AGREEMENT ON THE CONSERVATION OF BATS IN EUROPE

Report on implementation of the Agreement in Portugal

- 2000 -

A. General Information

- *Name of Party*: Portugal
- *Date of Report*: 13 April 2000
- *Period Covered*: March 1998 until March 2000
- *Competent Authority*: Instituto da Conservação da Natureza

B. Status of Bats Within the Territory of the Party

1. *Summary details of Resident Species*

24 species are known in Continental Portugal (Table 1). The presence of *Pipistrellus nathusii* in the continent was reported in 1910, but there are no recent reports for this species. *Myotis mystacinus* does not have any status in this table, because when the Portuguese Red Data Book was prepared its presence in the country was still not confirmed. However, in 1994 we found one breeding colony in the North of Portugal and some individuals have been caught in mist-nets.

A revision of the Portuguese Red Data Book, using the new criteria of IUCN, is expected in the next years.

2. *Status and Trends*

Table 1 shows the status and the apparent population trends of the species known in Continental Portugal.

Table 1 - Status and apparent population trends of the species known in Continental Portugal. Data published in the Portuguese Red Data Book (1990).

Species	Status	Apparent Trend
Rhinolophus ferrumequinum	Endangered	declining
R. hipposideros	Endangered	declining
R. euryale	Endangered	declining
R. mehelyi	Endangered	declining

Myotis mystacinus	?	
M. emarginatus	Endangered	probably declining
M. nattereri	Endangered	declining
M. bechsteinii	Endangered	probably declining
M. myotis	Endangered	declining
M. blythii	Endangered	declining
M. daubentonii	Not threatened	
Pipistrellus pipistrellus	Not threatened	
P. nathusii	?	
P. kuhli	Not threatened	
Hypsugo savii	Insufficiently known	unknown
Nyctalus leisleri	Vulnerable	unknown
N. noctula	Indeterminate	unknown
N. lasiopterus	Indeterminate	unknown
Eptesicus serotinus	Not threatened	
Barbastella barbastella	Indeterminate	unknown
Plecotus auritus	Indeterminate	unknown
P. austriacus	Not threatened	
Miniopterus schreibersii	Vulnerable	declining
Tadarida teniotis	Rare	unknown

3. *Habitats and Roost Sites*

In Portugal there are many habitats that can be used by bats. We have extensive limestone zones, with many caves, that are used by cave-dwelling species both in the winter and during the breeding season. In the last decades, with the declining of the mining activities, new potential roosts became available and are now occupied.

4. *Threats*

The major threats that occur in Portugal are:

- Disturbance

  In the last years there has been an increase in the number of people involved in outdoor activities, including caving, and we often find signs of the recent presence of visitors inside the caves. The disturbance is particularly bad during the hibernation and breeding seasons. In some caves we even found signs of fires and shotgun cartridges.

- Roost destruction

Shepherds often blocked the entrance of vertical caves to keep their animals from falling in them. There are no data on the numbers of holes closed for this reason, but the practice does not seem to continue. In accordance with Portuguese law the entrances of inactive mine galleries are often closed with walls, but mines abandoned a long time ago have open entrances. Efforts are being made to avoid the blocking of the entrances of the galleries used by bats, by the mining authorities.

- Loss of feeding areas

Portugal´s landscape is changing, due to the integration in EU. The traditional land use practices (low intensity grazing, large areas of holm oak "montados", and little use of pesticides) were overall, better for the bats. The newest CAP encourages a declining in pesticides use, so it may have halted this negative trend (but there are no data on this issue).

Clearing of riparian vegetation is still a common practice.

- Pesticides

Some forbidden pesticides are still in use.

5. *Data Collection, analysis, interpretation and dissemination*

All activities related with data collection, analysis, interpretation and dissemination are done by "Instituto da Conservação da Natureza" in collaboration with "Faculdade de Ciências de Lisboa".

There are some databases prepared by "Instituto da Conservação da Natureza" and "Faculdade de Ciências de Lisboa": (a) Bat observations (based on bibliography, information and field work), (b) Underground roosts monitoring programme, and (c) Banding (captures and recaptures).

The web site of "Instituto da Conservação da Natureza" includes a database called SIPNAT (Natural Patrimony Information System) that includes information of all bat species.

C. Measures Taken to Implement Article III of the Agreement

6. *Legal measures taken to protect bats, including enforcement actions*

All bat species are protected by Portuguese law since 1967. They are also covered by international legislation, such as Bern Convention, Bonn Convention, and Habitats Directive.

The legislation of protection of caves and mines that harbour important bat populations has not been approved yet. However, protection of some caves that occur in Natural Parks is being prepared.

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

The survey of the underground roosts is already quite complete.

The roosts of the remaining species are still poorly known, although there has been an effort to locate important roosts of non cave-dwelling bats in protected areas (see point 12).

Portugal already presented the first list of Sites of Community Importance, that included 5 important underground roosts. At the time of writing of this report, the second list of Sites is being discussed in the country, and it will soon be sent to the Commission. This second list includes 10 important underground roosts.

We hope that these areas will be included in Natura 2000.

8. *Consideration given to habitats which are important to bats*

Research about feeding habitat use by bats in Portugal has been going on, using radio-tracking (see point 12). There are already good data for *Myotis myotis* and some data for *Rhinolophus mehelyi* and *Miniopterus schreibersii*. The study is expected to continue.

The study of the diet of *Myotis myotis* and its relation with prey availability in the diferent habitats was also carried out (see point 12).

