tend to forage near their roost sites. They rarely fly more than 1.5km from roost to their foraging area, if suitable habitat is available. They therefore need suitable habitats in close proximity to their roosts. They generally need landscapes with a good network of linear landscape features (hedgerows, shelterbelts, riparian trees, etc.) and extensive woodlands.



Reasons for decline

Bechstein's bat can be hard to monitor and only relatively recently has detailed monitoring been carried out. This means we have no reliable evidence for the reasons for decline. However, it is likely that the factors are contributing to its decline:

- The loss of deciduous woodland and intensive land and woodland management is likely to be a cause of decline. This has led to the loss and fragmentation of linear commuting routes across the wider landscape as well as reducing suitable woodland habitat that meets the species needs.

- Light pollution would have an impact by severing commuting routes.
- Woodland and tree management that removed dead, dying or damaged trees, opened up the canopy and reduced the understory.
- Drainage of wet woodlands and loss of humid and dark conditions caused by heavy thinning, conversion to wood-pasture and intensive coppicing have also contributed, so it is important to consider species needs before such changes are implemented.

Habitat management

Woodland – It is important that the characteristics of a woodland that make it favourable for Bechstein's bats are retained, hence the following should be considered when planning any management work on a site:

- Retain the size, structure, and diversity of the woodland
- Retain and where possible enhance connectivity
- Retain trees with bat roost potential and buffer them from disturbance
- Consider timing of work to avoid the sensitive maternity and hibernation seasons.
- Carry out appropriate surveys to establish how bats use the woodland and surrounding habitats.

Also, consider zoning the most important areas as minimum intervention. Standing and fallen deadwood should be retained for roosting potential and to encourage woodland invertebrates. More information can be found in [The Bechstein's Bat: An introduction for woodland owners](#).

Orchards – within an orchard environment, mature trees should be left alone to age and decline naturally so they continue to provide a range of potential roost features. Old orchards close to woodland can be insect-rich feeding grounds for both Bechstein's bats and Woodpeckers who create the cavities that the bats use to shelter in. They should be retained, with insecticide use restricted.

Beyond the woodland, general advice – management should focus on protecting networks of mature hedgerows, tree lines and woodlands. This will support the bat in accessing those habitats quickly and easily. Retain and encourage any tree-lined rivers or other long linear features that pass close to the nursery woodland.

Hedgerows – Retain all hedgerows and mature hedgerow trees. Where hedgerow and riverside trees are within 1.5km of the maternity woodland and have potential roost features such as holes, splits and hollows they should be afforded the same consideration as the equivalent woodland trees and be retained and protected.

Other types of habitats - Woodland ponds, ditches with standing water, and other waterbodies should be encouraged. Anthill-rich grassland beyond the woodland boundary can be of importance as feeding sites for Green woodpeckers, and its positive management should be encouraged.



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Survey method

Bechstein's bat is difficult to survey using standard monitoring techniques like acoustic monitoring or transect surveys. Advanced survey techniques involving the use of acoustic lures, traps, and mist nets, so bats can be caught, tagged and radio-tracked to their roosts is the best survey method. This kind of survey can only be carried out by licenced and experienced bat workers.

The Back from the Brink Ancients of the Future project is led by Buglife in partnership with Plantlife and the Bat Conservation Trust.

