

New data on bats (Mammalia: Chiroptera) from the Eastern Rhodopes, Greece (Thrace, Evros)

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Introduction

The bat fauna of the Eastern Rhodopes Mts. has not been subject of a detailed study yet. A bat survey started in 1995 on the Bulgarian territory as part of the Program for Biodiversity Conservation of the Eastern Rhodopes. Additional studies in the adjacent regions of the Eastern Rhodopes in North Greece were necessary for a more exhaustive investigation.

Data on the bat fauna of Thrace (Greece) were mentioned in the articles of NIETHAMMER (1974), ILOPOULOU-GEORGUDAKI (1983) and CRUCITTI (1988). ADAMAKOPOULOS et al. (1995) reported a list of 10 bat species for the territory of the Dadia Forest Reserve (Evros).

The existing data were reviewed and new data for the distribution of 16 bat species were added: *Rhinolophus ferrumequinum*, *R. hipposideros*, *R. euryale*, *R. mehelyi*, *Myotis myotis*, *M. blythii*, *M. emarginatus*, *M. capaccinii*, *Plecotus austriacus*, *Pipistrellus pipistrellus*, *P. nathusii*, *Hypsugo savii*, *Eptesicus serotinus*, *Nyctalus noctula*, *N. leisleri*, *Miniopterus schreibersii*. Two species (*H. savii* and *N. leisleri*) were recorded for the first time in the region of Evros. Four important roosts of large bat colonies were identified - the Cave of the Cyclops (v. Maronia), the cave near v. Coufovouno, the cave Bouba Lefkimis (v. Lefkimi) and the old mines in the Dadia Forest Reserve. New data concerning the species composition, colony size and human impact have been collected.

Material and methods

The studied territory is part of the Eastern Rhodopes Mts. situated between the state boundary with Bulgaria to the North, the valley of river Evros to the East, the Aegean Sea to the South, and the valley of river Kourou to the West (Fig. 1.). The localities where bats were recorded are described in Table 1.



Fig. 1. The study area with indications of the localities where bats were recorded 1-10 (▲).

The study was carried out in the period of 16-30 July 1997 and was focused mainly in the region of the Dadia Forest Reserve. The roost survey is based on literature sources, checking of the potential roosts (natural caves, disused mine galleries, rocky blocks and massifs, buildings, etc.) and interviews collected from the local population. The species diversity was studied by visual observations, mist netting and trapping with "Tuttle-trap". The size of the bat colonies was estimated by direct counting or by use of photographs. For the assessment of the conservation value of a particular roost the criteria recommended by PALMEIRIM & RODRIGUES (1992) were used.

The information for every species is presented as follows: name of locality; date; T - single torpid specimens, MN - mist netted, lact. - lactating, ex. - unknown sex and age.

List of the species

From 28 species of bats inhabiting Greece on the territory under study in the Eastern Rhodopes 19 species were recorded (Table 2).

Table 1

List of the localities where bats were recorded (see Fig. 1)

No	Locality	Altitude m a.s.l.	Type & Habitat
1	caves near Provatonas river v. Provatonas	150	small caves and niches in volcanic rocks along the river; pine forest
2	Provatonas river v. Provatonas	150	small rocky gorge
3	cave Kamila v. Dadia	500	horizontal volcanic cave, length 30 m; old guano layer, but no bats observed; mixed broadleaf forest
4	artificial galleries Saint Barbara v. Dadia	240	disused chrome mines: I - gallery: length 40 m with 2 entrances; II gallery: length: 5 m - used temporarily by bats; forest of <i>Pinus brutia</i>
5	artificial galleries Tsoutourou v. Dadia	230	disused chrome mines: I - gallery: length 10 m; II-gallery: length: 20 m - nursery roost; III and IV small - temporary roosts; forest of <i>Pinus brutia</i>
6	Diavolorema river 10 km W from v. Dadia	50	mixed pine forest, <i>Alnus</i> along the river
7	Diavolorema river near v. Dadia	50	open agricultural land
8	cave Bouba Lefkimis v. Lefkimi	200	volcanic cave, length 25 m; nursery roost; open grass and shrub communities
9	cave Coufovouno v. Coufovouno, Didimoticho	120	limestone cave, length 100 m; nursery roost; open grass and shrub communities;
10	Cave of the Cyclops v. Maronia, Komotini	50	large horizontal limestone cave, length 2000 m; nursery roost; dwarf scrub patchy vegetation dominated by <i>Quercus coccifera</i>

Rhinolophus ferrumequinum (Schreber, 1774)

New data: cave Kamila, 18.07.1997, T 1ex.; cave Coufovouno, 23.07.1997,
nursery colony ca. 100.

Literature data: cave Coufovouno, 3.08.1971 (NIETHAMMER, 1974), cave
Avantos, v. Avas (ILIPOULOU-GEORGUDAKI, 1983), Dadia Forest Reserve
(ADAMAKOPOULOS et al., 1995).

Rhinolophus hipposideros (Bechstein, 1800)

New data: art. gallery Tsoutourou III, 22.07.1997, 1ex.

