

DISTRIBUTIONAL STATUS OF THE BATS FROM TURKEY (Mammalia: Chiroptera)

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ABSTRACT

Distributional area of 30 bat species living in Turkey was defined. The population of each species was described by assigning them into categories, common, uncommon, rare and very rare. Potential threats on Turkish bats were revealed and the developed conservation plans were discussed.

1. INTRODUCTION

The status of the bat species has been well defined in most of countries of the world. However, information is still lacking concerning bat species in Turkey. Thirty bat species exist in Turkey. Of them, one is frugivorous and the others are insectivorous (Strinati, 1959; Osborn, 1963; Çağlar, 1961 a, 1961 b; 1968, 1969; Felten, 1971; DeBlase and Martin, 1973; Felten, Spitzenberger and Storch, 1977; Nader and Kock, 1983; Albayrak, 1987, 1988, 1990 a, 1990 b, 1991 a, 1991 b, 1992, 1993; Helversen, 1989; Steiner and Gaisler, 1994; Spitzenberger, 1994). Two major factors for bats are the destruction of their habitats and pollution. The objectives of this study is to determine the last distribution of bat species.

MATERIAL AND METHOD

The distributional area of each species was determined basing field work in 1974 and 1998 and also evaluating the literature data partially. Systematic order and names of the taxa were given according to Corbet (1978). Distributional status of the species was described from the viewpoint whether species is common or rare.

Population of each species was determined by evaluating of the results from about 25 years of field work. A population encountered in the field was counted approximately. Then it was defined as abundant or not abundant. Conservation of the Turkish bats were discussed, and some conservation priorities were also determined.

RESULTS

Megachiroptera is represented by only one species of family Pteropodidae in Turkey.

Rousettus aegyptiacus (Geoffroy, 1810)

1810. *Pteropus egyptiacus* Geoffroy, Ann. Mus. Hist. Nat., Paris, 15: 96 (misprint), corrected to *aegyptiacus* in 1818, Description de l’Egypte, H.N. 2: 134, pl.3, fig 2.

Type locality: Great Pyramid, Giza, Egypt

1902. *Rousettus aegyptiacus*, Anderson and de Winton, Zool. Egypt, Mam., London, 84.

This species occurs only in the Eastern Mediterranean Region of Turkey. It is rare species and not most likely to be abundant species because of killing by man for their feeding on fruits. The two nursery colonies were encountered in caves and these colonies consisted of about 300 individuals in 1977.

Microchiroptera is represented by 29 species of three families Rhinolophidae, Vespertilionidae and Molossidae.

Fam: Rhinolophidae

Rhinolophus ferrumequinum (Schreber, 1774)

1774. *Vespertilio ferrum-equinum* Schreber, Saugeth., 1(53): 174.

Type locality: Burgundy, France.

1853. *Rhinolophus ferrumequinum*, Blasius, Wiegmann’s Arch. Naturgesch., 19 (1):51-52.

This species is commonly found in anywhere and it has almost continuous distribution. The colonies usually consisted of 60–100 individuals in caves. In a nursing period, there were about 500 individuals.

Rhinolophus hipposideros (Bechstein, 1800)

1800. *Vespertilio hipposideros* Bechstein, Thomas Pennat’s Allgemeine Uebers. Vierf. Thiere, 2:629.

Type locality: France

1857. *Rhinolophus hipposideros*, Blasius, Saugeth., Deutschland, 29.

This species is also commonly found, and it has similar distribution of *R. ferrumequinum*. The colonies usually consisted of about 20-30 individuals. In a nursing colony there were about 60-80 individuals in caves and in attics.

Rhinolophus euryale Blasius, 1853

1853. *Rhinolophus euryale* Blasius, Wiegmann's Arch. Naturgesch., 19 (1):49-51.
Type locality: Milan, Italy

This species was reported from Western and Eastern part of Turkey. This is most likely a rare species. The colony consisted of about 15 individuals in a cave.

Rhinolophus mehelyi Matschie, 1901

1901. *Rhinolophus mehelyi* Matschie, Sitz. Ber. Ges. Natf. Frde, Berlin, 225.
Type locality: Bucharest, Rumania

This species was found only in Central and Western part of Turkey. This species is a rare species. There were 20 individuals in the colonies encountered in caves.

