

RESEARCHES REGARDING THE BAT SPECIES (MAMMALIA, CHIROPTERA) FROM THE TINCA AREA (BIHOR COUNTY, ROMANIA)

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Abstract. The paper presents the results of researches performed during 2008 – 2019 regarding bat species and some of their ecological aspects, in the Tinca village. 13 species were identified, belonging to two families: Rhinolophidae and Vespertilionidae.

Keywords: Tinca village, bat species, Romania.

Rezumat. Cercetări privind speciile de lilieci (Mammalia, Chiroptera) din zona Tinca (județul Bihor, România).

Lucrarea prezintă rezultatele cercetărilor efectuate în perioada 2008 - 2019 privind speciile de lilieci și unele aspecte ecologice ale acestora în condițiile comunei Tinca. Au fost identificate 13 specii, aparținând la două familii: Rhinolophidae și Vespertilionidae.

Cuvinte cheie: comuna Tinca, specii de lilieci, România.

INTRODUCTION

The Tinca area is situated in the south-western part of the Bihor county, at the contact of the Miersig plain and the Holod depression. The average altitude is 11 m, the climate is temperate-continental and the vegetation belongs to the oak layer. The hydrographic system is represented by Crișul Negru river. The Tinca village includes Tinca, Râpa, Belfir, Gurbediu and Girișu Negru villages.

Recent papers and books regarding the bat species in different locations from Romania were published by different authors (NAGY & SZANTO, 2003; MURARIU, 2004, 2005 a, b, 2007; MURARIU & GHEORGHIU, 2010; ILIE, 2010, 2014, 2015, 2016 a, b; 2017; NAGY & POSTAWA, 2011; POCORA & POCORA, 2011; GOGA, 2012; BAZILESCU, 2014; HOFFMANN & HOFFMANN, 2014; STOICA et al., 2014; CSOSZ et al., 2015). The aim of this paper is to provide new information about the bat species and some of their ecological aspects from this part of Romania.

MATERIAL AND METHODS

Specimens were carefully collected by hand and with insect net and after the morphometry determination they were immediately released in their natural habitat.

The locations were: attics, cellars, abandoned houses, hollows. We mention that there are no caves in Tinca. The identification of the species was based on the book of VALENCIUC (2002).

RESULTS AND DISCUSSIONS

In the analyzed period, the following species were identified in the Tinca area:

Chiroptera Order, Rhinolophidae Family

***Rhinolophus ferrumequinum* (Schreber, 1774)**

Examined material: one small colony (15 specimens) in a cellar of the Gurbediu kindergarten, May 20, 2008; one female specimen in a hollow, Tinca forest, May 17, 2011; one small colony (11 specimens) in an abandoned forestry hut, Gurbediu forest, March 28, 2015; two male specimens, September 16, 2015, Tinca; one male specimen observed flying in the crepuscule, although the temperature was 2 – 3 °C, November 4, 2016, Tinca.

Literature data (VALENCIUC, 2002) indicates hibernation at 4°C. After this observation, the bat was no longer observed flying in area in 2016; one male specimen flying, Tinca, February 10, 2017, t=1°C. This flight is very early, particularly at this temperature! In this case, probably, this is a flight of changing the shelter because the insects (his food) are absent at this date in the air. Each species has tolerance limits for all environment factor limits and when these limits are exceeded, bats are looking for places with the best conditions.

During the heats registered in the summers of 2012, 2015, 2016, with temperatures over 40°C, this species entirely disappeared and appeared when the heat stopped (at the end of August).

Common species in Tinca area, distributed in whole Europe.

Conservation status: vulnerable species.

Distribution in Romania: western half of Romania, Dobrudja (VALENCIUC, 2002).

***Rhinolophus blasii* (Peters, 1860)**

Examined material: one male specimen in an attic of an abandoned house, Tinca, October 12, 2008; one male specimen in a cellar, Belfir, July 7, 2018.

Relatively rare species in Tinca area, distributed in the Mediterranean part of Europe. Distribution in Romania: western half of Romania (VALENCIUC, 2002).

Conservation status: endangered species.

Vespertilionidae Family

***Pipistrellus pipistrellus* (Schreber 1774)**

Examined material: one female specimen in an attic, Tinca, October 14, 2008; one male specimen in an attic of an abandoned house, Gurbediu, October 20, 2008; two male specimens in a big hollow, Tinca forest, September 27, 2008; one female specimen in flight, very early, February 22, 2015, t=15⁰ C, Tinca; one male specimen in flight, Tinca, September 20, 2016; one dead female specimen in an attic of an abandoned house, presented some wounds, produced probably by a rat, polecat or marten, Tinca, December 14, 2016; one male specimen flying, Tinca, March 22, 2017, t=17⁰ C; one female specimen flying, Tinca, May 29, 2018.

Common species in Tinca area and in Romania.

Distribution in whole Europe and in whole Romania (VALENCIUC, 2002).

Conservation status: common species.

***Myotis myotis* (Borkhausen 1797)**

Examined material: one male specimen in an attic, Tinca, October 25, 2008; one female specimen flying, Girişu Negru, June 2, 2015; one female specimen flying, Râpa August 6, 2017.

Relatively common species in Tinca area.

