

8th Session of the Meeting of the Parties

Monte Carlo, Monaco, 8 – 10 October 2018

Resolution 8.10

Recommended Experience and Skills of Experts with regard to Quality of Assessments



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

Recalling Article III of the Agreement;

Recalling the Council Directive No. 2011/92/EU on the assessment of the effects of certain public and private projects on the environment and the Directive of the European Parliament and of the Council No. 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, both of which state that the scope of information required for the purposes of impact assessments should be consistent with the current state of knowledge and methods of such assessments;

Referring to Resolution 8.4 on Wind Turbines and Bat Populations and and Resolution 8.6 on Bats and Light Pollution which recommend that assessments are undertaken by appropriately experienced experts;

Taking into account the increasing number of plans and projects with possible impact on populations of European Bats that require assessments;

Noting the rising demand for expertise and experts conducting impact assessments on bats;

Recognising the importance of a consistently high quality of assessments concerning bats in accordance with the above-mentioned Directives;

Recommends Parties and non-party Range States to

1. Ensure that experts/groups of experts carrying out assessment of projects, plans and programmes on populations of European bats meet the minimum standard of skills, knowledge and experience as described in the Annex to this Resolution.

2. Ensure that assessment reports of projects are objective and meet appropriate scientific quality standards.
3. Ensure that relevant authorities dealing with these assessments possess the appropriate resources and capacities to be able to assess and evaluate the results of those studies.

Requests the Advisory Committee to develop a set of criteria for evaluating the quality of assessment reports.

Decides to repeal Resolution 7.14.

Standard skills, knowledge and experience required for doing environmental assessments on bats concerning plan and projects

These skills and capacities listed below can be learnt, maintained or improved by attending specific courses, stages or training sessions. If one single expert does not fulfil the required minimum standard of experience for all the methods that are needed in the course of the studies the necessary criteria can be met by working in a team with other qualified experts. The techniques and methods detailed below do not comprise all research techniques aimed at assessing bat presence or habitat use, but only those more commonly used in environmental impact assessment.

An operator (or a team of operators) in charge of surveying or monitoring bat populations, with special reference to work done to carry out environmental impact assessments or environmental incidence assessments must:

- Know and understand the legislation and the protection (and limits to protection) afforded to bats and how it is administered and comply with it;
- Be able to identify bat species;
- Know and understand species conservation status, range, and threats at the appropriate geographic levels;
- Know and understand the general aspects of physiology of bats including adaptations to flight, echolocation, torpor, hibernation and energetics;
- Know and understand the general aspects of ecology of bats – life cycles, local phenology, habitat selection, foraging behaviour and migration behaviour.

For the **analysis of existing information and the planning of surveys**, the operator(s) must be able to:

- Identify the objectives of a survey;
- Plan surveys that are appropriate concerning timing, methods, study effort etc. + define impact area;
- List the types of survey techniques available and when to use them;
- Identify appropriate techniques for surveying.

The operator(s) must also know and understand:

- The available data and where to request them from;
- The range of surveys that can be used to identify and study bats, and their limitations;
- Seasonality and conditions and how these might affect surveys;
- How bats are considered in the planning process, and the level of information required for this.

Searching or inspecting roosts are important activities to plan protection as well as mitigation or compensation actions. In order to carry out these activities successfully, the operator(s) must be able to:

- Locate signs left by bats and use these to locate roosting position and give an indication of likely species of bat, colony size and type of roost;
- Identify safe and appropriate techniques to survey different types of bat roosts.

The operator(s) must also know and understand:

- The life cycle of a bat including breeding and social behaviour;
- The roosting preferences of different species at different times of the year.

Dead bat remains constitute a valuable source of information, and their retrieval and analysis are key to evaluate the level of impact wind turbines exert on bat populations.

The operator(s) must be able to:

- Locate dead bat remains;
- Identify dead bat remains to species or species group where relevant.