Rhinolophus blasii (Blasius, 1857)

1857. *Rhinolophus clivus* Blasius J., Säugethiere Deutschl., p. 33.
Type locality: Italy, Sicily, Istria, Dalmatia
1866. *Rhinolophus blasii* Peters W., Monatsb. Kaiserl. Akadem. Wissensch. Berlin, p.17.

This species is fairly common in Mediterranean, Aegean and Thrace Region of Turkey. It is also a rare species. A colony in hibernation consisted of about 50 individuals in a cave.

Fam: Vespertilionidae

Myotis mystacinus (Kuhl, 1819)

1819. *Vespertilio mystacinus* Kuhl, Ann. Wetterau Ges. Naturk., 4(2):202-204.
Type locality: Germany
1900. *Myotis mystacinus*, Mehely, Monogr. Chiropt. Hungariae, Budapest, 200-206.

This species was reported from Central, Eastern and Western part of Turkey but it is a rare species. It formed a colony of 50-60 individuals in a roof.

Myotis brandti (Eversmann, 1845)

1845. *Vespertilio brandtii* Eversman, Uralensibus observati. Bull. Soc. Nat., Moscou, 2:505-508.

Type locality: Ural Mountains, U.S.S.R.

1970. *Myotis brandti*, Hanak, Bijdr. Dierk., Amsterdam, 40(1): 40-44.

This species was recorded from only in Northeastern Anatolia. It has most likely localized, and a very rare species. The status was not defined in Turkey. There were 20 individuals in a colony encountered under a roof only in one locality.

Myotis emarginatus (Geoffroy, 1806)

1806. *Vespertilio emarginatus* Geoffroy, Ann. Mus. Hist. Nat., 8:198-199.

Type locality: France

1900. *Myotis emarginatus*, Mehely, Monogr. Chiropt. Hungariae, Budapest, 170-178.

This species was recorded from Turkish Thrace, Aegean, Mediterranean, Middle Blacksea and Southeastern Anatolia but these records are very limited. This species is known as rare species. Its colony consisted of about 50 individuals in a mine and in a cave.

Myotis nattereri (Kuhl, 1818)

1818. *Vespertilio nattereri* Kuhl H., Die Deutsche Fladermause Ann. Der Wetterauisch.Geselisch. Fur die gesammte Naturk. I, p. 33.

Type locality: Germany

1911. *Myotis nattereri* Barret-Hamilton G.A., History of British Mammals, p. 178.

This species was recorded from Western Turkey and Northeastern Anatolia. This is a very rare species. A few individuals was encountered in caves and in a fortification building.

Myotis bechsteinii (Kuhl, 1818)

1818. *Vespertilio bechsteinii* Kuhl, Ann. Wetterau. Ges. Naturk., 40(1): 30-33.

Type locality: Hanau, Hessen, Germany

1900. *Myotis bechsteinii*, Mehely, Monogr. Chiropt. Hungariae, Budapest, 184-190.

This species was recorded from a few locality in Northwestern, Southwestern and Northeastern Turkey. This is a very rare species. Its status is not known. In a nursery colony, there were 12 individuals in an old bath.

Myotis myotis (Borkhausen, 1797)

1797. *Vespertilio myotis* Borkhausen, Deutsche Fauna, 1:80.

Type locality: Germany

1897. *Myotis myotis*, Miller, Ann. Mag. Nat. Hist., 20(6):383.

This species is almost reported from whole Turkey. Its distribution is wide and continuous. It is common species in Turkey and sometimes most abundant species. Nursery colonies consisted of 200-800 individuals in caves.

Myotis blythi (Tomes, 1857)

1857. *Vespertilio blythi* Tomes, Proc. Zool. Soc., London, 53-54.
Type locality: Nasirabad, Rajputana, India
1951. *Myotis blythi*, Ellerman and Morrison-Scott, Checklist of Palaearctic and Indian Mammals. 1758-1948. Brit. Mus.(Nat. Hist.) 144-145.

This species also was reported from the Turkey. It shows a wide and continuous distribution in Turkey. It is a very common species and sometimes most abundant species. The number of individuals in populations was about 30-60. Nursery colonies consisted of about 400-900 individuals in caves.

Myotis daubentonii (Kuhl, 1819)

1819. *Vespertilio daubentonii* Kuhl, Ann. Wetterau. Gesellsch. Naturk., IV (=Neue Ann.,I), pt 2, p. 195.
Type locality: Hanau, Hessen-Nassau, Germany
1900. *Myotis daubentonii* Mehely, Chiropt. Hungariae, p.164.

