

4<sup>th</sup> Meeting of the Standing Committee  
15<sup>th</sup> Meeting of the Advisory Committee

Bonn, Germany, 3 – 6 May 2010



*Draft Resolution 6.2:*  
**Amendment of the Annex of the Agreement**  
Review of Species to be listed on the Annex to the Agreement  
(Compiled by A.M. Hutson)

With reference to Resolution 3.7 (Doc.EUROBATS.MoP3.12.Rev.4), the attention of the Advisory Committee is drawn to the following matters, which may affect the Annex of bat species occurring in Europe to which the Agreement applies. The Advisory Committee may wish to propose amendments to the Annex at the next MoP. This updates similar documents produced for MoP5 (Doc.EUROBATS.MoP5.9, Inf.EUROBATS.MoP5.9, EUROBATS.MoP5.Record. Annex6).

EUROBATS.MoP5.Record.Annex6 presents a list of species revised in accordance with amendments adopted at MoP5 (Ljubljana, 2006).

This report represents the opinions of members of an 'Advisory Panel' established for the purpose of assessing potential changes to the Annex of species. The panel comprises Stephane Aulagnier (France), Petr Benda (Czech Republic), Gabor Csorba (Hungary), Sergei Kruskop (Russian Federation) and Friederike Spitzenberger (Austria) and, and co-ordinated by Tony Hutson (UK). This panel has no 'official' nomenclatural status. As 'ex-officio', Peter Lina (chairman of EUROBATS Advisory Committee) and Andreas Streit (Secretariat to EUROBATS) are also circulated for information and comment.

*Mammal Species of the World* is regarded by the International Union for the Conservation of Nature and Natural Resources (IUCN) and CMS as the standard list of mammals (see UNEP/CMS/Recommendation 9.4). A revised (3rd) edition (with the bats compiled by Nancy Simmons of the American Museum of Natural History) was published in early 2006 (Simmons, 2005). It is recommended that unless there is overriding reason, the Agreement should (in line with the policy of IUCN, CMS and others) adopt at least the generic (and higher) classification proposed in this work, but may adopt changes to the species list as appropriate.

### **1. *Barbastella leucomelas* (Cretzschmar 1826) / *darjelingensis* (Hodgson, 1855)**

Traditionally the genus has comprised two species, the Western barbastelle (*Barbastella barbastellus*) from most of Europe, plus records from Morocco and the Canary Islands, and the Eastern barbastelle (*Barbastella leucomelas*) occurring from Sinai (type locality), Eritrea and the Caucasus eastwards along the southern regions of the Palaearctic to China and Japan. The two species are sympatric in the Caucasus (and possibly Turkey). *B. leucomelas* has widely been considered to comprise a western subspecies, *B. l. leucomelas*, and an eastern subspecies, *B. l. darjelingensis* (type locality: Darjeeling, N.E. India). Horacek et al. (2000) reported difficulty in separating *B. barbastellus* from the western form of *B. leucomelas*, but found the eastern form of *B. leucomelas* to be very distinct. They suggested that the eastern form might be a separate species, *B. darjelingensis*, and the sister species to *B. barbastellus* (including *B. l. leucomelas*). In describing a new species of *Barbastellus* from China (*B. beijingensis*), Zhang et al. (2007) also found the eastern form, *darjelingensis*, as very distinct from *leucomelas* from Egypt, supported by molecular data, but withheld 'firm conclusions because of inadequate data'. Mayer et al. (2007) identify a distinct difference in the DNA of *B. leucomelas* from Sinai and central European *B. barbastellus*. Benda, Dietz et al. (2008) also recognise *B. darjelingensis* as distinct from *B. leucomelas*, which they restrict to Sinai and southern Israel (and Eritrea). Further, they recognise *B. darjelingensis* from specimens from Turkmenistan and Uzbekistan (as well as Kyrgyzstan and Tajikistan), and suggest that published data for Caucasus states (e.g. Azerbaijan) agrees with *B. darjelingensis*. Benda & Mlikovsky (2008) also recognised *B. darjelingensis* as a separate species, but without further discussion. Thus there remains little doubt that the *B. leucomelas* of the Caucasus region and adjacent areas is *B. darjelingensis*, including from published data such as Rakhmatulina (2005), but as yet no specimens have been confirmed. In the Agreement area *B. darjelingensis* is recorded from Armenia, Azerbaijan, Russia (Kandaurov, 2008), and occurs in adjacent territories to south and east.

