

## 8<sup>th</sup> Meeting of the Advisory Committee

Røros, Norway, 12 – 14 May 2003

### *Draft* Resolution No. 4.6

Guidelines for the issue of permits for the capture  
and study of captured wild bats



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

*Aware* of the fact that bats are particularly vulnerable to disturbance at certain stages of their life cycle;

*Recognizing* the value of the capture and marking, and other studies of captured bats, to develop effective methods and support efforts to conserve bat populations;

*Recognizing* also that such activities can have negative impact on the welfare of individual bats or on their populations;

*Recalling* that Article III (1) of the Agreement prohibits the deliberate capture, keeping or killing of bats except under permit from its competent authority;

*Agrees* to the following guidelines for the control of activities involving bats captured from the wild:

1. The capture of wild bats for research and conservation purposes should be licensed;
2. Licences should be issued by designated nature conservation authorities. If the authorities do not have competence in the study of bats and their conservation, they should seek the advice of a body competent for the provision of advice on bat conservation and management. Licences should be issued for a fixed (renewable) term;
3. An additional licence may be required for 'invasive' techniques in accordance with any existing Experiments on Animals Acts or Animal Welfare Acts;

4. The awarding of a licence should be subject to minimum standards set by the licensing authority. Applicants should demonstrate competence in the activities to be licensed;
5. Licences should identify permitted techniques and equipment for capture, marking and taking of samples of tissue, according to appropriate experience;
6. There should be a reporting procedure in operation for activities carried out under the licence;
7. There should be a central record of banding and other long-term marking data;
8. There should be quality controls in operation for the equipment used in 5 above, including for sources/suppliers of equipment and materials used for equipment;
9. Range states may restrict the carrying out of any of the activities in 5, such that they are:
  - allowed only under any specified circumstances
  - not allowed in particular specified circumstances (e.g. during hibernation or parturition periods)
  - restricted for use only in approved specified projects
10. There should be systems in operation to control the taking of bats (dead or alive) from the wild for laboratory or museum research, etc., and for their rehabilitation where appropriate;
11. There should be systems in operation to deal with:  
infringements of licences  
carrying out of licensable activities without an appropriate licence.

## Annex 1

Notes for the guidance of national authorities

### Ref. para 3.

An 'invasive' technique for these purposes is one which involves the removal of tissue or the subcutaneous implanting of a foreign body.

### Ref. para 5.

#### *Capture*

Approved methods of capture include:

- taking by hand
- taking by hand net
- taking by funnel or cone trap
- taking by harp trap
- taking by mist net

*Taking by hand.* Bats should be lifted off their roost, rather than pulled which can damage toes or claws

*Taking by hand net.* Nets should be of a fine or very small mesh material, such as that used in nets for entomologists (e.g. butterfly net). Hand nets should not be made with mist netting or as used for landing nets of fishermen, etc. Hand nets should always be held static (not moved or waved to catch bats in flight).

*Taking by harp trap.* Training is required to set the correct tension of the wires.

*Taking by mist net.* Considerable training is required in setting of mist-nets correctly and extraction of bats (and any birds that may co-incidentally get caught).

For the capture of bats from building or tree roosts the use of hand, hand net, funnel/cone trap and harp trap are preferred and mist nets should be avoided wherever possible.

For most purposes harp traps are easier and safer to use than mist nets (and require less training than mist nets). Mist nets should not be used for emergence trapping at caves used by large numbers of bats.

#### *Marking and taking of tissues*

The following activities should be individually licensed:

- banding or ringing
- light tagging
- radio-tracking
- use of transponders (Passive Integrated Transponder [PIT] tags)
- other specified marking
- taking of samples of tissues (e.g. blood for parasite/disease investigation, flight membrane for DNA)

*Ringing (banding).* For long-term population and migration studies, and identification of previously trapped animals. Only rings supplied by a recognized national or international organization should be used. Rings should have an inscription with at least an internationally recognizable address and individual identifying code (number).

*Light tagging.* Used for very short-term observation of bats foraging behaviour, or possibly to locate roost sites. There has been concerns expressed about potential

damage to bats from leakage of the medium carrying the fluorescence where this is not sealed in a bite or scratch-proof container.

*Radio-tagging.* For medium-term studies of foraging (time, habitat, behaviour) and for roost finding. Radio-tags should be kept to a maximum of 5% of the mass of the bat.

*Transponders (PIT tags).* PIT tags are small integrated circuit chips enclosed in a biologically inert glass capsule. They can be inserted subcutaneously (an invasive technique) or glued externally (a non-invasive marking procedure). They are commonly c.12 mm long and less than 2 mm wide. They can be used for long-term studies. They give individual identification, but only at very close range.

*Other specified marking.* This may include short-term marking techniques, such as tattoos, safe paints or other colour marking, fur-clipping. Ear or toe clipping should not be approved, and nail-clipping only for special circumstances (e.g. baby bats to identify individuals until they are old enough for more traditional marking, e.g. rings).

*Tissue sampling.* All techniques require particular training.