This species was recorded from only in Northwestern Anatolia. This is a very rare species and its status is not known. Its colony consisted of about 15 individuals encountered in a small cave.

Myotis capaccinii (Bonaparte, 1837)

1837. *Vespertilio capaccinii* Bonaparte, Faun. Ital., 1(20).
Type locality: Sicily
1901. *Myotis capaccinii*, Thomas, Proc. Zool. Soc., London, 37.

This species was reported from only Western Turkey and Mediterranean Region of Turkey. It is a very rare species and not abundant species. Its colony consisted of about 25 individuals in caves.

Pipistrellus pipistrellus (Schreber, 1774)

1774. *Vespertilio pipistrellus* Schreber, Saugethiere, 1:167.
Type locality: France
1897. *Pipistrellus pipistrellus*, Miller, Ann. Mag. Nat. Hist. 6(20): 384-385.

This species was recorded from whole Turkey. It shows a wide and continuous distribution in Turkey. It is a very common species. In big nursery colonies, there were about one million individuals beneath the roof.

Pipistrellus nathusii (Keyserling & Blasius, 1839)

1839. *Vespertilio nathusii* Keyserling & Blasius, Arch. Naturgesch. 5(1):320.
Type locality: Berlin, Germany
1900. *Pipistrellus nathusii*, Mehely, Monogr. Chiropt. Hungariae, Budapest, 276.

This species was recorded from only Western and Eastern Anatolia. This is a very rare species. Its status is not known. Only one specimen was caught beneath the roof.

Pipistrellus kuhlii (Kuhl, 1819)

1819. *Vespertilio kuhlii* Kuhl, Ann. Wetterau. Ges. Naturk., 4(2):199-202.
Type locality: Trieste (Italian-Yugoslavian border)
1900. *Pipistrellus kuhlii*, Mehely, Monogr. Chiropt. Hungariae, Budapest, 261.

This species was recorded from Southern part of Turkey and Northeastern Anatolia. Its status in the Northern Turkey is uncertain. Big nursery colonies consisted of about 700-800 individuals in attics.

Pipistrellus savii (Bonaparte, 1837)

1837. *Vespertilio savii* Bonaparte, Iconogr. Faun. Italy., 1(20).
Type locality: Pisa, Italy
1910. *Pipistrellus savii* and *Pipistrellus savii ochromixtus*, Trouessart, faune des Mammifères d'Europe, Berlin, 13-14.

This species is recorded very limited from Central, Eastern Anatolia and Mediterranean Region of Turkey. This is a rare species. The status of it is not known in Turkey completely. There were 15-20 individuals in its colony in an attic.

Nyctalus leisleri (Kuhl, 1818)

1818. *Vespertilio leisleri* Kuhl, Ann. Wetterau. Gesselsch. Naturk., IV (=Neue Ann., I), pt. 1, p.46.
Type locality: Hanau, Hessen-Nassau, Germany
1910. *Nyctalus leisleri* Trouessart, Faune Mamm. d'Europe, p.19.

This species is reported from only in Southwestern and Northeastern Anatolia. This is a very rare species. Only one specimen was caught in a wooden house.

Nyctalus noctula (Schreber, 1774)

1774. *Vespertilio noctula* Schreber, Säugethiere, I, pl. III: description, 1, p.166.
Type locality: France
1910. *Nyctalus noctula* Trouessart, Faune Mamm. d'Europe, p.18.

This species is reported from Turkish Thrace and Mediterranean Region of Turkey, from one locality for each region. Its colony was consisted of about 15-20 individuals beneath the roof.

Nyctalus lasiopterus (Schreber, 1780)

1780. *Vespertilio lasiopterus* Schreber, in Zimmermann, Geogr. Gesch. 2:412
Type locality: Northern Italy
1951. *Nyctalus lasiopterus*, Ellerman and Morrison-Scott, Checklist of Palaearctic and Indian Mammals, 1758 to 1946. British Museum (Nat. Hist.), London, 161.

This species was recorded from one locality of Northwestern Anatolia. This is a very rare species. Its population size is not known for the time being.

Eptesicus bottae (Peters, 1869)

1869. *Vesperus bottae* Peters, Monatsberichte K. Preuss. Akad. Wiss., 406.
Type locality: Yemen, Arabia
1975. *Eptesicus bottae omanensis* Harrison, Mammalia, 39(3):415-418.

This species was recorded from a few locality in Mediterranean Region of Turkey. This is a rare species. Its colony consisted of 15-20 individuals in crevices.

