Agreement on the conservation of populations of European bats

Update to the National implementation report of Finland

A. General Information

Party: Finland
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B. Status of Bats within the Territory of the Party

1. Summary Details of Resident Species

Thirteen species of bats have been observed in Finland. Two new species, *Pipistrellus pygmaeus* and *Eptesicus serotinus*, have been reported recently. *Pipistrellus pygmaeus* was observed by passive detector monitoring in Hanko in May 2007 (Salovaara 2007). A flying serotine was found in an industrial building in Hanko, Southernmost Finland in March 2008. The individual was brought to a cellar where it hibernated. Later in the spring this individual was found dead and the specimen was included in the collections of Turku Zoological Museum (Lappalainen 2008).

Five of the species occurring in Finland are widespread in Southern and Central Finland and occur with regularly reproducing populations (table 1). These are *Eptesicus nilssonii, Myotis daubentonii, Myotis mystacinus, Myotis brandtii* and *Plecotus auritus.*

In July 2006, the first breeding colony of *Pipistrellus nathusii* was found in South-eastern Finland (Hagner-Wahlsten & Kyheröinen 2008). In recent years this species has been regularly observed in potential breeding habitats in southern Finland (e.g. Siivonen & Wermundsen 2003 a, Vihervaara 2004a). One further, most probably reproducing species, *Myotis nattereri*, is considered as endangered (Rassi 2001). This very rare species was found hibernating in a cave in Turku, SW Finland, in winter 2003-2004 (Vihervaara *et al*. 2003) and has been observed in the hibernaculum or caught nearby for ringing in summertime yearly after that. Maximum number of hibernating individuals observed at the same time is four. A new hibernation site was found in March 2007 in Virolahti, South-Eastern Finland (Kyheröinen & Sallamaa, pers. obs.) The species has been observed in summertime also in Hanko, Southernmost Finland in several years (Salovaara, pers. comm.). There are only few previous records of this species in Finland (Stjernberg 1996, 1998, Siivonen & Wermundsen 2003 b). Siivonen & Wermundsen (2008c) report observations from Southern and South-Eastern Finland. Maximum number of individuals observed at the same hibernaculum is five (Siivonen & Wermundsen 2008c).

Nyctalus noctula is observed yearly but there is no recent, confirmed observation of this species breeding in Finland. *Pipistrellus pipistrellus* has been observed only a few times in Finland (Salovaara 2001, Siivonen & Wermundsen 2003b, however, for *Pipistrellus pipistrellus* cf. Salovaara 2001). Wermundsen & Siivonen (2004) give an overview of the distribution of Pipistrellus species in Finland. After the period reported in Wermundsen & Siivonen (2004) there are several observations of Nathusius' Pipistrelles near the southern coast as well as some observations of the Common pipistrelles (*Pipistrellus pipistrellus)*. Quite many of these were obtained by passive monitoring in 2008, during the pilot phase of a migration study. This project is described in more detail under point 12.

2. Status and Trends

Table 1 shows the distribution and status of bat species recorded in Finland. No estimates of population sizes are yet available.

Table 1. Status and distribution of the bat species recorded in Finland. Status categories: CR (critically endangered), E (endangered), V (vulnerable). No species was classified as NT (near threatened). Rassi *et al*. 2001.

Species	**Distribution/status**
Nyctalus noctula	restricted, S Finland, vagrant
Eptesicus nilssonii	widespread, to S Lapland, some records even further north
Eptesicus serotinus	one specimen found in S Finland 2008
Vespertilio murinus	restricted, S Finland, vagrant
Plecotus auritus	widespread, S & Central Finland, to 63° N lat.
Pipistrellus nathusii	restricted, S Finland. (First record 1979; first maternity colony found 2006)
Pipistrellus pipistrellus	restricted, S Finland (first record 2001)
Pipistrellus pygmaeus	one observation in S Finland 2007
Myotis nattereri	rare, S Finland/ Endangered
Myotis brandtii	widespread, S & Central Finland, to 64-65° N lat.
Myotis mystacinus	widespread, S & Central Finland, to 64-65° N lat.
Myotis daubentonii	widespread, S & Central Finland, almost to 67° N lat.
Myotis dasycneme	restricted, E Finland (1 hibernating specimen 2002, two foraging individuals 2006)

New data on the occurrence of *Myotis daubentonii* above the Arctic Circle has been published recently. Siivonen & Wermundsen (2008) report Daunbenton's bat observations between 64 ° N latitude and 65 ° N latitude as well as an isolated area of observations that is situated almost at 67° N latitude.