Nowhere in Portugal is the landscape managed specifically to protect bat feeding habitats. However, since some of the main roosts known are inside natural parks it is hoped that the general rules to protect the landscapes in these areas will, in general, also benefit bats. Some areas of the selected Sites of Community Importance also included feeding habitats.

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

A book on the bat fauna of 9 protected areas has been published. It includes maps of known distribution of the species, an evaluation of the use of the most abundant types of habitats as bat feeding areas, and also recommendations of management measures that benefit bats in those areas.

A leaflet about bats prepared some years ago by the “Instituto da Conservação da Natureza” was republished.

A report on the status of the conservation of bats in the country was prepared.

Several activities of bat awareness carried out by NGO´s has been supported. "Associação dos Tempos Livres de Alfama" developed a project during 1999, "Bat habitats in Portugal". The project was done in co-operation with several schools, and more than 600 students took part.

Materials to be exposed in the World Exhibition EXPO98, including a poster about bat conservation, were prepared.

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

Although the "Instituto da Conservação da Natureza" had already tried that the Government prepare legislation about this, this point has not been implemented yet.

11. *Additional action undertaken to safeguard populations of bats*

See point 12.

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

a) Evaluating of the amount of disturbance of some of the most important underground roosts. Some of the most important underground roosts in Portugal are very accessible to people. Since disturbance may be very damaging to the bat populations, we are evaluating the amount of disturbance of these roosts using dataloggers that record the number of visits. Funded by "Instituto da Conservação da Natureza".

b) Control of the vegetation in the entrances of some roosts. There has been an effort to cut the vegetation in the entrances of some roosts, which sometimes become blocked.

   Funded by "Instituto da Conservação da Natureza".

c) Monitoring programme of cave-dwelling species. A monitoring programme of the cave-dwelling species is in progress since 1987. This programme involve the estimation of bat numbers present in the most important wintering and parturition roosts. The surveys are carried out annually in most of the roosts. Funded by "Instituto da Conservação da Natureza".

d) Identification of the most important feeding areas of some cave-dwelling species. Since most of the endangered bat species of our fauna are cave bats and these are concentrated in a relatively small number of roosts, we are carrying out a study aimed at the identification of the most important feeding areas around these roosts. This is being done using radio-tracking and transepts with bat detectors. We followed 31 *Myotis myotis*, 6 *Miniopterus schreibersii* and 4 *Rhinolophus mehelyi* in South-eastern Portugal using radio-telemetry. Presently we only have results about habitat selection relative to *Myotis myotis.* The individuals of this species repeatedly returned to the same feeding areas, which can indicate some individual fidelity to these areas. The median distance between feeding areas and the roost was 9 Km, being the highest distance recorded 21 Km. There was significant differences between use and availability of habitats: cork-oak areas were positively selected and cereal steppes

negatively selected. Funded by "Instituto da Conservação da Natureza" and "Faculdade de Ciências de Lisboa".

e) Diet of *Myotis myotis*. Food habits of *Myotis myotis* were studied in South-eastern Portugal between March and November 1999. The diet was determined through dropping analysis and food availability was studied through pitfall trapping. The main *taxa* found in the diet were Gryllidae (Orthoptera), Carabidae (Coleoptera) and Arachnida. There was a clear variation in the diet over the year and although the diet did not reflect food availability, the *taxa* found in the diet were also the most abundant *taxa* caught in the pitfalls. The habitats which showed higher availability of the *taxa* found in the diet were cork-oak land with reduced undercover, olive groove and cereal steppes. Funded by "Instituto da Conservação da Natureza".

f) Inventory of bat fauna in Natural Parks. Natural parks are the areas where land use practices are more closely monitored and where there are better chances of doing habitat management to improve the quality of habitats for bats. Therefore, in some of these protected areas, a study is being carried out to identify the habitats that are most used by bats during their feeding flights. The data are being collected with bat detectors, along transepts that include the most important habitats of each park. Nine protected areas are already studied, and the others will be studied in the next years. Funded by "Instituto da Conservação da Natureza".

g) Project on several aspects of population biology of *Myotis myotis*. The aim of the project was to compare the stress periods in Portugal and Germany, and to analyse if there was a difference in the social structure in the populations in South and Central Europe. Funded by "Instituto da Conservação da Natureza", "Faculdade de Ciências de Lisboa" and University of Munich.

h) Development of bat-boxes for Mediterranean areas. The purpose of this study was to develop bat-boxes with the suitable characteristics to be successfully occupied by bats in the Mediterranean region. Bat-boxes must have a wide range of internal temperatures, optimal internal temperatures for bats and keep long periods of time within this conditions. The thermal characteristics and some architectonic variables of a bat-box model were studied. The results showed that bat-boxes painted with dark colours, such as black or grey, achieved higher temperatures and the widest range of internal temperature. Furthermore, bat-boxes with a "double-roof" or with a white roof in a grey box achieved the lowest temperature, maintaining a wide range of internal temperatures. Our data supports the idea that a medium-grey bat-box is suitable for most of the Mediterranean area. Funded by "Instituto da Conservação da Natureza".

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

No action was carried out about this item.

D. Functioning of the Agreement

Co-operation with other Range States

There was a project between Portugal ("Instituto da Conservação da Natureza" and "Universidade de Lisboa") and Germany (University of Munich): "Conservation relevant aspects of population biology of *Myotis myotis*. A comparison between South and Central Europe" (see point 12).