**Recommendation:** Replace the name *Barbastellus leucomelas* with *B. darjelingensis* in the list of species of the Annex. (While it seems clear from the literature, it would be advisable to examine some specimens to confirm that the Caucasian forms are *B. darjelingensis* specimens as soon as possible.)

## **2. *Eptesicus anatolicus* Felten, 1971 and *E. bottae* (Peters, 1869)**

As reported in Inf.EUROBATS.MoP5.9, the European species assigned to *E. bottae* was under investigation. Hanak *et al.* (2001) suggested that the species in south-east Europe (Greece [Rhodes] and Turkey) might be distinct from *E. bottae* (described from Yemen) and could be assigned to a separate species *E. anatolicus* (described from Turkey and sometimes regarded as a subspecies of *bottae*). Benda *et al.* (2006) expanded morphological reasons for separating the two species, which they found to occur sympatrically in the Middle East. Mayer *et al.* (2007) used DNA to show that the Greek material was sufficiently distinct from *innesi* (Lataste, 1887) described from Cairo and currently considered a subspecies of *E. bottae*, but they were unable to compare these with true *bottae*. Benda *et al.* (2007) further identified *anatolicus* as a separate species and occurring also in Cyprus. *E. bottae* is also recorded from Armenia and Azerbaijan, and possibly Georgia. This is probably the subspecies *E. b. ognevi*. While the DNA evidence needs further investigation and probably a revision of the whole group (including its relationships to *isabellinus*) needs investigating further, there would seem to be sufficient evidence to support the proposal that the taxon occurring in Greece (Rhodes), Cyprus and coastal Turkey (to Iran) be regarded as a separate species, *E. anatolicus*. Meanwhile, the species recorded from the Caucasus remains as *E. bottae*, but needs confirmation.

**Recommendation:** Accept the addition of *E. anatolicus* Felten, 1971 to the list of species of the Annex.

## **3. *Eptesicus isabellinus* (Temminck, 1840)**

In comparing the DNA of serotine bats in Iberia and elsewhere in Europe, Ibanez *et al.* (2006) showed that the south Iberian samples represented a paler cryptic species distinct from *E. serotinus*, and which might agree with *Eptesicus isabellinus* (described from Libya and formerly regarded as a North African arid-zone subspecies of *serotinus*). Mayer *et al.* (2007) recognised *E. isabellinus* from Morocco as distinct at the species level from *E. serotinus*. Further investigations by Juste *et al.* (2009), Artyushin *et al.* (2009) and Garcia-Mударra *et al.* (2009) support the finding that *isabellinus* is a species distinct from *serotinus* and occurs in southern Spain. The Spanish populations are genetically very close to the north Moroccan populations (and with some slight but clear distinction from samples from south Morocco). It is worth noting that as long ago as 1904, Cabrera (1904) recognised *E. isabellinus* from Spain on the basis of the form of

the tragus, colour and other details. Within the Agreement area, *E. isabellinus* occurs in southern Spain and is not sympatric with *E. serotinus*. However, the name *isabellinus* seems to have been adopted without reference to any type material or other justification for the use of this name other than that pale forms are the only forms recorded from North Africa. That justification may need to be more formally examined.

**Recommendation:** Accept the addition of *Eptesicus isabellinus* (Temminck, 1840) to the list of species of the Annex.

#### **4. *Eptesicus lobatus* Zagorodniuk, 2009.**

This new species was described on the basis of the presence of a (?keeled) post-calcarial lobe in material from eastern Ukraine. No significant morphometric characters could be found to separate it from *E. serotinus*. The author assumed that this population is the western extreme of a wider range. Elsewhere in Europe, the post-calcarial lobe of *E. serotinus* is rather variable, usually obvious, although not as well developed as in some other species, but sometimes quite inconspicuous. It is considered that this is not a good character upon which to base the recognition of a new species.

**Recommendation:** Until more substantive characters can be identified, *E. lobatus* should be regarded as a synonym of *E. serotinus*.

