

## AGREEMENT ON THE CONSERVATION OF BATS IN EUROPE

### Report on the implementation of the Agreement in ITALY

#### A. General Information

Party Range: ITALY

Date of Report: November 2013

Period Covered: 2011-2013

Competent Authority for the Agreement:

Ministry of the Environment, Land and Sea (MATTM), Directorate-general for Nature and Sea Protection (DPNM)

#### B. Status of Bats within the Territory of Italy

##### 1. Resident Species

According to the new IUCN Italian Red List of Vertebrates, published by MATTM, Italian Federation of Parks and Natural Reserves and the IUCN Italian National Committee (Rondini, et al. 2013), to date, the bat fauna of Italy includes 33 species (Table 1). *Hypsugo darwinii* should also be added to the list in the near future. Apparently restricted to Sicily and Sardinia (Veith *et al.*, 2011), this taxon is awaiting confirmation as well as an appropriate assessment of its distribution and description of the morphological traits needed to separate it from the cryptic *H. savii*. Recent work has also shown that Italian *Myotis nattereri* in fact belong to a distinct lineage also comprising individuals from France and Iberia (Salicini et al. 2011, 2013).

*Myotis dasycneme* previously included in the check-list of Italian bat species and considered as accidental in the Italian territory has been canceled from the list because the latest record is dated 1881, whereas *Rhinolophus blasii* has been considered as regionally extinct since the latest record is dated 1960.

For the uncertain taxonomic status of *Myotis aurascens* (Galimberti, et al. 2012) the species was not included in the check-list of Italian bat species.

In 2008, scientific cooperation between the research group led by Prof. Wieslaw Bogdanowicz (Polish Academy of Science) and Dr. Danilo Russo (University of Naples, Federico II) made it possible the discovery of a new cryptic species occurring in Italy, the Nymph's bat *Myotis alcathoe*. During the following years the occurrence of *Myotis alcathoe* was ascertained in other Italian regions, but population size and trend are still unknown and other work is needed (Temple & Terry

2007). To that end, last year, the Ministry for Environment funded the project: “Update of the distribution and conservation status of Italian Chiroptera and identification of monitoring and management strategies”. The objective of project is to implement a database of records available for bats in the “mystacinus” group, use habitat modeling to address specific biogeographical problems and develop monitoring and conservation guidelines for cryptic species, especially referring to the “mystacinus” group.

A new volume of the collection “Fauna d’Italia ” titled “Chiroptera” (Lanza B. 2012) was edited with the support of Italian Ministry for Environment. The book, fully devoted to the bat species occurring in Italy reviews morphology, biology, taxonomy and distribution of such species.

Further information on the distribution and ecology of Italian bats is also provided in the websites

- <http://www.minambiente.it/pagina/pipistrelli> (Ministry for the Environment)
- <http://www.iucn.it/classe-mammalia.php?ordine=CHIROPTERA> (IUCN Italian National Committee)
- <http://www.pipistrelli.net> (GIRC)

#### *List of bat species occurring in Italy [ compiled according to Eurobats.MoP4.13]*

##### **Taxon, Authority and Vernacular name**

1. *Rhinolophus euryale* Blasius, 1853 Rinolofo euriale
2. *Rhinolophus ferrumequinum* (Schreber, 1774) Rinolofo maggiore
3. *Rhinolophus hipposideros* (Bechstein, 1800) Rinolofo minore
4. *Rhinolophus mehelyi* Matschie, 1901 Rinolofo di Méhely
5. *Myotis alcatheae* von Helversen & Heller, 2001. Vespertilio di Alcatoe
6. *Myotis bechsteinii* (Kuhl, 1817) Vespertilio di Bechstein
7. *Myotis blythii* (Tomes, 1857) Vespertilio di Blyth
8. *Myotis brandtii* (Eversmann, 1845) Vespertilio di Brandt
9. *Myotis capaccinii* (Bonaparte, 1837) Vespertilio di Capaccini
10. *Myotis daubentonii* (Kuhl, 1817) Vespertilio di Daubenton
11. *Myotis emarginatus* (Geoffroy, 1806) Vespertilio smarginato
12. *Myotis myotis* (Borkhausen, 1797) Vespertilio maggiore
13. *Myotis mystacinus* (Kuhl, 1817) Vespertilio mustacchino
14. *Myotis nattereri* (Kuhl, 1817) Vespertilio di Natterer
15. *Myotis punicus* Felten, 1977 Vespertilio maghrebino
16. *Pipistrellus kuhlii* (Kuhl, 1817) Pipistrello albolimbato
17. *Pipistrellus nathusii* (Keyserling et Blasius, 1839) Pipistrello di Nathusius