During the reporting process of the Habitats directive in 2007, all data available was collated to update the knowledge of the occurrence and distribution of bat species in Finland. The work was done in the Museum of Natural History and in the Finnish Environmental Centre. A review article based on the data collected then and more recent data is in preparation.

3. Habitats and Roost Sites

Some data on bat habitats and roost sites in Finland has been accumulated from recent research projects and surveys as well as from the public. More research is needed before an updated table of habitat use and roosts of different bat species in Finland can be presented. Data on hibernating sites of bats has been collected by the Finnish Museum of Natural History in co-operation with researchers and amateurs. An overview of the current knowledge on hibernation sites of bats in Finland was given by Kyheröinen *et al.* 2004. The collecting of data continues. Wermundsen & Siivonen (2008) summarize characteristics of bat hibernacula in Southern Finland.

4. Threats

Threats against nursery colonies and roosts are: felling of hollow trees, modern forest management that does not create new suitable hollow trees and favours monoculture and evenly aged forests, rebuilding and repairing of houses, both private wooden houses and summer cottages, but in some extent also houses built of stone, private as well as public buildings such as churches. Rebuilding of old bridges might also be disastrous for bats, although this topic is not very well known in Finland. Using of chemicals for treatment of timber is not considered as a serious problem today.

Threats against hibernating sites are mainly disturbance by people, especially of young people making fire in caves, or using them for other activities. Also curiosity among people combined in recent years with nature tourism has caused some disturbance.

The abandoning of traditional pastures and meadows in southern Finland, but also to some extent in central Finland may have affected the feeding habitats of some species of bats but this topic has not yet been investigated. Forest management, especially clear cuts may destroy feeding habitats and commuting routes of bats.

Lack of knowledge about bats among the public can also be considered as a threat to the conservation of bats.

5. Data Collection

Data on bats is collected by the Zoological Museum, Finnish Museum of Natural History, P. O. Box 26, FI-00014 University of Helsinki. The museum has a field journal database (www.hatikka.fi) open for the public, for all kinds of nature observations.

Basic information on hibernation, faunal composition and distribution in this report has been received from bat researchers and amateurs in Finland, as well as from published reports.

The Finnish Chiropterological Society is also collecting data on distribution and abundance of bat species as well as on the locations of roosts and hibernacula. The society has a database (www.lepakkohavainnot.info) for bat observations.

C. Measures Taken to Implement Article III of the Agreement

6. Legal measures taken to prevent the deliberate capture, keeping or killing bats, including details of enforcement actions used to support such measures

The legislation concerning bat conservation is mostly similar to the situation reported in 2000 (see text below). Few changes concerning the Nature Conservation Act have been approved: the wording “clearly identifiable” (breeding and resting sites) in § 49 was excluded in 2004.

All bats in Finland have been protected by law since 1923 (Nature Conservation Act 71/1923). All bats, both regularly occurring and vagrant species (bats), are protected according to the new Nature Conservation Act (1096/1996). According to § 39, concerning individuals of a protected species, following are forbidden: deliberate killing and capture, deliberate harming, deliberate disturbance particularly during the breeding or on any other sites of significance to their life cycles.

Licences for catching and handling bats are issued by regional environmental centres. In order to get a licence, the applicant has to submit a research/project plan in which methods aimed to be used in the study as well as the species concerned and other relevant details have to be described. Regarding ringing licences see point 13, Resolution 4.6. For research projects involving radio tracking or other invasive methods also a licence according to the Act on Animal Testing (includes regulations about methods used in the study of wildlife) needs to be issued.

The Natterer's bat is considered as a species under strict protection (Nature Conservation Decree (160/1997, § 22, Appendix 4), hence a special action plan for its protection can be made. The deterioration and destruction of a habitat important for the survival of the Natterer´s bat is prohibited after the regional environment centre has made an official decision of the borders of the site.

All bat species in Finland belong to those species mentioned in the EC Council directive 92/43/EEC, Annex IV (a). Hence, according to § 49 (Nature Conservation Act 1096/1996) following is forbidden:
- the destruction and deterioration of breeding sites and resting places
- to keep bats
- to transport bats
- to sell or exchange bats or to offer them for selling or exchange

It is possible to derogate from these provisions only for reasons mentioned in the habitats directive Article 16 (1). The permission can be given by the regional environment centre or the Finnish Environment Institute.
Finland is also a member of the Bern convention (since 21.3.1986), the Bonn convention (since 1.1.1989) and is, since October 20th 1999, a member of EUROBATS.