### *Training:*

For licensing, there should be:

- guidance on training and levels of experience/competence required
- approved sources of appropriate equipment
- guidance on field use of such equipment

*Training.* All techniques require special training, including in matters of health and safety.

*Sources of equipment.* Licence should only be issued for the use of special high quality, smoothed metal, lipped (flanged) bat rings which have been designed to minimise the risk of damage to the bats wing membrane. No licence should be issued for other types of rings. Appropriate ring sizes should be used for each bat species and are listed in Annex 2. Note that the way ring sizes are measured may vary between manufacturers.

*Use of equipment.* Information can be found in Kunz (1988) and Mitchell-Jones & McLeish (1999). In the early stages the researcher should be overseen in the field by someone experienced with the technique and aware of constraints or limitations of the technique and how to resolve problems that may arise and which may threaten the bats and/or the equipment

*Reporting procedure.* It should be a requirement of licensing that the licensee submit regular (e.g. annual) reports of activities carried out under the licence. Licensee should be encouraged to report any practical problems or concerns arising from the techniques employed.

*Record of marking data.* A national central record of all bats ringed (banded) or otherwise long-term marked should be maintained. It should be a requirement of licensing that annual records of all bats so marked should be submitted to that central register.

### Ref. para. 8.

The availability and suitability of equipment will vary. Sources and suppliers will change. New equipment will become available. The national authority or its advisers should keep aware of the most appropriate equipment available for the intended work.

### Ref. para.9.

The national authority or its advisers must decide if there are activities, which they consider, are inappropriate for their country. Restrictions to activities may involve a

total ban (for all or for selected species), may be restricted to avoid particularly sensitive periods or vulnerability through behavioural aspects of bats or particular bat species, or may be restricted to particular projects on selected species.

Ref. para.10.

Bats should only be killed for research purposes if the research is fundamental to the understanding of bat conservation issues and there is no alternative mechanism of achieving the required results.

Bats should only be taken into captivity for research purposes if the research is important to the understanding of bat conservation issues, if the institution has adequate facilities to maintain the bats in captivity (including flight space), if the bats are to be kept in captivity for a limited length of time (e.g. no more than three months), and if there is every expectation that the bats can be rehabilitated to the wild at their site of origin.

**Literature**

Kunz, T.H. (ed) 1988. *Ecological and Behavioral Methods for the Study of Bats*. Smithsonian Institution Press, Washington & London. 533pp.

Mitchell-Jones, A.J. & McLeish, A.P. (eds) 1999. *The Bat Workers' Manual*. Joint Nature Conservation Committee, Peterborough. 138pp.

## Annex 2. Recommended ring sizes for European bat species

The ring sizes quoted represent the approximate internal diameter in mm of the oval at its widest point when the gap is closed to 1 mm. 2.9 mm rings are in the 'narrow' design unless otherwise stated. These suggestions are based on experience from Germany, The Netherlands and UK, with estimates (in brackets) for other species.

<i>Rousettus aegyptiacus</i>	?
<i>Taphozous nudiventris</i>	[5.5]
<i>Rhinolophus blasii</i>	[4.2]
<i>Rhinolophus euryale</i>	[4.2]
<i>Rhinolophus ferrumequinum</i>	4.2
<i>Rhinolophus hipposideros</i>	2.9
<i>Rhinolophus mehelyi</i>	[4.2]
<i>Barbastella barbastellus</i>	2.9
<i>Barbastella leucomelas</i>	[2.9]
<i>Eptesicus bottae</i>	[2.9/4.2]
<i>Eptesicus nilssonii</i>	[2.9]
<i>Eptesicus serotinus</i>	4.2/5.5
<i>Myotis bechsteinii</i>	2.9 (+ wide)
<i>Myotis blythii</i>	4.2/5.5
<i>Myotis brandtii</i>	2.9
<i>Myotis capaccinii</i>	[2.9]
<i>Myotis dasycneme</i>	[4.2]
<i>Myotis daubentonii</i>	2.9
<i>Myotis emarginatus</i>	[2.9]
<i>Myotis myotis</i>	4.2/5.5
<i>Myotis mystacinus</i>	2.9
<i>Myotis nattereri</i>	2.9
<i>Myotis schaubi</i>	[2.9/4.2]
<i>Nyctalus lasiopterus</i>	[5.5]
<i>Nyctalus leisleri</i>	4.2/3.5
<i>Nyctalus noctula</i>	4.2/3.5
<i>Otonycteris hemprichii</i>	[5.5]
<i>Pipistrellus kuhlii</i>	2.9
<i>Pipistrellus nathusii</i>	2.9 (+ wide)
<i>Pipistrellus pipistrellus</i>	2.9/2.4
<i>Pipistrellus pygmaeus</i>	2.9/2.4
<i>Pipistrellus savii</i>	[2.9]
<i>Plecotus auritus</i>	2.9
<i>Plecotus austriacus</i>	2.9
<i>Vespertilio murinus</i>	[4.2]
<i>Miniopterus schreibersii</i>	[4.2]
<i>Tadarida teniotis</i>	[5.5]