The operator(s) must also know and understand:

- The legislation regulating possession of dead bats under relevant country and EU law;
- The responsible authorities that have to be informed of the retrieval of bat remains;
- Health and safety issues related to the handling of dead bats;
- Methods for carcass search in wind farm projects;
- The correct techniques for preservation, storage and appropriate labelling of specimens.

In some cases, **capturing and handling bats** is needed to identify bats to species, assess their sex, age class, and reproductive condition, evaluate health state, and collect parasites or biological samples. Capture is invasive and may have detrimental consequences on individual bats or colonies if not properly conducted. A **licence or a permit** issued according to national laws or regulations are needed to **capture and handle bats** (see also EUROBATS Res. 4.6). Capturing bats without the necessary legal authorisations may be considered a criminal offence.

The operator(s) must be able to:

- Appropriately and safely use different capture methods;
- Handle a bat with due regard for a) its welfare and b) the operator's safety (including rabies vaccination);
- Recognise when handling is necessary and have an understanding of the sensitive periods when handling could cause the greatest stress;
- Identify a live bat in the hand to a likely species when this is achievable based on morphology and confidently age, sex and assess a bat's reproductive status.

The operator(s) must also know and understand:

- How to use the range of tools available for the capture of bats (mist nets, harp traps, hand nets, and acoustic lures);
- The licences or permits required to capture bats using appropriate methods approved by the responsible authorities;
- When capture of a bat is necessary and appropriate;
- The need to catch the minimum number of bats with the minimum disturbance for the purpose, and how to minimize handling time.

Telemetry (radio- or GPS tracking) is a powerful technique allowing the tracking of individual bats to their foraging or roosting sites. Although the kind of information obtained may be of chief importance to plan conservation or develop appropriate mitigation or compensation actions, radiotelemetry implies some invasiveness because bats need to be captured, handled and fitted with a radio or satellite tag. Such operations typically require a licence or a permit in accordance with national laws and regulations, see also EUROBATS Resolution 4.6 "Guidelines for the Issue of Permits for the Capture and Study of Captured Wild Bats" and its Annex. The weight of a tag should not exceed 5 % of the mass of the bat.

To carry out bat telemetry, the operator(s) must be able to:

- Use tracking equipment effectively to pinpoint exact roosting places, estimate distances travelled and bat locations (fixes), and collect data on foraging areas used by tagged bats;
- Judge the minimum number of bats needed for the purpose;
- Use equipment safely and appropriately;
- Apply tags with due consideration for the welfare of the bat and standard tagging guidelines.

The operator(s) must also know and understand:

- What licence or permit are required to radiotracking bats and how to apply for these;
- When bat tracking is necessary and appropriate;
- The need to catch the minimum number of bats with the minimum disturbance for the purpose;
- How to analyse and interpret correctly tracking data.

Light tagging may be occasionally employed to track visually the movement of bats in flight at night, especially to establish the flight paths adopted. The technique implies the application of a small tag emitting light, and requires bat capture, handling and tagging. As such, it is quite invasive and if not conducted appropriately, may have detrimental

consequences for bat welfare. As for capture or radiotracking, licences or permits are normally required to carry out light tagging.

The operator(s) must be able to

- Judge the minimum number of bats needed for the purpose;
- Apply tags with due consideration for the welfare of the bat and standard tagging guidelines;
- Evaluate whether light tagging is indispensable or may be safely replaced with less invasive approaches.

The operator(s) must also know and understand:

- What licence or permit are required to light-tag bats and how to apply for these;
- When this technique is necessary and appropriate;
- The need to catch the minimum number of bats with the minimum disturbance for the purpose;
- How to analyse and interpret correctly observational data obtained through light-tagging.