#### **5. *Hypsugo savii* (Bonaparte, 1837)**

On the basis of DNA analysis, Ibáñez *et al.* (2006) first identified three lineages within the species *Hypsugo savii*, including one lineage from southern Iberia, one lineage from western Europe and one from eastern Europe. Then, Mayer *et al.* (2007) proposed that, on the basis of DNA analysis, a specimen from Morocco was sufficiently different from European *H. savii* as to represent a separate species. They also suggested that animals from the Canary Islands were similarly different. They provisionally called this form *Hypsugo* cf. *darwini* (Tomes, 1859), originally described from Las Palmas, Canary Islands, but long considered to be a synonym of *H. savii* (which was described from Italy). Garcia-Mudarra *et al.* (2009) also found a major difference between Moroccan forms and most mainland forms, but they also found two samples of the Moroccan form agreeing with one of the forms in southern Iberia, which occurs in sympatry with the other local mainland form. They also found a significant difference between samples from eastern and western Europe. Thus there may be at least two species within this group within the geographical scope of the Agreement. There appears to have been no direct comparison of the taxa from the Canary Islands and Morocco, despite the

previous genetic study of Pestano *et al.* (2003) which confirms the difference between samples from Spain and the Canary Islands, so the application of the name *darwini* to the Moroccan (and Iberian) samples needs further examination.

**Recommendation:** Await further investigation of the whole species-group.

#### **6. *Myotis nattereri* (Kuhl, 1817) and *Myotis escalerae* Cabrera, 1904**

With DNA analysis, Ibanez *et al.* (2006) suggest the separation of a form of *Myotis nattereri* in southern Iberia as a separate species, more closely related to forms in Morocco and to *Myotis schaubi* from northern Iran (and Armenia). It is said to be a cave-breeding species forming colonies of several hundred animals, whereas *M. nattereri* s.str. tends to form smaller colonies in trees. It is described as having a distinct strong fringe of hairs on the edge of the tail membrane, but this does not differentiate it from *M. nattereri*. They propose the name *Myotis escalerae* for this species on the basis of it being described from southern Spain (Ibanez & Fernandez, 1969) and on priority, but no formal basis for the use of this name is offered. Further study by Garcia-Mudarra *et al.* (2009) support the separation of this form as a species, and identify specimens from northern Spain where the two species may be sympatric. The species was subsequently recorded from nearby French Pyrenees (Evin *et al.*, 2009). Within the Agreement area the species is recorded from northern Spain and south-west France.

**Recommendation:** Establish whether the use of the name *escalerae* Cabrera can be justified. If so, accept the addition of *Myotis escalerae* (Cabrera, 1904) to the list of species of the Annex.

#### **7. *Pipistrellus hanaki* Hulva & Benda 2004**

Hulva & Benda in Benda *et al.* (2004) described *Pipistrellus hanaki* from Libya as a new species very closely related to *P. pygmaeus*. This was further discussed in Hulva *et al.* (2004). Later, Hulva *et al.* (2007) identified this species as a 'sister taxon' from Crete (Greece). Benda, Georgiakakis *et al.* (2008) described the Cretan form as a new subspecies, *P. h. creticus*, on the basis of morphology and genetics, and include ecological and echolocation call data. There is also a thesis by Panagiotis Georgiakakis "Geographical and elevational distribution, acoustic identification and ecology of Cretan bats", which I believe is a thesis, with additional status etc information on this species in Crete, but I have no proper reference or details of relevant data].

**Recommendation:** Accept the addition of *Pipistrellus hanaki* Hulva & Benda 2004 to the list of species of the Annex.

## **8. Other issues**

Ibanez *et al.* (2006), Mayer *et al.* (2007) and Garcia-Mударra *et al.* (2009) discuss a number of other potential cryptic species including a further species related to *M. nattereri* (from the mountains of northern Spain, Austria and northern Italy). They regard this as a good species but in the absence of any morphological or ecological characters, defer formal naming of it. This form has also been identified from the Central French Pyrenees (Evin *et al.* 2009). The same authors suggest possible separation of species within *Plecotus auritus*, *Pipistrellus pipistrellus* and *Pipistrellus kuhlii*.

