

# Atlas of European Mammals: 2<sup>nd</sup> Edition

## Notes on the Agenda

### Background

#### Objectives for 2<sup>nd</sup> edition

1. To publish a book of distribution maps of all terrestrial mammals occurring in Europe. The maps should, as far as possible, show the current distribution of species. The maps should be accompanied by an explanatory text. We are not proposing an identification handbook.
2. To publish on-line interactive distribution maps, based on the data used to prepare the book.

#### Geographic scope

The 1<sup>st</sup> edition of the Atlas covered Western Europe, as far east as the Baltic States, Poland, Slovakia, Romania, and Bulgaria. Our ambition this time is to include the whole of geographic Europe, as far east as the Ural Mountains. The definition of geographic Europe for the Atlas Flora Europaea is based on Brummitt, R K (2001) *World Geographical Scheme for Recording Plant Distributions (2nd Ed)*, though for our purposes some issues remain to be discussed. These include:

- Eastern Greek islands. Some close to the coast of Turkey are included in Western Asia by Brummitt); we may wish to include the whole of Greece in our project.
- The Macaronesian islands of Canaries, Madeira and the Azores, all of which Brummitt puts into Africa-Macaronesia. We suggest colleagues from Spain and Portugal should be consulted.
- The eastern boundary in Russia. Brummitt's proposal follows the nearest administrative (Oblast) borders to the Urals and excludes the whole of Kazakhstan. This seems a good solution.
- The southern boundary in Russia. Brummitt's proposal omits several administrative regions of Russia, north of the Caucasus Mountains. This may have good justification on botanical grounds, but is it a good solution for mammals? An alternative solution is to include Russia up to the border with Georgia and Azerbaijan. Advice needed on this.

The current European Breeding Birds Atlas project has the same eastern border in Russia, but includes the countries of the Caucasus and whole of Turkey, as well as the Macaronesian islands referred to above. However, this is a much bigger project, involving thousands of observers.

#### Resolution and mapping system

We propose that the maps are prepared using the Chorological Grid Reference System, developed for the Atlas Flora Europaea and used for other biological distribution mapping projects in Europe. This is based on the UTM projection and the Military Grid Reference System. Cell size is generally 50 x 50km, though 'seam cells', which allow for the curvature of the earth, can be smaller and larger. This is considered an appropriate scale for mapping at the European scale and avoids overlap with national atlases, which usually have a cell size of 10 x 10km or smaller. The grid, which covers the whole area proposed, is freely available in various formats. In cases where two or more countries share a grid square, we suggest collecting data separately for each country.

## Species list

The taxonomic authority for the first atlas was Wilson & Reeder (1993) *Mammal species of the world, a taxonomic and geographic reference* (2<sup>nd</sup> Edition). We departed from this in only a few cases which are described in the atlas.

For the 2<sup>nd</sup> edition of the Atlas, we recommend the 3<sup>rd</sup> edition of Wilson & Reeder (2001) as the starting point, though a taxonomy sub-group is needed to finalise the list once the geographic scope has been confirmed.

Discussion is needed on the treatment of domesticated forms, alien species, transients and escapes, sibling species and how to cope with taxonomic changes during the life of the project.

A draft species list, prepared by F. Spitzenberger, V. Vohralík and J. Zima will be presented for discussion at the meeting.

## Time periods and symbols

Where biological records (species, location, date) are held in a database, the date range can be chosen whenever the database is queried. However, this approach cannot be used when the data are not held as biological records but as data to prepare a map. We must, therefore, decide on the date ranges at the start of the project, before data collection begins. These will be a compromise between including as many records as possible and giving a current view of the distribution of a species. It is also confusing to have too many date classes on a map. For the 1<sup>st</sup> edition, we used date classes of 'before 1970' and 'after 1970', with some adjustment to allow for known recent extinctions. For the 2<sup>nd</sup> edition, this could be extended to a third date class, perhaps 'after 2000' (from 1/1/2001?). This would allow the inclusion of older literature records for areas that have not previously been mapped whilst also highlighting more recent records. This proposal needs further discussion.

## Data management and ownership

The intention of the 1<sup>st</sup> Edition was to ensure that all dots on the map reflected verified biological records held in national datasets or literature, with no extrapolation to cover unrecorded areas. This was largely achieved.

We propose that the same guiding principle is used for the 2<sup>nd</sup> Edition. Thus, a dot on a map should be traceable back to one or more verified biological records held in an identified database or publication.

This proposal raises a number of issues to be discussed, which also involve the way in which the project is organised.