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The Åland Islands have a legislation of their own on nature conservation. According to the Nature Conservation Act of the Åland Islands (82/1998), § 14, all mammals except game species, are permanently protected.

7. Sites identified and protected which are important to the conservation of bats

So far there is one area that has been indicated in the town plan as an important site for bats. This area is situated in the municipality of Tampere.

Heikkilä cave in Turku, South-western Finland, has been closed and locked so that only bat workers can visit the cave to count the bats. This cave is one of the best hibernation sites known in Finland and it has been studied intensively for several years now.

Bat habitats have not generally affected the choice of sites to the Natura 2000 programme in Finland, but in a few areas in SW Finland bats were mentioned as a strengthening protectional value. In summer 2003 systematic bat surveys in Natura 2000 sites in SW Finland were conducted (Vihervaara 2004). In summer 2004, bats were surveyed by Nina Hagner-Wahlsten in several protected forest areas in SW Finland. The aim was to get data on the occurrence and abundance of bat species as well as to give advice regarding bat friendly forest management in these areas.

8. Consideration given to habitats which are important to bats

In recent years bat surveys as such or in connection with other nature surveys (vegetation, bird surveys etc.) have become more and more common in planning and building processes. The number of bat surveys per year is probably some tens nowadays. This makes it possible to take more into consideration the needs of bats – for example important feeding areas – in the land use planning.

9. Activities carried out to promote the awareness of the importance of the conservation of bats

The Finnish Chiropterological Society started organizing 'bats as a hobby' courses in 2006. Since that, courses have been organized yearly in different towns. The aim of the courses and events, such as bat walks and lectures is to increase the awareness of bats, their ecology and conservation. The society also aims at increasing the number of bat workers in Finland – which is crucial for example if data about distribution patterns and abundances of bat species is to be gathered all over the country.

With the permission of the authors, Kari Salovaara and Mikko Erkinaro translated into Finnish and adapted into Finnish conditions parts of the electronical publication Dietz, C. & Helversen, O. von (2004): Illustrated identification key to the bats of Europe. The translation is also an electronical publication (http://www.ecosyd.net/index.php?id=eli-julkaisut-bats) and it includes species occurring in Finland and adjacent areas.

The dissemination of information about bats via e-mail posting lists as well as through articles in magazines, newspapers, radio and television programmes and during excursions has continued. This work has been conducted by researchers and amateurs engaged in bat work as well as the staff of different museums and nature conservation authorities.

A leaflet on bats issued by the Ministry of the Environment has recently been translated into Swedish, the other official language of Finland. The leaflet has been sent to people asking for information on bats as well as to people participating in field trips. Also information on how to build and where to put bat boxes has been distributed during many years.

Several bat walks and lectures about bats have been organized to celebrate the European Bat Night in different localities. These and other bat events have often been very popular.

The Bat CD "We are your friends", provided by EUROBATS, was sent by the EUROBATS Secretary to the Finnish Broadcasting Company and it has been used in nature programmes.

10. Responsible bodies, in accordance with Article III.5 of the Agreement, nominated for the provision of advice on bat conservation and management

(a) Zoological Museum, Finnish Museum of Natural History, P.O. Box 26, FI-00014 University of Helsinki.
(b) The Finnish Environment Institute, P. O. Box 140, FI-00251 Helsinki.

11. Additional action undertaken to safeguard populations of bats

The topic 'bats in buildings' has aroused quite a lot of discussion and guidelines for these situations are needed to safeguard house dwelling bat colonies. Guidelines for property owners and others are in preparation.

General guidelines on how species listed in Habitats Directive's Annex IV a and Birds Directive can be considered in project planning and land use planning processes outside Natura 2000 sites were published in 2004 (Sierla *et al.* 2004).

12. Recent ongoing programmes (including research) relating to the conservation and management of bats

The Finnish Chiropterological Society started a project to study bat migration. In 2008 bats were monitored passively using AnaBat detectors on eight sites near the coast or on islands in Southern and South-Western Finland. The results of the pilot year 2008 were presented on a poster in the 1st International Bat Migration Symposium in Berlin (Kyheröinen et al. 2009). The project will be continued with more detectors.

Two research projects involving radio tracking were started in summer 2006 and were continued 2007 in South-Western and Southern Finland. These are the first Finnish studies on bats using telemetry. The species studied were *Eptesicus nilssonii* and *Plecotus auritus*. In 2008, Daubenton's bats as well as Whiskered bats and Brandts' bats were tracked in South-Western Finland and in Southern Finland, respectively.

