

## Bat Species of the Year 2024-2025

### **GREATER MOUSE-EARED BAT (*Myotis myotis*)**

Facts compiled for BatLife Europe by

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#### **Morphology**

The Greater Mouse-eared Bat is a large bat with a broad muzzle and big, long ears. The body's back is brown to reddish-brown, while the underside is dirty white or beige. The tragus reaches about halfway up the ear and usually has a darkly pigmented tip.



Fig. 1: Bat of the year 2024-2025: Greater Mouse-eared Bat (*Myotis myotis*). © Wolfgang Forstmeier.

#### **Vital statistics**

Head & body length: 67-79 mm

Forearm length: 55-67 mm

Wingspan: 350-430mm

Weight: 20–27g

Colour: Brown to reddish-brown, while the ventral side is dirty white or beige

This species is recorded in most of the European continent, but it is missing (except for single individuals) in most parts of Scandinavia and the British Islands. The eastern distribution boundary in Europe runs from northwest to southeast through Poland and Ukraine (Fig. 2).

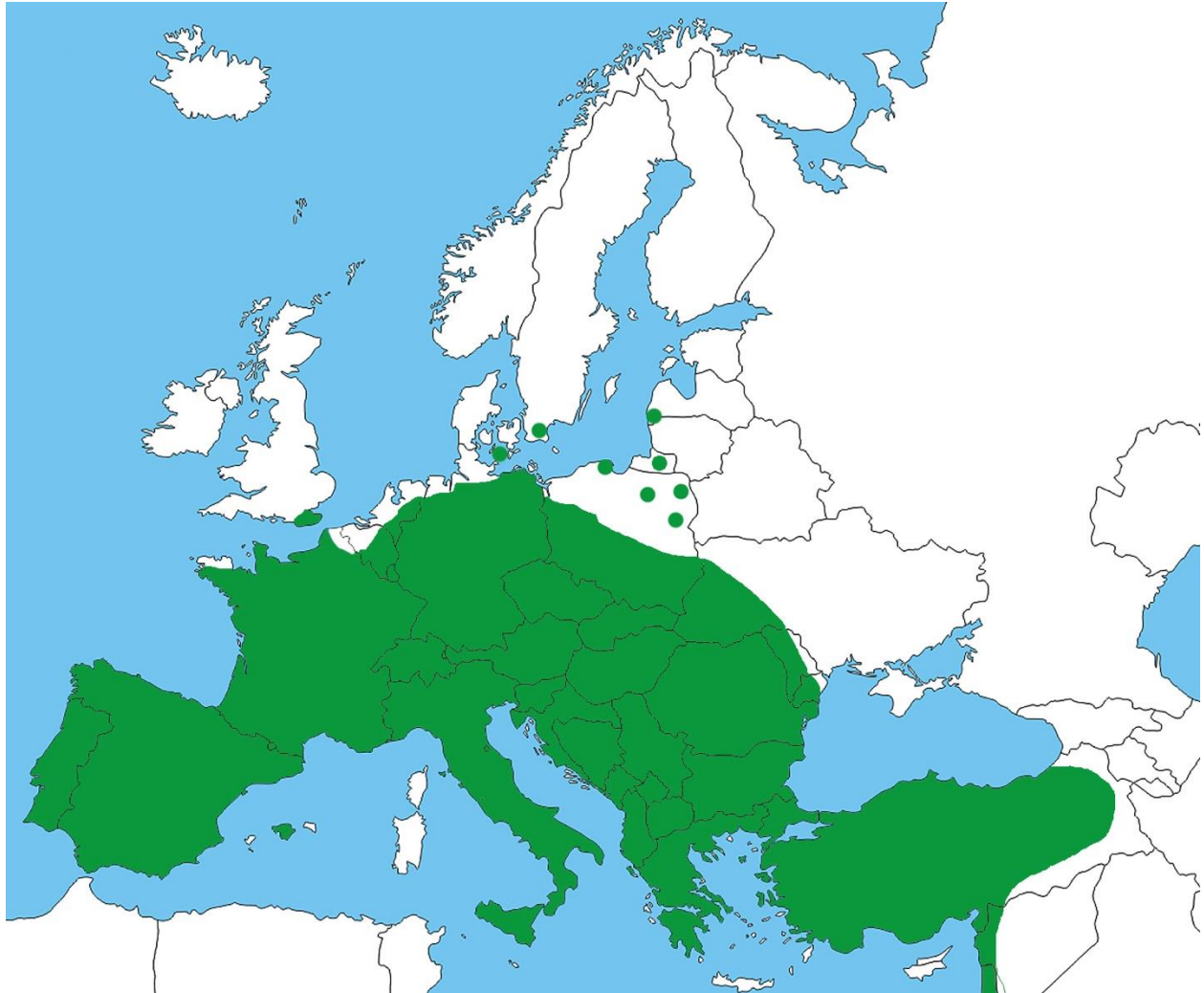


Fig. 2: Distribution of the Greater Mouse-eared bat © Christian Dietz

### Summer roosts

In the southern part of its range, it typically uses caves, mines and other underground roosts. They can also use artificial roosts, especially in Central Europe, e.g. attics, large roof spaces, churches, cellars and large bridges. Occasionally they also known to use tree roosts and bat boxes. Maternity colonies in caves can have 50 to 5000 bats in central Europe and up to 8000 in southern regions. These colonies are mostly formed of female bats (but sometimes a small number of males are present). The colonies typically form in late March in southern regions and are vacated in August. Males usually roost individually and use tree holes, roof spaces, towers, bat boxes and fissures in bridges. Roost selection is primarily due to microclimatic conditions (30- 34°C) and the level of parasites present. Bats will often move around in the colony during the maternity period to find the optimal locations.



Fig. 3: Maternity colony of the Greater Mouse-eared Bat © Andreas Zahn

### Foraging habitats

Primarily a gleaner bat, *Myotis myotis* selects foraging habitats based on abundance of prey and ease of accessibility to ground-dwelling arthropods. At a landscape level, they require large areas of forest and they are found in a wide variety of habitats including open deciduous forests, forest edges, semi-open and open grasslands and pastures, agricultural areas, orchards, olive groves. They are found at elevations ranging from sea-level to c. 2000m, although most typically under 800m. As they prefer to feed on ground-dwelling insects they favour forests with large clearings and sparse ground cover. They also can use aerial hawking to catch insects like chafers, and consume small prey on the wing; for larger items they will perch. They typically forage at a low height over the ground and are thought to use a combination of hearing and smell to locate prey items.

Foraging habitat is typically located within 5-15km from the roost but they are also known to travel up to 26km. The total foraging area can be up to 1000 ha in size but bats normally focus on 1-5 smaller core regions that can be anywhere between 1-10 ha in size.

