

European Network of Bioacoustic Collections for Taxonomy, Systematics and Conservation

At the meeting of the first European Workshop on Animal Sound Research and Libraries, hosted under Edit Workpackage 4 by the Fonoteca Zoologica (Madrid) between 27-30 September 2006, researchers working with bioacoustic collections agreed to create the "European Network of Bioacoustic Collections for Taxonomy, Systematics and Conservation"

Aim

To foster cooperation among institutions, researchers and interested amateurs to safeguard animal sound recordings and to optimise their use as a resource for research and nature conservation.

Background

The collecting of animal sound recordings is increasingly recognised as a valuable and often non-invasive tool for taxonomy, systematics and biodiversity research, because of the species-specificity of bioacoustical signals.

In common with other behavioural research, acoustic signals must be collected from living animals, preferably observed in their natural environments. Also, contrary to morphological or molecular characters, behaviours are definitively lost if not documented before species extinction. In the present frame of global climate change and biodiversity crisis, it is therefore urgent to facilitate the knowledge, preservation and accurate documentation of acoustic signals in the animal kingdom.

Many animal sound collections are scattered. They comprise sound recordings held in sound archives, in zoological institutions and by private persons. These collections are not only endangered due to the evanescence of the recording media and the signal they store, but also due to the risk that many of them will be lost and/or become unusable due to insufficient documentation and curation.

Bioacoustic signals are used by vertebrates (mainly mammals, birds, anurans and fish) and by invertebrates (mainly insects of the orders Orthoptera and Homoptera), where taxonomic knowledge is clearly unequal: mammals, birds, and to a lesser extent anurans, are relatively well-known groups with small numbers of species. In these groups, bioacoustics alone can usually be used for species identification, allowing non-invasive biodiversity monitoring. On the other hand, insects are extremely species rich and poorly known, especially in the tropics. Bioacoustical data are here primarily used to characterise the species,

complementary with other morphological and molecular features. To be fully reliable, signals recorded from insects must be associated with clearly identified voucher specimens. In general, well-identified reference pairs of acoustic signals and collection specimens are a prerequisite for the future progress of bioacoustics as an effective biodiversity monitoring tool for invertebrates.

So in addition to the sound recordings, bioacoustical data may be closely associated with voucher specimens and other materials (whether photographs, films, blood samples, or tissues of whole or parts of animals) held in private hands, in zoological museums and in other institutions. These are not necessarily housed in the same institution or even in the same country as the audio recordings. However, links between individual sound recordings and such corresponding physical specimens are currently nonexistent or insufficiently documented.

In consideration of the above, the European Network of Bioacoustic Collections for Taxonomy, Systematics and Conservation proposes the following objectives:

Objectives

1. To raise awareness of the significant scientific and heritage value of animal sound collections.
2. To call upon the scientific community and the general public to collect further sound recordings and to place these and endangered collections of animal sounds in the hands of institutions with a long-term perspective and resources to curate them.
3. To encourage the digitisation, cataloguing and preservation of private animal audio collections and collections dispersed among institutes and universities.
4. To standardise the metadata associated with bioacoustic recordings.
5. To make recommendations for standardised bioacoustic terminologies for different animal groups.
6. To create a database of expert scientists, technicians and archivists specialised in bioacoustics.
7. To give recommendations for bioacoustics equipment and software and their proper use.
8. To create a network of on-line reference animal sound banks, providing accession numbers to reference sounds.
9. To enhance the significance and reliability of acoustic data by proving procedural guidelines for documenting and properly curating the association of sound data with voucher specimens and with other available animal voucher material deposited in

- internationally recognised museum collections.
10. To make an effective liaison concerning bioacoustical collections with international taxonomic, systematic, biodiversity and conservation networks.
 11. To offer training and education in methods of bioacoustics research, in sound recording and in sound preservation, by means of summer schools or distance learning.
 12. To establish links between scientists and the interested public through websites, and to provide websites of community and software tools.
 13. To encourage the development of suitable bioacoustic tools: algorithms, software, and specialised hardware.
 14. To estimate the reliability of sound data in global biodiversity appraisals and to develop sound monitoring protocols for biodiversity conservation, especially for endangered and/or protected species.
 15. To promote the use of bioacoustic characters in taxonomy and systematics studies by compiling and annotating relevant bibliographic references, possibly locating on the web addresses for pdf files.

Adopted on 29 November 2006 by participants of the 1st European Workshop on Animal Sound Research and Libraries:

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