18. *Pipistrellus pipistrellus* (Schreber, 1774) Pipistrello nano
19. *Pipistrellus pygmaeus* (Leach, 1825) Pipistrello pigmeo
20. *Nyctalus lasiopterus* (Schreber, 1780) Nottola gigante
21. *Nyctalus leisleri* (Kuhl, 1817) Nottola di Leisler
22. *Nyctalus noctula* (Schreber, 1774) Nottola comune
23. *Hypsugo savii* (Bonaparte, 1837) Pipistrello di Savi
24. *Eptesicus nilssonii* (Keyserling et Blasius, 1839) Seròtino di Nilsson
25. *Eptesicus serotinus* (Schreber, 1774) Seròtino comune
26. *Vespertilio murinus* Linnaeus, 1758 Seròtino bicolore
27. *Barbastella barbastellus* (Schreber, 1774) Barbastello comune
28. *Plecotus auritus* (Linnaeus, 1758) Orecchione bruno
29. *Plecotus austriacus* (Fischer, 1829) Orecchione grigio
30. *Plecotus macrobullaris* (Kuzjakin, 1965) Orecchione alpino
31. *Plecotus sardus* Mucedda et al., 2002 Orecchione sardo
32. *Miniopterus schreibersii* (Kuhl, 1817) Miniottero
33. *Tadarida teniotis* (Rafinesque, 1814) Molosso di Cestoni

## 2. Status, threats and trends

As mentioned above the IUCN Italian Red List of Vertebrates is the most updated official document on the status and trends of the bat species occurring in Italy. The assessment of extinction risk was based on the IUCN Red List Categories and Criteria and the latest guidelines. The assessment was carried out in a workshop which involved bat experts members of GIRC (Italian Chiroptera Research Group).

According to the IUCN Red List Categories and Criteria:

- one species (*Rhinolophus blasii*) was assessed as Regionally Extinct (RE)
- one species (*Nyctalus lasiopterus*) was assessed as Critically Endangered (CR) *B. barbastellus*, *M. bechsteinii*, *M. capaccinii*, *P. sardus* and *R. hipposideros* were assessed as Endangered (EN): *B. barbastellus*, *M. bechsteinii* have small and fragmented populations. Besides, they are almost exclusively associated with old-stand forests providing a large number of decaying or dead trees used for roosting. The population of *M. capaccinii* is declining and less than 20 colonies are known for Italy. *P. sardus* is endemic to Italy and its range restricted to one region (Sardinia). It has a small and declining population since only 3 reproductive colonies are known for the island. *R. hipposideros* was assessed EN because in the last years several important colonies disappeared.

- *M. schreibersii*, *M. blythii*, *M. myotis*, *M. mystacinus*, *M. nattereri*, *M. punicus*, *N. noctula*, *R. euryale*, *R. ferrumequinum* and *R. mehelyi* were assessed as Vulnerable (VU). The populations of *M. schreibersii*, *M. blythii*, *M. myotis*, *M. mystacinus*, *M. nattereri* are declining and a population reduction of more than 30% in 30 years has been inferred. The global distribution of *M. punicus* is limited to Corsica (France) and Sardinia (Italy). In Italy the species has a small population with only 10 colonies. In the last 15 years at least 3 colonies disappeared and a population reduction of more than 10% in 30 years has been inferred. The same population reduction has been also inferred for *N. noctula* (more than 10% in 30 years). For *R. euryale* and *R. ferrumequinum* the generation length is estimated at 10 years and populations are thought to be declining, due to habitat loss, by more than 30% in 3 generations. *R. mehelyi* is mainly present in Sicily and Sardinia. In Sicily the species survives only in one roost with more or less 10 bats and in Sardinia only 9 reproductive colonies are known. Former historical records concerned two tourist caves of Apulia (SE Italy), in one of which (Zinzulusa): one individual was observed in summer 2013 by Gianna Dondini and colleagues (G. Dondini, pers. comm. To D. Russo), confirming the presence in the area after over 40 years. The cave where this relict population occurs is a tourism cave and this has serious conservation implications for this species whose status is quite concerning.
- *E. serotinus*, *M. emarginatus*, *N. leisleri*, *P. nathusii*, *P. auritus*, *P. austriacus* were assessed as Near Threatened (NT) because although not at immediate risk of extinction they might become vulnerable in future if their current population / habitat trend is not corrected.
- *E. nilssonii*, *M. alcathoe*, *M. brandtii*, *P. pygmaeus*, *P. macrobullaris* were assessed as Data Deficient (DD) as taxa for which few confirmed records are available and since most of them have been only recently reported for Italy.
- *V. murinus* was assessed as Not Applicable (NA) because the species is accidental in the Italian territory.