- Where countries have national or regional databases of mammal records (including atlases), the situation is reasonably clear: a dot on a map signifies that the database of the country or region contains one or more records of that species in that date class (see below). Details of how the database can be accessed should be given in the atlas. This approach means that our project does not need to 'own' or store the biological record.
- Where countries or regions do not currently have databases of mammal records, the situation is more complex and discussion is needed. As far as possible, it would be good to have one authority for each country/region taking responsibility for creating a database of records, collected from the literature, from researchers or from the field. The European Atlas project should avoid becoming the 'owner' of biological records, as we have no resources to

manage and maintain a primary database of this type. Records should be either published or 'owned' by the country/region where they were collected. This leaves a possibility for countries to publish their own atlases, perhaps at a finer scale (10 x 10km?) than the European one.

Following the publication of the first atlas, we have received a number of requests for access to the dataset for research purposes. These have generally been granted. For the second edition, perhaps we need to ensure that contributors to the atlas have an early opportunity to have access to the dataset before it is made generally available.

No doubt there will be other issues to discuss relating to the storage and ownership of records.

## **Ways of working**

The identification of national coordinators, as with the previous atlas, seems a necessary first step. These people (perhaps up to 3 per country in some cases) took responsibility for coordinating the preparation of national datasets and submitting these to the atlas project. For countries with national databases, it would be usual to appoint someone involved with the management of that database who could arrange any necessary permissions to contribute data. For other countries, the situation could be more flexible, but we should encourage and support good cooperation between organisations and individuals with data to contribute. A small number of Regional Coordinators, responsible for large areas, could provide this support and help individual countries resolve any problems that arise. We also need to have some way of treating countries where we have no national coordinator.

A Steering Group will be needed to take on the overall management of this long-term project and further sub-groups (temporary or permanent) may be needed for taxonomy, data-management, funding etc. As the number of people with time to commit to this project is limited, we should try to keep all these structures small and effective. Most communication can be by e-mail, perhaps with occasional meetings of the Steering Group or some regional groupings. Since the preparation of the first atlas, the use of databases and GIS has improved considerably, but we will need some help with deciding what information to store and how to do this. An on-line database, with editing facilities may now be possible.

## **Authorship and acknowledgements**

A guiding principle should be that all individuals making a significant contribution to the atlas should have either authorship or acknowledgement. With perhaps more than 100 contributors it would be impossible to offer authorship of the whole volume to everyone, so some chapter authorships must be used. This will be an edited volume, so individual chapters or species accounts can be cited.

A suggested scheme could be:

- Volume editors: the Steering Group – those that have contributed the most over the life of the project.
- A chapter for each country titled 'Mammal recording in ...' (or similar), authored by the coordinator(s) for that country and including whatever acknowledgements they wish.
- Species accounts authored by an acknowledged authority for that species, managed and edited by a member of the Steering Group/Editorial Committee. If needed, peer-reviewers can be acknowledged.

- Other chapters, such as common names in the languages of Europe, could be authored by volunteers.

There will also be the opportunity to acknowledge and thank anyone else involved in the preparation of the atlas.

As this project will continue for a number of years, it is inevitable that some individuals will leave and others join. The Steering Group must take on responsibility for the final list of editors at the time of publication.

## **Species accounts**

We should aim to have a brief species account accompanying the distribution map for each species. Discussion is needed about the content of this, but it should allow for comment on the distribution as well as any taxonomic issues. We will need to identify a suitable specialist to contribute these accounts and ensure they are prepared in good time (but after seeing the draft maps).

## **Publication options**

To gain the best distribution and sales it is probably best to publish the atlas in English, though simultaneous publication in other languages could be possible. I have begun discussions with the editor of the previous atlas and hope to be able to give some suggestions at the meeting.

## **Time schedule**

The 1<sup>st</sup> Edition of the Atlas, published in 1999, was the end of a project that began in 1988. This long timescale was needed to allow some participating countries to set up their own national atlas projects and gather data. For the 2<sup>nd</sup> edition, which will hopefully cover a much larger area, a similarly long timescale should be allowed, as some of the additional areas to be included do not, as far as I am aware, have existing mapping projects. Discussion might result in a proposed publication date of 2024-5, which would be about a quarter of a century after the 1<sup>st</sup> edition. This seems an appropriate interval.

## **Financial support and other help**

For countries that have a recent atlas and 'live' database of records, the costs involved in preparing a dataset should not be great, though some technical help may be required in translating records from particular recording systems into the system used by the European atlas in a consistent way. Greater costs are likely to arise for countries that do not have an existing database of records, as it may be necessary to extract records from the literature or from the personal records of researchers. Financial support could be sought at the national level, with the assistance of the project, or at the international level directly by the project. For this, the *Societas Europaea Mammalogica* may need to be reactivated. A sub-group will be needed to look at possible sources of financial assistance.

## **Next steps**

To be agreed at the meeting, but the formation of a Steering Group seems a necessary first step. There seems to be sufficient enthusiasm to take this idea forwards.