Bat banding is rarely employed for bat surveys finalized to carry out environmental impact assessments or environmental incidence assessments. Bats are typically banded to analyse their long-range movements, such as those associated with migration or dispersal, establish roost switching patterns, or recognize individual subjects for behavioural and population studies. Bands used to establish migration routes or assess dispersal typically are made of metal and show unique identification codes to identify the geographic origin and identity of recaptured subjects. In many countries, national or regional databases exist where capture data (species identity, sex, age class, etc.) are recorded along with the identification code of the band used to tag the bat. Coloured plastic rings are sometimes used in behavioural studies to tell individuals apart. If bands are applied incorrectly, they may harm the banded bat seriously or even kill it. Published information shows that the degree of tolerance to banding varies considerably across species, or even among populations of the same species. Banding is an invasive procedure and should only be used if *a)* no alternative exist to reach a specific research goal, and *b)* the conservation value of the information obtained through banding clearly outweighs the risk of affecting bat welfare. Banding typically requires a **licence or a permit** issued by national or regional authorities. See also EUROBATS Res. 4.6 and its Annex 9c for recommended ring sizes for European bat species.

To perform banding, the operator(s) must be able to:

- Judge the minimum number of bats needed for the purpose;
- Apply tags with due consideration for the welfare of the bat and standard tagging guidelines.

The operator(s) must also know and understand:

- What licence or permit are required to band bats and how to apply for these;
- When bat banding is necessary and appropriate;
- The need to catch the minimum number of bats with the minimum disturbance for the purpose;
- How to communicate banding records to the relevant authorities responsible for the management of the national or regional bat banding database;
- How to analyse and interpret correctly banding data.

The **detection and recording of bat ultrasound** is a fast-growing methodological field that over the last few years has gained momentum thanks to the development of real-time bat detectors, including automated detectors that are triggered by bat calls and therefore do not require the presence of an operator. No licence is needed to carry out acoustic surveys.

The operator(s) must be able to:

- Use a range of bat detectors to identify species or groups of species and record their activity;
- Choose and use competently the correct equipment for the survey and recognise its limitations;
- Employ static detectors to complement manual activity survey techniques that identify species or groups of species, relative frequency, timing and type of bat use of a site.

The operator(s) must also know and understand the advantages and limitations of different detector systems.

Bat sound analysis and bat call identification are crucial phases to correctly identify bat echolocation and social calls to species, when possible, and interpret correctly bat occurrence, activity and habitat use.

The operator(s) must be able to:

- Use a sound analysis software package to a) analyse field recordings, measure values of call variables, and compare them to published datasets;
- Identify echolocation calls to a likely species group when possible and understand the limits of identification;
- In case automated bat classifiers are used, employ these wisely and prudently, fully comprehending the (still significant) technical limitations of this approach and the necessity of confirming the identity of echolocation calls by manual analysis (vetting) whenever reasonable doubts arise on the reliability of the automated response.

The operator(s) must also know and understand:

- The advantage and limitations of different software;
- The parameters required to identify calls to species or genus where applicable;

- Bat call variation, and its implication for species identification;
- The necessity and the most appropriate way to collect metadata that complement recordings, and for how long recordings should be stored, if relevant.

In **assessing the results** of a survey or a monitoring activity, the operator(s) must be able to:

- Record and understand survey effort and data required when surveying roost structures, underground sites, single roost trees in a wood and flight lines;
- Evaluate the potential role of a building, tree or other structure/feature for use as a bat roost;
- Compile results for each species and determine the extent and pattern of activity for species or groups as required;
- Determine temporal and seasonal changes across a study site;
- Identify areas of importance (such as feeding areas, commuting routes) from the extent or type of activity;
- Estimate the number of bats using roosts;
- Categorize the bat usage of a study site.

The operators must be able to **provide management or mitigation/compensation recommendations**, including advice on further surveys or monitoring when needed. The operator(s) must know and understand best practice in mitigation/compensation strategies and monitoring techniques.

Clear reporting is a final, crucial aspect of delivering the results of any environmental impact study.

The operator(s) must be able to prepare concise reports with clear description of methods used, results and their assessment, uncertainties due to methods or other reasons and recommendations based on the results. Clear and informative graphs, maps etc. are part of a good report.

The operator(s) must also be able to deliver data to appropriate/national databases, when relevant.