

SUMMARY NOTES FOR THE FIRST EUROPEAN WORKSHOP ON ANIMAL
SOUND RESEARCH AND LIBRARIES. MADRID 27 SEPT- 30 SEPT 2006.

Meeting date and place:

Wednesday, September 27 through 29

Sala de Juntas

Museo Nacional de Ciencias Naturales

José Gutiérrez Abascal 2

28006 Madrid

España

Wednesday 27, September 2006

FIRST SESSION (16:00 – 20:00):

Chairman: Rafael Márquez

Secretary: Xavier Eekhout

16:00 Welcome address by Marian Ramos and Rafael Márquez

16:30 – 18:00 Introductions

Participants introduced themselves, and those who brought PowerPoint or slide presentations about their collection presented them.

Dr. Rafael Márquez: Fonoteca Zoológica

Dr. Richard Ranft: British Library collections

Dr. Gianni Pavan: The sound archive of CIBRA

Dr. Gustav Peters: Sound archives at Koenig Museum

Dr. Klaus Riede: Sound archives at Koenig Museum

Dr. Henrik Einghoff: Sound collection at the Natural History Museum of Denmark

Dr. Laure Desutter-Grandcolas: Acoustic and databases in the Paris Museum

18:15 – 18:30 Coffee Break.

18:00 – 18:15 Presentation by Dr. Richard Ranft. Global overview of bioacoustics sound libraries.

18:30 – 20:00 Open discussion of prioritised list

A global overview of bioacoustics sound libraries (development, total extent of collections, weaknesses and strengths).

European bioacoustics sound collections — summary of “what is where.”

Functions of bioacoustics sound libraries (collection, description, access, preservation).

The discussion of these topics is presented here as incomplete, interpreted, highlights of what each participant said:

Gustav Peters: At sound libraries, many species are solely represented by a single call or song. Not even an incipient repertoire.

Richard Ranft: For the purpose of documenting a species, a single recording is nearly useless. There should be set no limit to the amount of different individuals recorded.

Henrik Enghoff: This problem of poor sampling of general biodiversity is not different from other types of collections.

Marian Ramos: What percentage of recordings is supported by associated voucher specimen?

Gustav Peters: It depends on the animal groups considered, but by and large it is less than 1%.

Klaus Riede: From DORSA experience, about 20% of voucher specimens are linked to a sound recording.

Marian Ramos: If possible, it would be very important to link voucher specimen with recordings, for future changes in taxonomy and to track biodiversity losses. If voucher specimen is not possible to collect, at the very least one should collect other specimen representations like tissues or pictures.

Rafael Márquez: In the case of frogs, the usual sequence in species study is to first catch a voucher and afterwards to make the sound recording, thus it is difficult to have audio files linked to voucher specimens.

Richard Ranft: As said before, different taxa will have very different percentages of species recorded. Undoubtedly, bird songs are better represented than any other group. Curiously, this is largely because of the work of amateur birdwatchers.

Klaus Riede: We must integrate amateurs' work into the scientific community own work, and tap into this type of contribution. We could do this perhaps by creating a website where interested people could upload information?

Rafael Márquez: Some interesting background tidbits: blind people collaborate with the University of Melbourne in sound acquisition activities. Could this be an example to follow in Spain with the ONCE (a powerful Spanish organisation of the blind)?

Richard Ranft: Another example from Australia, researchers have projects to check the distribution of frogs by giving sound recorders to school kids.

Henrik Enghoff: From EDIT analyses, we see that a significant percentage of taxonomic work is done by amateurs (yet another similarity with bioacoustics).

Maria Ramos: Currently, EDIT cannot fund research directly, but may support actions taken to raise funds from other (European and national) organizations: e.g., complementary actions taking place in Spain and elsewhere, coordinated by German researchers working for EDIT.

Zé Pedro do Amaral and Rafael Márquez: In Portugal and Spain digitising and preserving collections is a hot topic in recent calls for projects. One should take advantage, and perhaps lobby for the availability of such project topics in each of our countries.

Marian Ramos: Perhaps we could prepare a common proposal for Framework Programme 7 (EDIT)?

Rafael Márquez: This meeting is one of the first results of EDIT in Spain, and even if EDIT cannot fund research directly, we should take advantage of the opportunities it creates. We should strive to give continuity to any prospective outcome from this meeting.

Klaus Riede: Currently, EDIT's WP7 is preparing ATBI+M (All Taxa Biodiversity Inventory plus Monitoring). These events will allow some bioacoustic research, for they will allow the use of monitoring techniques. A workshop on monitoring will take place during March 2007 in Stuttgart.

Henrik Enghoff: I will further the previous idea to lobby in our countries to raise funds for this type of research.