### Diet

The mouse-eared bat primarily preys on large ground-dwelling arthropods. Most popular are ground beetles (Carabidae), a high proportion of which are large ground beetles (Genus *Carabus*), followed by other soil arthropods such as centipedes (Chilopoda), spiders and beetle larvae. Other beetles, mole crickets, crane flies or crickets are only rarely or seasonally important as prey.

### Echolocation

Using the heterodyne detector, the echolocation calls of the mouse-eared bat are difficult to identify. The calls are strong, dry clicks in a slow rhythm. The best frequency for listening on

the heterodyne detector is about 35 kHz.

However, the Greater Mouse-eared Bat often does not rely on echolocation when hunting for ground insects: It uses its large ears to detect the sounds of prey crawling in dry leaves.

### Reproduction and life cycle

From mid-August, Greater Mouse-eared Bats swarm around caves, and mating occasionally takes place here. However, this more often takes place at male roosts. In Central Europe, young are born between the end of May and the beginning of June; in the Mediterranean region it can be as early as the beginning of April. The first training flights at the age of 3-4 weeks still take place in the roost, the first flights outside the roost start at around 5 weeks of age.

Greater Mouse-eared Bats have an average life span of 3 to 5 years. However, some individuals can grow much older and the oldest known individual was 25 years old.

### Hibernation

The Greater Mouse-eared Bat hibernates in underground sites such as caves, tunnels or cellars. In these hibernation roosts it uses humid and relatively warm areas of up to 12°C.

In winter, individual animals or small groups usually hang freely from the ceiling or hidden deep in crevices, larger clusters of several hundred animals are rarely formed.



Fig. 4: Hibernating Greater Mouse-eared Bat, covered in dew © Ulrich Hüttmeir

### **Legal protection**

The Greater Mouse-eared Bat is listed under Annexes II and IV of the EU Habitats Directive which makes it a species of special interest for the pan-European Natura 2000 network. Member states are requested to consider the presence of this species when proposing Natura 2000 sites to the European Commission, and to protect the Greater Mouse-eared Bat as well as their habitats in all their national territory.

In addition, this species is targeted by the UNEP-EUROBATS Convention, in line with the Convention on Migratory Species (CMS). All the parties of this convention (EU and non-EU Members states) are requested to have legal instruments for the protection of all bat species, including the Greater Mouse-eared Bat.

### **Conservation**

This species is classified as Least Concern (LC) by the IUCN Red List (2016). However, locally, the species is considered as Near Threatened (NT) or Vulnerable (VU) due to persistent threats at regional and national scale, including loss of habitats, including corridors to and from roosts and feeding areas, use of artificial fertilisers and pesticides reducing insect diversity and possibly leading to indirect poisoning of bats, and pesticide run-off in water can severely disrupt aquatic insect abundance. Finally, the disturbance and destruction of roosts also represent critical threats to the species, especially during maternity and hibernation periods.