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BREEDING COLONIES OF *MYOTIS MYOTIS* AND *MYOTIS BLYTHI* IN PIEDMONT AND AOSTA VALLEY (NW ITALY): CHARACTERIZATION AND CONSERVATION

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ABSTRACT - The authors discuss the results of **a** survey on the occurrence of breeding colonies of *Myotis myotis* and *Myotis blythi* in Piedmont **and** Aosta Valley. Five breeding roosts were found, four of them inside historical buildings and one in **a** unused mine. Colony sizes varied from 50 to 1259 individuals (numbers estimated using photographs taken in June). Conservation problems are analysed.

Key words: *Myotis myotis*, *Myotis blythi*, Breeding colonies, Piedmont. Aosta Valley. Conservation.

INTRODUCTION

Myotis myotis and *Myotis blythi* occurr in sympatry in a large area of Western Palearctic (Ruedi ***et al.***, 1990; Lanza & Finotello, 1985; Strelkov, 1972). About thirty bibliographic and museum reports, 11 of which dating from 1980, confirm their sympatry in Piedmont and Aosta Valley (Sindaco et *al.*, 1990). In order to verify the presence of breeding colonies of the two species in the area, a survey was carried out in 1989-1994.

MATERIALS AND METHODS

The first survey stage consisted of checking old reports; then, several natural and artificial sites showing suitable characteristics for the breeding of the species were examined. For every discovered roost, data concerning its history and actual conditions were collected and, whenever possible, conservation measures were undertaken.

Colony sizes were estimated using photographs taken in the first ten days of June with one exception (census in August). This exception was because when the recorders entered the roost in June, the bats dispersed making it impossible to photograph them.

Specimens which were found dead within the roosts, were collected and identified according to their craniological features (Ruedi *et al.*, 1990). Further bats. caught at the end of the breeding season, were identified according to their external morphology (Ruedi ***et al.***, 1990; Arlettax *et al.*, 1991).

RESULTS AND DISCUSSION

Five breeding roosts were found and at least two of them were mixed colonies (Table 1; Fig.1 : Fig.2). The number of individuals identified in each colony was low, so the presence of other bat species cannot be excluded. particularly in large colonies like the one in Agliè Castle. It must be mentioned the presence of a pregnant female of *Miniopterus schreibersi* was reported in S. Vittoria d'Alba by Boano and Curletti (1974). Information gathered on the spot shows a considerable decrease in the size of all the colonies when compared with a recent past.

Table 1 - Data characterising the breeding colonies and their roosts.
(+) The reported value represents the height (in meters) of hanging points from the floor.
(*) In brackets the number of identified individuals (see also Figs. 1 and 2).

Site	Altitude m a.s.l.	Main features of surrounding environment	Location of the colony (+)	Identified species (*)	Numbers of of hats (estimate)	Date of the census
Staffarda	265	Sowable land, meadows. poplar plantations. isolated woodlots.	m 5. Brickwork vault. Ground floor room.	*Myotis myotis* (16) *Myotis blythi* (4)	1259	08/06/94
Venaria Palace	260	Town. sowable land. meadows, oak-woods (700 ha).	m 6. Brickwork vault. Cellars. East side.	*Myotis myotis* (1) *Myotis blythi* (4)	*50*	10/06/94
Agliè Castle	325	Small town, sowable land, meadows, mixed deciduous forest.	m 7-8. Brickwork vault. Several rooms in the cellars of the South side.	*Myotis blythi* (23)	810	07/06/94
Aymavilles Castle	665	Meadows. vineyards, mixed deciduous forest.	m 6.5. Stone vault. Upper rooms of East and (in 1993) North tower.	*Myotis myotis* (17)	170	10/06/94
Gypsus mine at S.Vittoria d'Alba	230	Vineyards, isolated woodlots.	m 4. Mine soot'	*Myotis myotis* (23)	430	05/08/94