Eptesicus serotinus (Schreber, 1774)

1774. *Vespertilio serotinus* Schreber, Saeugeth., 1(53):167.
Type locality: France
1900. *Eptesicus serotinus*, Mehely, Monogr. Chiropt. Hungariae, Budapest, 209.

This species was almost reported from whole Turkey. But it has discontinuous distribution. Its colony was consisted of 40-50 individuals in attics.

Otonycteris hemprichii Peters, 1859

1859. *Otonycteris hemprichii* Peters, Mber. Preuss. Akad. Wiss. 223.
Type locality: No locality, probably from some part of Northeastern Africa

This species was reported from only one locality with one specimen in Southern Turkey. This is a very rare species. Its population size is not known in Turkey.

Barbastella barbastellus (Schreber, 1774)

1774. *Vespertilio barbastellus* Schreber, Saeugethiere. I, p.168.
Type locality: Burgundy, France
1897. *Barbastella barbastellus*, Miller, Ann. And Mag. Nat. Hist., 6 th ser., xx p. 385.

This species was reported from only NE Anatolia and it is a very rare species. Colony of this species was not encountered up to now.

Plecotus auritus (Linnaeus, 1758)

1758. *Vespertilio auritus* Linnaeus, Syst. Nat., 1, 10th ed., 32.
Type locality: Sweden
1818. *Plecotus auritus* Geoffrey, Description de l'Égypte, 11:118.

This species was recently recorded correctly from Central and Northeastern Anatolia because of sibling species with *P.austriacus*. This is a very rare species and not abundant species. Its colony consisted of 20-30 individuals in attics and in caves.

Plecotus austriacus (Fischer, 1829)

1829. *Vespertilio auritus austriacus* Fischer, Synopsis Mamm., 117.
Type locality: Vienna, Austria
1960. *Plecotus austriacus*, Bauer, Bonn. Zool Beitr., 11(2-4): 141-144.

This species was recorded Turkish Thrace and Southeastern Anatolia as limited with a few localities. This is a very rare species, and not abundant species too. A few individuals were encountered in a small cave.

Miniopterus schreibersi (Kuhl, 1819)

1819. *Vespertilio schreibersi*, Kuhl, Ann. Wettau, Ges. Naturk.,4(2):185.
Type locality: Kulmbazer Cave, mountains of southern Bannat, Hungary
1857. *Miniopterus schreibersi*, Blasius, Saeugeth. Deutschland, 46-48.

This species was recorded from whole Turkey. It has a wide and continuous distribution in Turkey. It is also very common and abundant species. There were a few million individuals at least in big caves.

Fam: Molossidae

Tadarida teniotis (Rafinesque, 1814)

1814. *Cephalotes teniotis* Rafinesque, Prec. Des De Cauv. Somiol,12.
Type locality: Sicily
1951. *Tadarida teniotis*, Ellerman and Morrison-Scott, Checklist of Palaearctic and Indian Mammals 1758 - 1946. Brit. Mus. (Nat. Hist.), London, 134.

This species was reported from a few localities in each part of Western, Central, Northern, Southern and Eastern Turkey. This is a rare species. Its colony consisted of 30 – 40 individuals in crevices.

CONCLUSION

The following factors from a danger for the bat species in Turkey; habitat destruction (1), use of the pesticides unconsciously (2), forest fires (3) and any kind of troubling events with human sources (4). The dominant species of the most of caves are bats. Caves which take form the best habitat for bats have been destroying gradually for some activities such as open a road, supply marble, and build dams. Some caves are used as animal shelter (for instance for sheeps) seasonally. It is observed that sometimes shepherds or farmers lighth a fire in the caves, and fill up it with smoke in order to disturb the bats in it. On the other way, it is known that the chemicals used against the pests in a haphazard way in agricultural ecosystems in Turkey effect negatively bats by the way of insects. With many unpreventable forest fires a lot of bats and their habitats have been destroying every year. Thus, generation of some bat species live in tree cavities or under barks are under danger. It is established that some bat species live in houses are assumed as dangerous animals, and killed by human beings.

As precaution, iron grills must be fixed to the enter of caves in order to prevent the man entrances. The pesticides must not be used haphazard. Private houses for bats must be prepared and fixed to the roof of buildings which are useful for bats, or some cavities or crevices must be tolareted in the buildings. In addition, as a precaution for a long term the educational activities must be accelerated in order to acknowledge bats to people.

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