

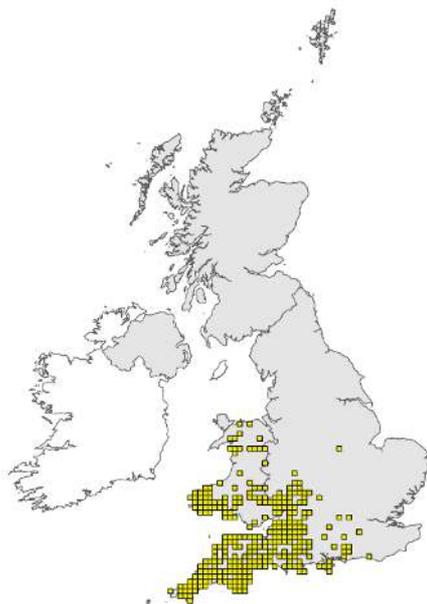
Greater horseshoe bat

Rhinolophus ferrumequinum



©Gareth Jones/www.bats.org.uk

The greater horseshoe bat is one of two species of horseshoe bat in the UK. Both species have a distinctive horseshoe shaped nose leaf. The nose leaf focuses their echolocation calls into a very directional beam and, along with a very high frequency echolocation call, this makes it difficult for their prey to be aware of their approach. It is one of our larger bats with a wingspan of up to 40cm and weighing around 25 grams. At rest it hangs, by its feet, from ceilings or walls and it is only the horseshoe bats that do this. In adapting to hang by their feet horseshoe bats, unlike other bat species, have lost the ability to crawl well. This means that horseshoe bats need to fly into their roosts, which is very limiting, especially in modern buildings. Their summer roosts are frequently associated with large old buildings, stables blocks and other outbuildings. They are very loyal to their roosts and use them for generation after generation.



Greater horseshoe bat distribution in England and Wales

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

Lifecycle

Mating takes place during the autumn and early winter with the female storing the sperm until conditions are right to allow fertilisation in the spring. Maternity colonies form in the spring and in June/July the single pup is born. Lactation lasts about five weeks by which stage the young are able to fly and search for insect food. Greater horseshoe bats living wild are known to have lived into their thirties.

Habitat

The greater horseshoe bat forages in landscapes containing a patchwork of fields bounded by mature hedgerows and interspersed with woodland patches. The species has a strong association with grazed pasture, particularly where the livestock are cattle. This is due to their reliance on insects associated with dung.

Greater horseshoe bats feed on a variety of insects, but cockchafer, dung beetles and moths are the most important components of their diet. Beetles, particularly one species of dung beetle, *Aphodius rufipes*, are an especially important food source for young bats. The species core area for foraging will normally be within 3km of its roost. Summer roosts (and in particular maternity roosts) are usually in larger rural houses and stable blocks, most often in the roof space where these are warmed by the sun. In the winter they seek cool, stable and humid hibernation sites in places such as mines, caves and ice-houses.

Distribution

This species is found largely in south west England and south Wales. Its range contracted in the last century, but with climate change alongside sensitive land management, it could spread back to its original distribution.

GB status and rarity

IUCN least concern for England and near threatened for Wales. It is listed under Annexes II and IV of the Habitats Directive. This species suffered large losses in the last century, reported to be over 90%. In the last 20 years there has been an increasing population trend, although it remains one of our rarest bats.

Protection under the law

All bats in Britain and their roosts are protected by international and domestic legislation. It is illegal to take, injure or kill a bat or disturb it in its roost. It is illegal to damage or destroy a roost even if the bats are not occupying it at the time.

Survey method

As they leave the roost, greater horseshoe bats can be surveyed by sight, accompanied with a bat detector. They can also be surveyed in the field by picking up their echolocation calls which are distinctive. This is best achieved using a static bat detector.

Reasons for decline

Greater horseshoe bats have suffered from a reduction in prey availability due to agricultural intensification. This includes the use of endectocides in grazing animals which significantly reduces dung fauna. Fragmentation of the landscape, due to development and new infrastructure and the associated lighting, can sever their commuting routes and make foraging areas unavailable. Noise and disturbance at roosts can negatively impact their use, with maternity roosts and hibernation sites being particularly vulnerable. In the past, maternity roosts are likely to have been lost due to the conversion of large old houses and stable blocks into modern accommodation. In addition, the use of highly toxic timber treatment chemicals proved deadly even a long period after application. These chemicals are no longer in use and the legislation introduced in 1981 gives protection to roosts and access to them. This is likely to be a significant factor in the stabilisation of the population of this species in England.

Habitat management for the greater horseshoe bat

A landscape of permanent pasture and ancient woodland, linked with an abundance of tall bushy hedges, is the ideal habitat for greater horseshoe bats.

General - Minimise insecticide use in all habitats.

Pasture - Cattle provide the best dung for most dung beetles, but sheep and horse dung is useful too. Avoid the use of anti-parasitic treatment for cattle or sheep which persist in the dung and prevent the development of normal dung fauna. More information available on the Farm Wildlife website

<https://farmwildlife.info/>

Wildflower-rich meadows - Retain existing wildflower-rich meadows and create or restore further areas of species-rich grassland to support insects.

Woodland - Maintain existing mature ancient semi-natural deciduous woodland.

Hedgerows - Maintain a network of tall, bushy hedgerows. These are important for foraging and to connect the roost with foraging habitats.