### 3. Habitats and Roost Sites

The project named “Italian Bat Roost Data Base”, started in 1998 by GIRC, has been interrupted for technical reasons. The project aimed to collect records of bat roosts on a national scale. Over 750 sites were covered in the database. GIRC hopes to start it again soon.

Threats to roost sites are mainly given by uncontrolled access by people, caving, alteration of roost caves for tourism, renovation of buildings used by house-dwelling species and intensive forest

management altering forest heterogeneity and decreasing the numbers of potentially suitable roost trees.

Agricultural and forestry intensification had a strong impact on species relying on agroecosystems or forest for roosting or foraging. The use of pesticides still remains one of the causes of alteration of foraging habitats. The Ministry for the Environment, the Ministry of Agriculture and the Ministry of Health are collaborating on the definition of the “National Action Plan on Sustainable Use of Pesticides” (provisions of EU Directive 2009/128/EC on the sustainable use of pesticides) which will aim to indicate measures and procedures to reduce impacts on human health and the environment arising from the use of plant protection products.

Further information are available here: <http://www.minambiente.it/notizie/piano-dazione-nazionale-sulluso-sostenibile-dei-pesticidi>

Lastly the need for “green” energy is also leading to a considerable increase in wind farms. Unfortunately, no reference document such as the Eurobats guidelines for the consideration of bats in wind farm development is obligatory at national level, so although in some cases local governments (“Regioni”) have issued their own documents, the reliability of pre-construction assessments is largely variable, and monitoring of existing wind farms is still rare. On the basis of Eurobats guidelines, GIRC is working on the definition of monitoring protocols for consideration of bats in wind farm projects at national level. Regrettably, although the number and quality of windfarm pre-construction assessments is increasing, there is very little knowledge on the actual impact of wind turbines of bats in Italy since post-operam monitoring is practically non-existing. However, recent published work has highlighted that distribution models may assist landscape planners in setting up windfarms taking the risk of bat casualties into account even in absence of mortality data (Roscioni et al. 2013) so we encourage regional governments to implement a model-based approach as a first step towards a more sustainable windfarm industry in the country.

### **C. Measures Taken to Implement Article III of the Agreement**

#### *1. Legal measures taken to protect bats, including enforcement action*

Bats are protected by Italian Law since 1939. The Royal Decree “Regio Decreto” of 5 June 1939, n. 1016, “Testo Unico delle norme per la protezione della selvaggina e per l’esercizio della caccia” states that “it is always forbidden to kill or capture bats from any species” (art. 38). Nowadays, Italian bats are protected under the “Legge quadro in materia di fauna e attività venatoria” (L. 11 February 1992, n. 157), as well as under important international conventions signed by Italy (Bern Convention, 1979; Bonn Convention, 1979; Rio de Janeiro Convention, 1992); and, finally, under

the “Habitats” Directive CEE/92/43. As part of the environment, bats are also protected by the Italian Law on the ‘environmental damage’ (L. 8 July 1986, n. 349).

According to Italian law, it is forbidden to kill, capture, keep in captivity and trade bats; it is also forbidden to damage or disturb roosts and to bats, especially when hibernating or reproducing. Exceptions to these limitations should be authorized by the MATTM and by the local institutions responsible for the study area (regional, provincial or park administration). Authorizations rely upon the scientific judgment expressed by the Institute for Environmental Protection and Research (ISPRA) which will base the judgment on the validity of the scientific project, its conservation relevance, the appropriateness of methods and the species involved. According to law, MATTM and local institutions are responsible for promoting monitoring of bat conservation status, and regularly report on this to the European Community.

## *2. Sites identified and protected which are important to bat conservation*

In Italy, 557 Sites of Community Importance (SCI) identified under the provisions of the Habitats Directive (92/43/EC) are reported to be home to bats. The species listed in Annex B occurring at such sites are: *Barbastella barbastellus*, *Miniopterus schreibersii*, *Myotis bechsteinii*, *Myotis blythii*, *Myotis capaccinii*, *Myotis emarginatus*, *Myotis myotis*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros* and *Rhinolophus mehelyi*.

Threats identified at several of such sites include roost disturbance or alteration, forest management or alteration of foraging habitats.

## *3. Consideration given to habitats which are important to bats*

Research projects and environmental impact assessment have often taken the importance of bat foraging sites into appropriate consideration. A growing interest towards bat detectors among zoologists in the country is prompting the number of acoustic surveys aimed to locate important foraging sites. An ongoing project exploring foraging ecology of *Myotis daubentonii* by radiotracking at the Abruzzo Lazio and Molise National Park was partly funded by Park authorities to researchers of the University of Naples Federico II (Wildlife Research Unit, Dipartimento di Agraria).