Boston *et al.* (2008) identify two distinct lineages in the Irish population of *Nyctalus leisleri*, one of which is most closely related to *Nyctalus azoreum*.

The question of whether *Myotis oxygnathus* is a species separate from *Myotis blythii* remains contentious. If they are separate then the European taxon would be *M. oxygnathus*. A recent advocate for that separation is Bogdanowicz *et al.* (2009). As the matter is unsettled we propose to retain the name *blythii* for the European fauna.

There is a growing body of opinion (e.g. Van den Bussche & Hoofer, 2004; Miller-Butterworth *et al.*, 2007) that would separate the Miniopterinae as a separate family, Miniopteridae, but for reasons given in the previous document (Inf.EUROBATS.MoP5.9) and here, notably the adoption, as far as possible, by IUCN and CMS of *Mammal Species of the World* (Simmons 2005) as a standard for higher classification, it is proposed to retain it as a subfamily for the time being.

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## Summary

*[The following to be confirmed or changed subject to the opinion of advisers]*

The balance of opinion of the panel would suggest the following amendments to the EUROBATS Annex of species occurring in the Agreement area.

### 1. Policy.

1.1. For clarity and conformity with other treaties, the classification used in Simmons (2005) should be used as far as possible, in line with UNEP/CMS/ Recommendation 9.4 (2008) (*but note that this is a Recommendation rather than a Resolution*).

### 2. Changes and additions

2.1. Replace the name *Barbastella leucomelas* with *Barbastella darjelingensis* (Hodgson, 1855)

2.2. Accept the addition of *Eptesicus anatolicus* Felten, 1971 to the list of species of the Annex (and retain *Eptesicus bottae* in the list);

2.3. Accept the addition of *Eptesicus isabellinus* (Temminck, 1840) to the list of species of the Annex;

2.4. Accept the addition of *Myotis escalerae* (Cabrera, 1904) to the list species of the Annex (subject to confirmation that the name has been correctly applied);

2.5. Accept the addition of *Pipistrellus hanaki* Hulva & Benda 2004 to the list of species of the Annex.

### 3. Corrections to the Annex presented in EUROBATS.MoP5.Record. Annex6

3.1. none noted

### 4. Potential changes to be deferred pending further developments

4.1. Note that separation of species from the following may be suggested:

*Hypsugo savii*, *Myotis nattereri*, *Nyctalus leisleri*, *Pipistrellus kuhlii*, *Pipistrellus pipistrellus*, *Plecotus auritus*;

4.2. The genus *Miniopterus* is considered to belong to the subfamily Miniopterinae of the family Vespertilionidae in accordance with para 1 above.

4.3. Some other potential changes suggested in earlier versions of this document have not yet been formally published.

Agreed changes will be incorporated into a Resolution for adoption by the 6<sup>th</sup> Session of the Meeting of Parties to the Agreement (EUROBATS). A draft Resolution is attached.

A.M. Hutson  
March 2010

4<sup>th</sup> Meeting of the Standing Committee  
15<sup>th</sup> Meeting of the Advisory Committee

Bonn, Germany, 3 – 6 May 2010

*Draft Resolution 6.2 Amendment of the  
Annex of the Agreement*



*The Meeting of the Parties to the Agreement on the Conservation of Populations of European Bats (hereafter "the Agreement"),*

*Recalling* Resolution No. 7 adopted at its Third Session (Bristol, July 2000), amending the Agreement and incorporating an Annex of bat species occurring in Europe to which the Agreement applies;

*Appreciating* that the majority of Parties has already accepted the Amendment to the Agreement and that it has entered into force in August 2001;

*Recognising* that there will be the need to amend the Annex from time to time in the light of recent research results;

*Further recognising* that the names of bat species included in the Annex should conform to the rules of nomenclature laid down by the International Commission on Zoological Nomenclature;

*Noting* that IUCN – The World Conservation Union as well as the Convention on the Conservation of Migratory Species of Wild Animals (CMS) identify *Mammal Species of the World* by Wilson and Reeder (Smithsonian Institution Press, Washington; John Hopkins University Press, Baltimore) as the standard list of mammals;

*Acknowledges* the establishment of an Advisory Panel of specialists to consider potential changes to the Annex;