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al., 1995).

Rhinolophus euryale Blasius, 1853

New data: art. gallery Tsoutourou II, 22.07.1997, ca. 10 ex.; cave Bouba
Lefkimis, 24.07.1997, nursery colony ca. 200 ex.

Table 2

List of the bat species recorded on the territory of the Eastern Rhodopes (Greece)

LOCALITY SPECIES	1	2	3	4	5	6	7	8	9	10
<i>R. ferrumequinum</i>			+							+
<i>R. hipposideros</i>					+					
<i>R. euryale</i>					+			+		
<i>R. mehelyi</i>										+
<i>R. blasii</i>										
<i>M. emarginatus</i>	+		+							
<i>M. capaccinii</i>					+		+	+	+	
<i>M. mystacinus</i>										
<i>M. myotis</i>	+									
<i>M. blythii</i>	+			+	+					
<i>M. myotis/blythii</i>	+				+				+	+
<i>P. austriacus</i>			+							
<i>P. pipistrellus</i>	+		+				+			
<i>P. nathusii</i>						+				
<i>P. kuhlii</i>										
<i>H. savii</i>		+	+							
<i>E. serotinus</i>	+		+							
<i>N. noctula</i>	+	+								
<i>N. leisteri</i>						+				
<i>M. schreibersii</i>					+			+	+	+

- only literature data

Literature data: Provatonas, cave near v. Lefkimi, 28.07.1987, 10 ♀♀, 1 ♂ (CRUCETTI, 1988); cave Avanhos, v. Avas (ILIOPOULOU-GEORGUDAKI, 1983).

Rhinolophus mehelyi Matschie, 1901

New data: cave Coufovouno, 23.07.1997, nursery colony ca. 500.

Literature data: cave Coufovouno, 3.08.1971 (NIETHAMMER, 1974).

Rhinolophus blasii Peters, 1866

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al., 1995).

Myotis mystacinus (Kuhl, 1817)

Literature data: v. Essimi (Alexanroupoli), building, 21.08.1984 (CRUCETTI, 1988).

Myotis emarginatus (Geoffroy, 1806)

New data: caves near Provatonas river, 17.07.1997, 1 ♂, 1 ♀; cave Kamila, 24.07.1997, MN 1 ♀ lact.

Literature data: cave Avanhos, v. Avas (ILOPOULOU-GEORGUDAKI, 1983); Provatonas, cave near v. Lefkimi, 28.07.1987 (CRUCIOTTI, 1988).

Myotis capaccinii (Bonaparte, 1837)

New data: Diavolorema river near v. Dadia, 22.07.1997, MN 1 ♂ juv.; art. gallery Tsoutourou II, 22.07.1997, nursery colony ca. 100; cave Coufovouno, 23.07.1997, nursery colony ca. 300; cave Bouba Lefkimis, 24.07.1997, nursery colony ca. 100.

Literature data: cave Coufovouno, 3.08.1971 (NIETHAMMER, 1974).

Myotis myotis (Borkhausen, 1797)

New data: cave near Provatonas river, 21. 07.1997, MN 1 ♂; cave Bouba Lefkimis, 24.07.1997.

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al., 1995).

Myotis blythii (Tomes, 1857)

New data: cave near Provatonas river, 21. 07.1997, MN 5 ♂♂; art. gallery Saint Barbara I, 19.07.1997, 2 ♂♂, ca. 10 ex.

Literature data: cave Coufovouno, 3.08.1971 (NIETHAMMER, 1974).

Myotis myotis/blythii

New data: art. gallery Tsoutourou II, 22.07.1997, nursery colony ca. 500; cave Coufovouno, 23.07.1997, nursery colony ca. 600; Cave of the Cyclops, 26.07.1997, nursery colony ca. 3000.

Plecotus austriacus (Fischer, 1829)

New data: cave Kamila, 24.07.1997, MN 1 ♂.

Literature data: Cave of the Cyclops (ILOPOULOU-GEORGUDAKI, 1983).

Pipistrellus pipistrellus (Schreber, 1774)

New data: Provatonas river, 21.07.1997, MN 3 ♂♂; Diavolorema river near v. Dadia, 22.07.1997, MN 1 ♂; cave Kamila, 24.07.1997, MN 1 ♂.

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al. 1995).

Pipistrellus nathusii (Keyserling & Blasius, 1839)

New data: Diavolorema river, 19.07.1997, MN 1 ♂.

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al. 1995).

Pipistrellus kuhlii (Kuhl, 1817)

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al. 1995).

Hypsugo savii (Bonaparte, 1837)

New data: Provatonas river, 21. 07.1997, 4 ♀♀ juv., 2 ♂♂ juv.; Diavolorema river near v. Dadia, 19.07.1997, 2 ♀♀ juv., 1 ♂ juv.; cave Kamila, 24.07.1997, 6 ♂♂, 1 ♂ juv.

