= Myotis escalerai =

Myotis escalerai is a European bat in the genus Myotis , found in Spain (including the Balearic Islands) , Portugal , and far southern France .

Although the species was first named in 1904 , it was included in Natterer 's bat (Myotis nattereri) until molecular studies , first published in 2006 , demonstrated that the two are distinct species . M. escalerai is most closely related to an unnamed species from Morocco . Unlike M. nattereri , which lives in small groups in tree holes , M. escalerai forms large colonies in caves . Females start to aggregate in late spring in maternity colonies , and their young are born in summer . The species spends each winter in hibernation colonies , usually in caves or basements .

M. escalerai is a medium @-@ sized , mostly gray bat , with lighter underparts . It has a pointed muzzle , a pink face , and long ears . The wings are broad and the species is an agile flyer . Wingspan is 245 to 300 mm (9 @.@ 6 to 11 @.@ 8 in) and body mass is 5 to 9 @.@ 5 g (0 @.@ 18 to 0 @.@ 34 oz) . Though very similar to M. nattereri , it differs from that species in some features of the tail membrane . The conservation status of M. escalerai is assessed as " Vulnerable " or " Data Deficient " in various parts of its range .

= = Taxonomy = =

Myotis escalerai was named by Ángel Cabrera in 1904 , on the basis of four specimens from two localities in eastern Spain . He named the new species after one Mr. Martínez de la Escalera , who collected two specimens of the species in Bellver , Catalonia . Cabrera did not designate either of the two localities (Bellver and Foyos , Valencia) as the type locality , and later authors have listed both . Currently , Foyos , which was listed first by Cabrera , is accepted as the type locality . Cabrera commented that M. escalerai was close to Natterer 's bat (Myotis nattereri) , and in 1912 , Gerrit S. Miller listed escalerai as a synonym of that species . He argued that one of the features Cabrera had listed as distinguishing the two was an artefact of the preservation of the specimens of M. escalerai in alcohol . Miller 's classification was followed for almost a century , and indeed , Cabrera himself accepted in 1914 that M. escalerai was not a valid species .

However , a 2006 study by Carlos Ibáñez and colleagues found that M. nattereri in fact included several cryptic species with highly distinguished DNA sequences characteristics , even though morphological differences were small or nonexistent . One , which they recorded in the southern Iberian Peninsula , was identified as M. escalerai . Populations in the mountains of northern Spain represent another species (" Myotis sp . A ") , which is now also known from the Alps . A 2009 study using data from the mitochondrial genes cytochrome b and ND1 found that M. escalerai is most closely related to an unnamed species from Morocco previously included in M. nattereri (" Myotis sp . B ") , and more distantly to other members of the Myotis nattereri group . M. escalerai and the Moroccan species are estimated to have diverged about 2 million years ago . Later in 2009 , M. escalerai was also recorded for the first time from France . One 2011 study found a fifth putative species in the complex (" Myotis sp . C ") , occurring in the Italian peninsula and most closely related to M. sp . A , but another study published in the same year included these populations in M. sp . A. The latter study , by I. Salicini and colleagues , used sequences from six nuclear genes to confirm the distinctiveness of M. escalerai and its close relationship with M. sp . B. The common name " Escalera 's bat " has been used for M. escalerai .

= = Description = =

A medium @-@ sized gray bat , Myotis escalerai is similar to Myotis nattereri . The fur is long and soft ; with a brown tone on the back , and the brighter underparts approaching white . The feet are dark gray . Much of the face is pink , and the muzzle is pointed , with long hairs on the upper lip resembling a moustache . The long ears are brown to gray . The tragus , a projection on the inner side of the outer ear , is long and reaches to the middle of the ear and colored gray to yellow , becoming darker from the base towards the tip . According to several authors , it differs from M.

nattereri in showing a distinct fringe of hairs on the tail membrane , but bat specialist A.M. Hutson writes that this feature does not distinguish the two species . In addition , the presence of an S @-@ shaped spur on the uropatagium (membrane between the hind legs) , which approaches the middle of the membrane , is a distinctive feature of this species . With its broad wings , low flight , and rapid wingbeats , the species is capable of precise , agile flight .

The head body length is 42 to 50 mm (1 @.@ 7 to 2 @.@ 0 in) , tail length is 38 to 47 mm (1 @.@ 5 to 1 @.@ 9 in) , forearm length is 35 to 43 mm (1 @.@ 4 to 1 @.@ 7 in) , ear length is 14 to 18 mm (0 @.@ 55 to 0 @.@ 71 in) , wingspan is 245 to 300 mm (9 @.@ 6 to 11 @.@ 8 in) , and body mass is 5 to 9 @.@ 5 g (0 @.@ 18 to 0 @.@ 34 oz) .

= = Distribution and ecology = =

The range of Myotis escalerai remains poorly constrained and may turn out to be larger than currently known . M. escalerai is widespread in Spain and Portugal . For example , it occurs widely , though localized , in Aragón , where Myotis sp . A (the only other species in the M. nattereri complex to occur there) is known from a single locality only . Similarly , in Catalonia , M. escalerai is widespread and occurs from sea level up to an altitude of 1 @,@ 500 m (4 @,@ 900 ft) . The species also occurs on the Balearic Islands of Mallorca , Menorca , and Ibiza . The sole French record is from a cave in Valmanya , Pyrénées @-@ Orientales .

Relatively little is known of the biology of M. escalerai . Females begin to form reproductive colonies in April and May , either small ones or larger aggregations that may also contain males . However , most males remain solitary in this period , although some also form colonies . The single young is born in June or July and becomes independent after some six weeks . Mating usually takes place in fall , but sometimes in winter . The formation of large reproductive colonies in caves , which may consist of several hundreds of individuals , distinguishes M. escalerai from M. nattereri as well as M. sp . A , which roost in smaller groups in tree holes . In Aragón , colonies contain 50 to 880 individuals , and Catalan colonies are known to contain over a hundred bats . Reproductive colonies may be formed in a variety of structures , including caves , mines , tree holes , and human @-@ made structures such as bridges and houses . However , hibernation colonies need constant temperatures between 0 and 5 ° C (32 and 41 ° F) , and are usually located in caves or basements . M. escalerai is considered a sedentary species , and does not usually migrate over long distances , although it does move between reproduction and hibernation colonies . Rabies has been identified in a Spanish specimen of M. escalerai .

= = Conservation status = =

The IUCN Red List does not separate Myotis escalerai from Myotis nattereri , which is listed as " least concern " , but the two species are listed separately on the Annex to the Agreement on the Conservation of Populations of European Bats . Portugal lists M. escalerai as " vulnerable " , though noting that populations may be increasing . Because of its restriction to caves , it is considered vulnerable in Aragón . In Catalonia , the species appears tolerant of different habitats and of human disturbance , but it is listed as " data deficient " . In France , where the species was only discovered in 2009 , it is also listed as " data deficient " .