Two Master's theses on bat ecology are in preparation, these are conducted in Helsinki and Turku universities. The results of these studies may later be applied in nature conservation.

Several bat surveys have been conducted mainly during summer seasons. Some surveys included checking of hibernacula.
Bat ringing is used in some research projects to obtain basic ecological data about bats.

Data on hibernating sites of bats is being collected by the Finnish Museum of Natural History from different sources, i.a. with the aid of bat researchers and amateurs as well as the public.

Recent publications and survey reports are given in the reference list in the end of this report.

13. Consideration being given to the potential effects of pesticides on bats, and efforts to replace timber treatment chemicals which are highly toxic to bats

The situation is similar to the previous report. A report to EUROBATS was provided by Matti Osara in 2001. The most harmful pesticides are forbidden in Finland.

D. Functioning of the Agreement

14. Co-operation with other Range States

Starting co-operation in bat migration studies in the Baltic has been planned and will be discussed in more detail in fall 2009. Professor Anders Hedenström from Uppsala will co-ordinate the work.

Finnish bat workers have visited several other countries (*e.g.* Sweden, Latvia, Germany, Poland, UK, USA), to attend conferences and workshops, to discuss with other bat workers and to learn new methods of bat research. Bat workers from Norway and Russia have visited Finland to discuss bat research during last couple of years.

15. Measures taken to implement Resolutions adopted by Meetings of Parties

Resolution 2.1 Consistent Monitoring Methodologies.

So far, no systematic large scale monitoring is going on in Finland. The line transect method seems to be the most used monitoring method. The EUROBATS guidelines that will soon be published will help us in planning monitoring schemes in the future. Kari Salovaara and Olli Haukkovaara published guidelines of the line transect monitoring method, adapted to the Finnish conditions (Haukkovaara & Salovaara 2002). According to Salovaara, revised guidelines for the line transect method as well as guidelines for inventories for spatial planning and guidelines for migration monitoring are under preparation.

Resolution 2.4. Transboundary Programme: Habitat Proposals

As the knowledge of hibernating bats in Finland still is rather scanty and wintering strategies here presumably differs, at least in details, from those in more southern regions, basic inventories of potential sites will be continued. A report of what is known is under preparation and data on important underground sites will be submitted to the database maintained by the secretariat.

Resolution 4.3 Guidelines for the protection and Management of Important Underground Habitats

So far, only some underground sites with more than a few bats have been found in Finland. However, the guidelines will be taken into consideration when managing underground hibernacula.

Resolution 4.4 Bat Conservation and Sustainable Forest Management

The new Forest Act safeguards the key biotopes of forests, e.g. small bodies of water, which could be of great importance also for bats. However, more research on bats using forest habitats and co-operation between bat workers and forest managers is needed.

Resolution 4.5 Guidelines for the Use of Remedial Timber Treatment

See point 13.

Resolution 4.6 Guidelines for the Issue of Permits for the Capture and Study of captured Wild Bats

Referring to this resolution, the Ministry of the Environment asked the Finnish Museum of Natural History to organize ringing and marking of bats in Finland. Ringing of bats in Finland started as a pilot project in 2004, according to the Guidelines in EUROBATS Resolution No. 4.6. In 2005 and 2006 few ringing projects have been started in Southern and South-western Finland.
The guidelines have been translated into Finnish and supplemented with guidelines concerning license practices etc. in Finland. All ringing of bats in Finland is coordinated by the Finnish Museum of Natural History. All bat ringers must have a special bat ringer's license which presupposes an examination on identification, sexing and ageing as well as on the legislative status of bats. The bat ringer's license also presupposes a proper research / project plan, proved ability to handle living bats or birds as well as vaccination against bat rabies.

Resolution 4.7 Wind Turbines and Bat populations

There is no published data about the impacts of wind turbines on bats in Finland. First survey and monitoring projects on the effects of wind turbines will be started in connection with environmental impact assessment process in 2009. The sites are in Southern Finland and in Åland islands.
A study on the effects of wind turbines on birds was published in October 2004. Several aspects of wind turbines were discussed in a one day seminar in 2004 organized by the Ministry of the Environment. The IWG questionnaire about wind turbines and bats has been replied.

Resolution (2.8, 3.8 &) 4.9 On the implementation of conservation and management plan

This report presents efforts to implement this resolution.

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