## *4. Activities carried out to promote the awareness of the importance of the bat conservation*

The web site of the Ministry for the Environment provides information on bats in Italy, bat conservation and the Italian involvement with Eurobats devoting special pages to these issues

- <http://www.minambiente.it/pagina/pipistrelli>

- [www.minambiente.it/opencms/opencms/home\\_it/menu.html?mp=/menu/menu\\_attivita/&m=argomenti.html|biodiversita\\_fa.html/Tutela della fauna e della flora.html|EUROBATS\\_L'accordo per la conservazione.html](http://www.minambiente.it/opencms/opencms/home_it/menu.html?mp=/menu/menu_attivita/&m=argomenti.html|biodiversita_fa.html/Tutela_della_fauna_e_della_flora.html|EUROBATS_L'accordo_per_la_conservazione.html)
- [www.minambiente.it/opencms/opencms/home\\_it/menu.html?mp=/menu/menu\\_attivita/&m=argomenti.html|biodiversita\\_fa.html/Tutela della fauna e della flora.html|EUROBATS\\_english.html](http://www.minambiente.it/opencms/opencms/home_it/menu.html?mp=/menu/menu_attivita/&m=argomenti.html|biodiversita_fa.html/Tutela_della_fauna_e_della_flora.html|EUROBATS_english.html)

Important popularization actions are also carried out by the Italian Chiroptera Research Group (GIRC), parks, universities. It is worth mentioning the most famous national project named “ a bat as a friend” focusing on bat boxes, which began in 2006. Bat boxes especially designed for the project were even sold in a major supermarket network and received further publicity thanks to Walt Disney comics, many articles on newspaper, dailies or web pages.

Further information are available here: <http://www.msn.unifi.it/CMpro-v-p-468.html>

Popularization activities carried out by GIRC as well as by protected areas or single bat researchers/enthusiasts have the main scope of disseminating information on the importance of conserving bats through several initiatives. “Bat nights” and talks organized in different parts of the country attract an ever growing number of participants as well as attention from the media. The increasing public attention towards bats in Italy is also witnessed by the publication of new popular books on the subject which cover also the existence and value of EUROBATS and the role of Italy within the Agreement (Russo, 2013)

##### *5. Responsible bodies nominated for the provision of advice on bat conservation and management*

At national level, the Ministry of the Environment is the governmental authority in charge with nature conservation and environmental problems. Different departments are devoted to Biodiversity, Protection and Conservation, Protected Areas and Flora and Fauna. Some aspects such as surveillance are tasks of the Corpo Forestale dello Stato, specialized police corps acting for the Ministry of Agriculture and Forestry.

Institutions providing further scientific expertise to the Ministry of the Environment:

- Institute for Environmental Protection and Research (ISPRA), a larger institution grouping a wider expertise on environment research and protection;
- Italian Zoological Union (Unione Zoologica Italiana, UZI)
- Museums of Natural History;
- National Speleological Institute;
- Universities;
- GIRC Gruppo italiano ricerca Chiroteri (Italian Chiroptera Research Group)

The scientific focal point for the Ministry is Dr Danilo Russo. Dr Russo currently teaches Nature Conservation and Management of Reserves and is also the Italian member of the IUCN Bat Specialist Group. His address as follows:

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Tel: +39 0812532017, email: danrusso@unina.it.

*6. Considerations being given to the potential effects of pesticides on bats, and their food sources and efforts to replace timber treatment chemical, which are highly toxic to bats*

Little information is available on the effects of pesticides on Italian populations of bats. However, it is hoped that the increasing attention paid to bat conservation by both researchers and institutional authorities will soon focus more on the issue of toxic chemicals and bats. As mentioned above the Ministry for the Environment, in collaboration with the Ministry of Agriculture and the Ministry of Health are working on the definition of the “National Action Plan on Sustainable Use of Pesticides”

#### **D. Functioning of the Agreement**

##### *1. Cooperation with other Range States*

Italy is co-operating with other Range States and with other Member States of the EU in research and conservation matters, and several international collaborations between Italian researchers and those from other EU countries are in progress.

GIRC joined the “Pan-European monitoring project” promoted by Bat Life Europe (BLE) and the European Environment Agency (EEA). The project aimed to develop an indicator for population trends of European bats. The process on which the project founds is the estimation by BLE of trends obtained for all species based on the data provided by all participating countries. The objective is to identify a common bat indicator effective on a European scale.

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