

# **AGREEMENT ON THE CONSERVATION OF BATS IN EUROPE**

*Report on implementation of the Agreement in Portugal*

*- February 2001 -*

## ***INDEX***

### **A. General information**

### **B. Status of bats within the territory of the party**

1. Summary details of resident species.
2. Status and trends.
3. Habitats and roost sites.
4. Threats.
5. Data collection, analysis, interpretation and dissemination.

### **C. Measures taken to implement Article III of the Agreement**

6. Legal measures taken to protect bats, including enforcement action.
7. Sites identified and protected which are important to the conservation of bats.
8. Consideration given to habitats which are important to bats.
9. Activities to promote the awareness of the importance of the conservation of bats.
10. Responsible bodies, in accordance with Article III.5 of the Agreement, nominated for the provision of advice on bat conservation and management.
11. Additional action undertaken to safeguard populations of bats.
12. Recent and ongoing programmes (including research and policy initiatives) relating to the conservation and management of bats. In the case of research, summaries of completed projects should be provided, giving references where possible and acknowledging the sources of funding.
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.

### **D. Functioning of the agreement**

14. Cooperation with other Range States.
15. Measures taken to implement Resolutions adopted by Meetings of Parties.

## **A. General Information**

- ♦ *Name of Party:* Portugal
- ♦ *Date of Report:* 1 February 2001
- ♦ *Period Covered:* April 2000 until January 2001
- ♦ *Competent Authority:* Instituto da Conservação da Natureza

## **B. Status of bats within the territory of the party**

### *1. Summary details of Resident Species*

Situation similar to the last report. A revision of the Portuguese Red Data Book is expected in the next years.

### *2. Status and Trends*

Situation similar to the last report. A revision of the Portuguese Red Data Book is expected in the next years.

### *3. Habitats and Roost Sites*

Situation similar to the last report.

### *4. Threats*

Situation similar to the last report.

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

Situation similar to the last report.

## **C. Measures taken to implement Article III of the Agreement**

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

Situation similar to the last report. The legislation of protection of caves and mines that harbour important bat populations has not been approved yet.

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

The second phase of the Portuguese list of Sites of Community Interest was approved and includes several sites important to the conservation of bats.

Considering the actual list of Portuguese SIC's, it includes the majority of underground important roosts.

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 some data for *Myotis myotis*, *Rhinolophus mehelyi* and *Miniopterus schreibersii*.

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

Portuguese Bat Night 2000 was organised in two phases: (i) 5 June – A ceremony to close a project with schools organised by an NGO took place, with the presence of the Minister of Environment. 80 schools participated in this project. (ii) 22 and 23 September – Several activities were organised in Lisbon's Castle. It included an exhibition and a circuit with 7 stops, each of them with games concerning bats. Around 500 children participated in this circuit. The event was visited by the Secretary of State of Territory Planning and Nature Conservation.

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

This point has not been implemented yet.

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

See points 12 and 13.

12. *Recent and ongoing programmes (including research and policy initiatives) relating to the conservation and management of bats. In the case of research, summaries of completed projects should be provided, giving references where possible and acknowledging the sources of funding.*

- a) 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".

b) 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. A data base is being prepared to analyse the data. Funded by "Instituto da Conservação da Natureza".

c) Identification of the most important feeding areas of some cave-dwelling species.

The foraging behaviour and habitat selection in *Myotis myotis*, *Miniopterus schreibersii* and *Rhinolophus mehelyi* were studied in a dry area of Southern Portugal, mostly covered by Mediterranean scrub, stone oak woodlands, olive grooves and cereal steppe. The main objectives of this study are related to acquiring the information necessary for managing the areas around the roost. This includes: 1) To identify the feeding habitats of these species in this areas; 2) To identify the extent of the foraging range of the colony, that is, to identify the area that may be subjected to special management in order to sustain the colony. As a secondary objective we were also interested in studying other aspects of the foraging behaviour.