*Agrees* to adopt the following changes to the Annex, on the recommendation of the Advisory Panel; and

*Notes* other potential changes to the Annex, but which are rejected or deferred pending the availability of further information;

*Decides to:*

1. Replace the name *Barbastella leucomelas* with *Barbastella darjelingensis* (Hodgson, 1855);
2. Accept the addition of *Eptesicus anatolicus* Felten, 1971 to the list of species of the Annex (and retain *Eptesicus bottae* in the list);
3. Accept the addition of *Eptesicus isabellinus* (Temminck, 1840) to the list of species of the Annex;
4. Accept the addition of *Myotis escalerae* (Cabrera, 1904) to the list species of the Annex (subject to confirmation that the name has been correctly applied);
5. Accept the addition of *Pipistrellus hanaki* Hulva & Benda 2004 to the list of species of the Annex.

*Adopts* the revised list of species for the Annex to the Agreement as attached to this Resolution.

## Bat species occurring in Europe to which the Agreement applies:

*The following list is as agreed at MoP5 in 2006. It will be modified in the light of changes proposed in this Resolution and accepted by the Meeting of Parties in Prague 2010.*

### **Pteropodidae**

*Rousettus aegyptiacus* (GEOFFROY, 1810)

### **Emballonuridae**

*Taphozous nudiventris* CRETZSCHMAR, 1830

### **Rhinolophidae**

*Rhinolophus blasii* PETERS, 1866

*Rhinolophus euryale* BLASIUS, 1853

*Rhinolophus ferrumequinum* (SCHREBER, 1774)

*Rhinolophus hipposideros* (BECHSTEIN, 1800)

*Rhinolophus mehelyi* MATSCHIE, 1901

### **Vespertilionidae**

*Barbastella barbastellus* (SCHREBER, 1774)

*Barbastella leucomelas* (CRETZSCHMAR, 1826)

*Eptesicus bottae* (PETERS, 1869)

*Eptesicus nilssonii* (KEYSERLING & BLASIUS, 1839)

*Eptesicus serotinus* (SCHREBER, 1774)

*Hypsugo savii* (BONAPARTE, 1837)

*Myotis alcathoe* VON HELVERSEN & HELLER, 2001

*Myotis aurascens* KUZYAKIN, 1935

*Myotis bechsteinii* (KUHLM, 1817)

*Myotis blythii* (TOMES, 1857)

*Myotis brandtii* (EVERSMANN, 1845)

*Myotis capaccinii* (BONAPARTE, 1837)

*Myotis dasycneme* (BOIE, 1825)

*Myotis daubentonii* (KUHLM, 1817)

*Myotis emarginatus* (GEOFFROY, 1806)

*Myotis hajastanicus* ARGYROPULO, 1939

*Myotis myotis* (BORKHAUSEN, 1797)

*Myotis mystacinus* (KUHLM, 1817)

*Myotis nattereri* (KUHLM, 1817)

*Myotis nipalensis* (DOBSON, 1871)

*Myotis punicus* FELTEN, 1977

*Myotis schaubi* KORMOS, 1934

*Nyctalus lasiopterus* (SCHREBER, 1780)

*Nyctalus leisleri* (KUHLM, 1817)

*Nyctalus noctula* (SCHREBER, 1774)

*Otonycteris hemprichii* PETERS, 1859

*Pipistrellus kuhlii* (KUHLM, 1817)

*Pipistrellus nathusii* (KEYSERLING & BLASIUS, 1839)

*Pipistrellus pipistrellus* (SCHREBER, 1774)

*Pipistrellus pygmaeus* (LEACH, 1825)

*Plecotus auritus* (LINNAEUS, 1758)

*Plecotus austriacus* (FISCHER, 1829)

*Plecotus kolombatovici* DULIC, 1980

*Plecotus macrobullaris* KUZYAKIN, 1965

*Plecotus sardus* MUCEDDA, KIEFER, PIDINCHEDDA & VEITH, 2002

*Vespertilio murinus* LINNAEUS, 1758

*Miniopterus schreibersii* (KUHLM, 1817)

### **Molossidae**

*Tadarida teniotis* (RAFINESQUE, 1814)