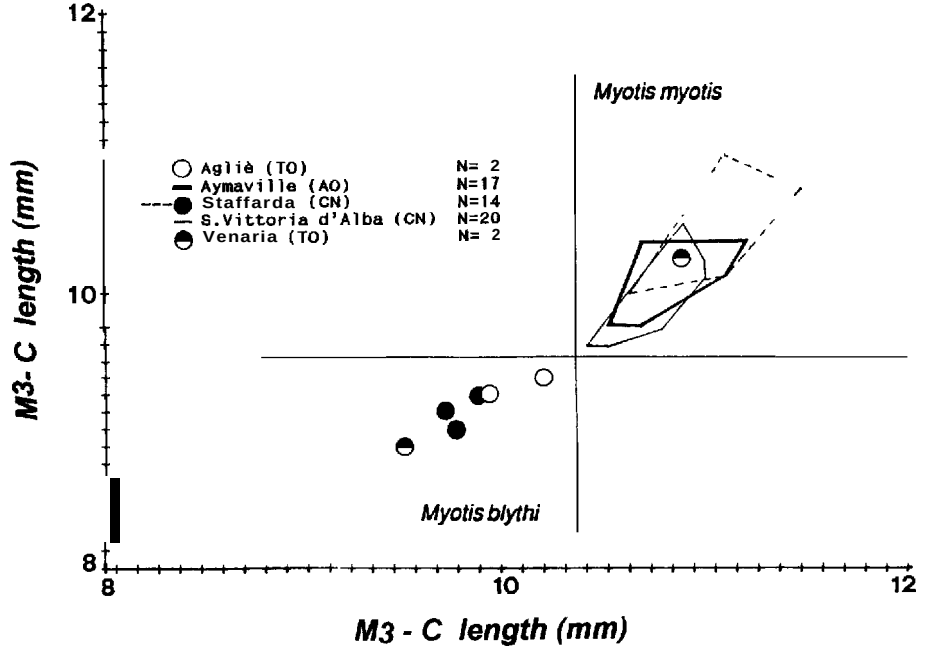

Figure 1 - Classification of specimens found dead inside the roosts according to the relationship between two craniological measures (Ruedi *et al.*, 1990).

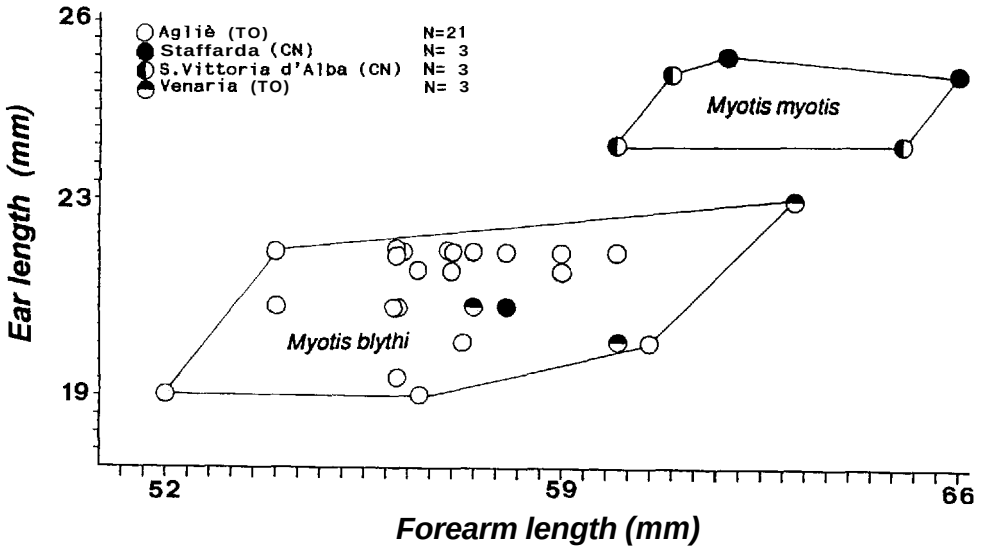

Figure 2 - Classification of live individuals according to the relationship between ear length and forearm length (Arlettaz *et al.*, 1991).

At present. owing to the number of bats, the roost of Staffarda should be considered of primary importance. The occurrence of *Myotis blythi* in the abbey had already been reported by Gulino (1938), but the use of the actual roost dates back to the Sixties. In 1994 the bats were present from 05/04/94 to 16/10/94; the first dispersion phenomena were observed in the second half of August. The roost was located along the abbey tour itinerary and for some years it was disturbed by visitors. Later however. thanks to the willingness of the Ordine Mauriziano, which owns the building, it was possible to exclude the room from the visit sites. In the meantime the trouble caused by the guano smell was minimized by collecting the droppings on a polyethylene sheet placed under the colony: the sheet is then removed periodically. A notice board erected to inform the public has been placed near the site.

The colony that uses the cellars of Venaria Palace is probably the remains of a larger nursery that roosted in the garrets of the building until the roof was rebuilt (1977-1983). At the moment, the garrets are unsuitable for bats (microclimate, smooth surface of the roofing). A re-establishment of the attractiveness of the site to bats is needed, in the hope of a spontaneous re- colonization of it.

In the meantime the actual roost should be preserved. At present it is threatened by a project aimed at using the building's basement as a museum and meeting-place.

The colony of Agliè Castle has existed for at least 45 years. Among the nurseries that have been found it represents the least disturbed one, since it is situated in empty rooms which are rarely frequented. Plus, in the near future there are no plans to restore or reuse the rooms so the bats can be left in peace.

The presence of the colony in Aymavilles Castle has been known to exist for at least 40 years. However, it suffered some eradication attempts in the Seventies and the Eighties.

We have covered a dormer window which was built on the vault of the East tower in the Seventies, because it let light into the room, so disturbing the bats.

At present the roost is threatened by a reuti-

lization project that includes the installation of a lift in the tower used by the colony. A press campaign has been raised against it and the Regional Administration has been asked to make the project compatible with the presence of the nursery.

The colony of St. Vittoria d'Alba roosts in a gypsum mine that has been unused since the Forties. It has been subjected to repeated acts of vandalism, one of which caused the burning of several bats. Moreover the colony suffers from frequent disturbance by mineral collectors and from considerable aerial spraying **of** vineyeard protection products.

For the purpose of conservation we intend to buy the mine or the mining concession and to close its entrance, leaving access points for bats.

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