Distribution; whole Europe and Romania (VALENCIUC, 2002).

Conservation status: endangered species.

***Myotis bechsteini* (Kuhk 1818)**

Examined material: one dead specimen, in a steeple of Orthodox church, Tinca, March 20, 2012. Rare species in Tinca area.

Distribution: western and central part of Europe, rare species in Romania (VALENCIUC, 2002).

Conservation status: endangered species.

***Myotis dasycneme* (Boie 1825)**

Examined material: one female specimen, in a spinney of the Tinca spa, July 4, 2012; one male specimen, same place, August 12, 2015. Relatively rare species in Tinca area.

Few observations at a national level, distributed in northern part of central-eastern Europe (VALENCIUC, 2002).

Conservation status: critically endangered species.

***Myotis daubentoni* (Kuhl 1819)**

Examined material: one male specimen, Gurbediu Valley, in a hollow, June 17, 2012; one male specimen, Tinca, July 26, 2013 in a spinney near Crişul Negru river; one male specimen, Tinca, in a garret of an abandoned house, May 11, 2015.

Relatively common in the Tinca area, distributed in almost the entire Europe (VALENCIUC, 2002).

Conservation status: critically endangered species.

***Nyctalus lasiopterus* (Schreber, 1780)**

Examined material: one male specimen, Tinca, during June 30 - July 2, 2016; one male specimen, Tinca, June 7, 2019.

This species is the biggest from Europe (VALENCIUC, 2002; MACDONALD & BARRET, 1995).

Rare species in the Tinca area. Species distributed in whole Europe but very rare everywhere. In Romania it is known in the southern part of country.

Conservation status: endangered species.

***Plecotus auritus* (Linnaeus, 1758)**

Examined material: one male specimen in an attic of an abandoned house, Gurbediu, January 26, 2010; one female specimen in an attic, Tinca, July 6, 2011.

Relatively common species in Romania, distributed in whole Europe. According to literature (VALENCIUC, 2002), this species is distributed in Romania particularly in higher altitude regions. Our observations and other data (GOGA, 2012; BAZILESCU, 2014) bring new information on species distribution.

Conservation status: vulnerable species.

***Plecotus austriacus* (Fischer 1829)**

Examined material: one male specimen, in an attic of a house, Gurbediu, January 13, 2010; two male specimens, in an attic of an abandoned house, Gurbediu, May 20, 2010. Relatively rare species in the Tinca area.

Species distributed in almost whole Europe. In Romania it was identified in Carpathians, Moldavia, Dobrudja and Oltenia (VALENCIUC, 2002; GOGA, 2012; BAZILESCU 2014).

Conservation status: endangered species.

***Eptesicus serotinus* (Schreber 1774)**

Examined material: one dead male specimen, Gurbediu, April 22, 2010; one small colony (11 specimens) in an attic of an abandoned house, Râpa, June 22, 2014; one female specimen in a cellar, Belfir, August 2, 2014.

Relatively common species in Tinca area.

Distribution in whole Europe. In Romania the species is distributed in Transsylvania, Moldavia, Dobrudja, Muntenia and Banat (VALENCIUC, 2002).

Conservation status: vulnerable species.

***Barbastella barbastellus* (Schreber 1774)**

Examined material: one dead juvenile male specimen, Belfir, May 20, 2016; one male specimen in a hollow, Tinca forest, May 22, 2016.

Rare species in the Tinca area. In Romania this species is very rare (VALENCIUC, 2002) being observed only in mountainous areas.

According to other data (MACDONALD & BARRET, 1995), the species was observed also in parks, urban agglomerations.

Conservation status: vulnerable species.

***Nyctalus leisleri* (Kuhl 1818)**

Examined material: one dead male specimen, Tinca, April 11, 2019. Relatively rare species in Tinca area.

Distribution in whole Europe, but relatively rare. In Romania this species is distributed in Banat, Transsylvania Moldavia, Muntenia (VALENCIUC, 2002; BAZILESCU, 2014).

Conservation status: endangered species.

During 2008 - 2019, 13 species were recorded in the Tinca area belonging to 2 families and 7 genera.

The Rhinolophidae family is represented by *Rhinolophus* genus and 2 species.

The Vespertilionidae family is represented by the following genera: *Pipistrellus* (1 species), *Myotis* (4 species), *Plecotus* (2 species), *Nyctalus* (2 species), *Eptesicus* (1 species), *Barbastella* (1 species).

According to the site lilieci.ro, in Romania were recorded 32 bat species belonging to 10 genera.

In this case, the bat fauna from the Tinca area includes 13 species (40.62% from Romanian bat species) and 7 genera (70% from Romanian bat genera).

The relatively big number of bat species in the Tinca area could be explained by the existence of natural habitats, clean rivers, large undistributed forests, old abandoned houses.

CONCLUSIONS

During the analysed period, 13 species belonging to 2 families and 7 genera were recorded in the Tinca area. According to Red list of vertebrates from Romania (BOTNARIUC & TATOLE, 2005) there were registered 4 vulnerable species, 6 endangered species, 2 critically endangered species, 1 relatively common species.

During hibernation, flights of changing from shelters were registered, due to unfavourable conditions.

Heat and temperatures over 40°C resulted in temporary vanishing and entrance in compelled aestival diapause.

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