Eptesicus serotinus (Schreber, 1774)

New data: Diavolorema river near v. Dadia, 19.07.1997, MN 1 ♀ lact.; cave near Provatonas river, 21. 07.1997, MN 1 ♀ lact., nursery colony ca. 20 in rocky feasure; cave Kamila, 24.07.1997, MN 1 ♂.

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al. 1995).

Nyctalus noctula (Schreber, 1774)

New data: Provatonas river, 21. 07.1997, MN 2 ♂♂.

Literature data: Dadia Forest Reserve (ADAMAKOPOULOS et al. 1995)

Nyctalus leisleri (Kuhl, 1817)

New data: Diavolorema river, 19.07.1997, MN 1 ♂.

Miniopterus schreibersii (Kuhl, 1817)

New data: art. gallery Tsoutourou II, 22.07.1997, nursery colony ca. 50; cave Coufovouno, 23.07.1997, nursery colony ca. 3000-3500; cave Bouba Lefkimis, 24.07.1997, nursery colony ca. 200; Cave of the Cyclops, 26.07.1997, colony ca. 1500.

Literature data: cave Coufovouno, 3.08.1971 (NIETHAMMER, 1974).

Roosts important for the bat conservation

Cave Coufovounu

SPECIES	NUMBER OF BATS		
	August 1971 (NIETHAMMER, 1974)	July 1997	
<i>R. ferrumequinum</i>	200	100	nursery
<i>R. mehelyi</i>	400	500	nursery
<i>Myotis myotis/blythii</i>	800	600-800	nursery
<i>Myotis capaccinii</i>	100	300	nursery
<i>Miniopterus schreibersii</i>	2000	3000-3500	nursery

The cave is used as a nursery roost by 6 bat species. The number of bats remained stable during the period 1971-1997.

The roost has no special conservation status. There is a stone quarry just in front of the cave which may cause problems in future if appropriate measures for the legal protection of the roost and its vicinity are not taken.

Cave of the Cyclops

SPECIES	NUMBER OF BATS	July 1997
<i>Myotis myotis/blythii</i>	3000-3500	nursery
<i>Miniopterus schreibersii</i>	1500	nursery

The cave was visited on 26.07.1997. The visual observations confirm the presence of large colonies of two species (*M. myotis/blythii*, *Miniopterus schreibersii*). Additional studies are needed to estimate the species diversity.

The roost has no special conservation status. The cave is one of the main tourist objects in the area. There are a lot of "signs" for frequent human visits which cause a lot of disturbance to the bats. There are remains of previous attempts to close the entrance with a metal grill.

Conservation measures are needed as legal protection and limitation of the tourist visits. Closing the entrance with anything of the sort of grill is not recommended.

Cave Bouba Lefkimis

SPECIES	NUMBER OF BATS	July 1997
<i>R. euryale</i>	250	nursery
<i>Myotis capaccinii</i>	150	nursery
<i>Miniopterus schreibersii</i>	200	nursery

Additional studies are needed to estimate the species diversity. The cave is situated on the territory of the Dadia Forest Reserve and no additional conservation measures are needed.

Disused chrome mines - Dadia Forest Reserve

SPECIES	"Tsoutourou"		"Saint"	"Barbara"
	II gallery	III gallery	I gallery	II gallery
<i>R. hipposideros</i>		temporary		
<i>R. euryale</i>	nursery ?			
<i>Rhinolophus</i> spp.	ca. 10	temporary	temporary	temporary
<i>Myotis blythii</i>			temporary	
<i>Myotis myotis/blythii</i>	ca.500, nursery		temporary	temporary
<i>M. capaccinii</i>	ca.100, nursery			
<i>M. schreibersii</i>	ca.50, nursery			

Five bat species were recorded in the galleries (3 of them forming nursery colonies).

The galleries are situated in the core area of the Dadia Forest Reserve and no additional conservation measures are needed, except for the prevention of demolition of the mine entrances.

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Нови данни за прилепите (Mammalia: Chiroptera) на Източните Родопи, Гърция (Тракия, Еврос)

Теодора ИВАНОВА

(Резюме)

През периода 16-30 юли 1997 е проведено проучване върху прилепната фауна на Източни Родопи, Гърция (Тракия, Еврос) като са използвани улов с орнитологични мрежи и проверка на известни и потенциални убежища (пещери, галерии, постройки и др.).

Представени са нови данни за разпространението на 16 вида прилепи: *Rhinolophus ferrumequinum*, *R. hipposideros*, *R. euryale*, *R. mehelyi*, *Myotis myotis*, *M. blythii*, *M. emarginatus*, *M. capaccinii*, *Plecotus austriacus*, *Pipistrellus pipistrellus*, *P. nathusii*, *Hypsugo savii*, *Eptesicus serotinus*, *Nyctalus noctula*, *N. leisleri*, *Miniopterus schreibersii*. Два вида (*H. savii* и *N. leisleri*) се съобщават за пръв път за територията на провинция Еврос. Описани са 4 значими за опазването на прилепите убежища. Представени са нови данни за видовия състав и числеността на обитаващите ги колонии, както и за антропогенното въздействие и природозащитния им статут.