Several animals were marked with small radio tags and followed mostly by triangulation from fixed and mobile antennas, placed in the highest points of the landscape. All the towers had double antennas and used a precision system, which allows the bearings to have an error of less than 2 degrees. With the fixed antennas and car mounted antenna in most directions it was possible to obtain accurate location up to 10 Km, but in certain circumstances up to more than 20 Km. All the locations of the animals were incorporated in a Geographic Information System and plotted over digital aerial photographs for interpretation. Until now it was possible to follow the night 20 *M. myotis*, 6 *M. schreibersii* and 2 *R. mehelyi*. Some of this data has not yet been processed and the results presented are still preliminary and incomplete, and refer exclusively to *M. myotis*.

**Time of emergence:** All the animals left the roost just before complete darkness throughout the study season. However, the time of return to the roost varied considerably among individuals and between nights. **Foraging areas:** All the animals used fixed foraging areas where they returned most nights. Usually each animal used only one area, but often they could use two or even three. **Distance:** It was possible to identify 23 foraging areas, located up to 19 Km from the roost. The great majority of males forage within a radius of 10 Km from the roost. However, the females in general seem to forage further away. **Area:** In the cases so far analysed each foraging

area usually covers about 200 ha (90% point – Minimum convex polygon). However this value is still based on a small number of foraging areas and it may change once we analyse most of our data. **Speed:** Comparing the speed of progression during the foraging period with the movements between roost and feeding areas we found a huge difference. While in the first case it took place quite slowly, most often between 2 and 4 Km per hour, in the second case it reaches up to 40 Km per hour. This was possible because the animals usually flew directly and without stops. **Foraging habitats:** We still have not analysed most of our data and so we can not present a quantitative analysis of habitat selection. What seems quite clear is that foraging animals use most main habitats in the study area.

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

- d) 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 transects that include the most important habitats of each park. Funded by "Instituto da Conservação da Natureza".
- e) Development of bat-boxes for Mediterranean areas. The purpose of this study was to develop a bat-box with the suitable characteristics to be successfully occupied by bats in the Mediterranean region. These bat-boxes has to 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, namely the bat-box colour (white, grey, black and "wood" colour), roof colour (white and black), roof size, ventilation openings size, existence of a lateral ventilation and existence of a "double-roof". 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. The dark bat-boxes have the disadvantage of reaching high temperatures that might be excessive for bats. On the other hand, bat-boxes with a "double-roof" or with a white roof in a grey box

achieved the lowest temperatures, 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. In hotter regions the bat-boxes which seem to be the more appropriate are the ones with a bigger roof or with a white roof in a grey box. In this way we can avoid excessive temperatures inside. In the colder regions grey bat-boxes with black roof or completely black bat-boxes seemed to be more appropriate. These ones can absorb more sun radiation, increasing the heat inside. Bat-boxes thermal conditions are still under study. Now we are testing new architectonic variables and the influence of geographic orientation. Testing will be resumed in summer and winter of present year. Funded by "Instituto da Conservação da Natureza".

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*

Situation similar to the last report.

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

14. *Cooperation with other Range States*

None.

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

*Resolution 2.1 - Consistent Monitoring Methodologies*

The methodologies discussed are being applied in our monitoring programme.

*Resolution 2.4 – Transboundary Programme: Habitat Proposals*

Since underground habitats are particularly important in Portugal, a special attention has been given to them. In the National Conservation Plan of Cave-dwelling Bats (1992), information about the most important roosts is available. A national database of all roosts is being prepared.

*Resolution 2.5 – Geographical Scope of the Agreement*

A study of migratory patterns of some cave-dwelling species (*Miniopterus schreibersii*, *Myotis myotis* and *Myotis blythii*) is being conducted in a few roosts.

*Resolutions 2.7 and 3.3 – Format of National Reports*

The reports have been prepared accordingly to the new formats.

*Resolutions 2.8 and 3.8 – On the implementation of the conservation and management plan*

An effort to implement the Article III of the Agreement has being taken, as presented in this Report.

*Resolution 3.5 – International Year of the Bat*

ICN is making an effort to increase the activities of public awareness. A sticker with the logo prepared by the Secretariat is being produced, and will be circulated in ICN ´s mailing.

*Resolution 3.7 – Amendment of the Agreement*

This point has not been implemented yet.