Marian Ramos: When trying to obtain funds at a national level, if the project is brought about within EDIT that will increase the strength of the proposal.

Rafael Márquez: Again, I believe that common approaches should be discussed and perhaps planned.

Marian Ramos: I suggest that you attempt to link bioacoustics with phylogenic work.

Henrik Enghoff: Indeed, acoustic parameters are but another biological parameter, just like morphology or molecules.

Laure Desutter-Grandcolas: To make phylogenies, one needs quality recordings. There is a great need to promote quality recordings.

Gianni Pavan: On a different topic, we should also need some standardisation for the metadata used in our sound recording data.

Richard Ranft: What is the structure of ancillary data in the collection of Karl-Heinz Frommolt?

Frommolt: The information in the database has a pure format. However, the link between databases and the raw files is not easy.

Zé Pedro: Perhaps one could use a digital signature, something similar to a MD5 signature, something that would create automatically a unique identifier?

Klaus Riede: There is a need to use unique identifiers between different databases

Gianni Pavan: At my research laboratory, we replicate the information of the file header on the file name. The process of including information of the recording on the name generates a unique file name (which uses up to 96 characters). We also keep log files of the naming process. All of this is done through an automated system.

Frommolt: About digitisation parameters, we should recommend a minimum of 96 kHz, with at least 24 bits. Also choose a minimum for presentation files. Something like choosing between 44,1 and 48 kHz: in this case, 48 Hz better because it is a submultiple of 96 kHz.

Rafael Márquez: If it is an audio guide you are stuck with 44,1 kHz and 16 bits.

19:30 – 20:00 Introductions

Participants introduced themselves, and those who brought PowerPoint or slide presentations about their collection presented them. Last introduction.

Dr. Karl-Heinz Frommolt: Tierstimmenarchiv Humboldt-Universität zu Berlin

Thursday 28, September 2006

SECOND SESSION (9:00 – 13:00)

Chairman: Richard Ranft

Secretary: Paulo Marques

9:00 – 9:30 Presentation by Gustav Peters:

The role of animal sounds in taxonomy and systematics of certain animal groups, both vertebrates and invertebrates. An interface of zoological museums and sound archives that requires urgent action and rules.

9:30 – 10:00 Presentation by Laure Desutter-Grandcolas:

A specimen-based natural history database: a crucial tool to study the evolution of biodiversity.

10:00 – 11:00 Open discussion of prioritised list.

The discussion of these topics is presented here as incomplete, interpreted, highlights of what each participant said:

Purpose: how are the collections used?

What do users of sound collections want — what kind of depth of coverage, breadth, recording quality, or metadata quality?

Riede stated the importance of the association of the recordings with the specimens, metadata, and natural history data.

This was followed by a general discussion of the quality of the records, taxonomic information, and their management by ASA (Animal Sound Archives).

Márquez proposed a list of web sites that may help recordists and ASA to check and update their taxonomic information. Einghoff suggested the use of a web based taxonomic project. Reide suggested that Zoobank could also be used.

Reide proposed the creation of a Phonobank for the register of recordings used in the description of new species. Ramos and Einghoff restated the need of that information about the specimen to be linked to voucher specimens and to be deposited in proper institutions; they also stated the importance of learning with the mistakes made with the GenBank venture.

Márquez proposed the publication of a list of standard settings and information for starters in bioacoustics.

Reide proposed a domain in bioacoustics to unify all European ASA and to provide information to prospective nature sound recordists.

In addition to that information, do Amaral proposed the publication of a list of software available for sound studies.

Frommolt proposed a list of recommendations for sound analysis like sound parameters and visual sound representation.

How are collections organised? Cataloguing, accessioning, data structuring, storage, deposit agreements.

Riede suggested the inclusion in the recommendation list of information about ultrasound sample rate and transformations.

Ranft proposed a list of minimal level of information (metadata) for a sound recording to be considered as a valid archive record.

Pavan suggested the inclusion of metadata information concerning the environment that might affect sound structure.

Peters suggested the inclusion of metadata concerning the record level changes and the movement and distance of the calling individual.

Frommolt suggested the inclusion of a recommendation about sound card sampling rate and other about not changing the sound record level while recording.

There was a general recommendation to not increase the gaining while recording.

Proposed actions:

- To create a list of web sites with taxonomic information
- To start a Phonobank — a taxonomic-quality sound repository
- To list the standard sound recording settings and information for prospective recordists
- To create a WWW domain in bioacoustics to unify European ASA efforts
- To list the software available for sound studies
- To publish a list of recommendations for sound analysis and visual sound representation

11:00 – 11:30 Administration, Coffee and Bank Break.

11:30 – 13:00 Open discussion of prioritised list.

13:00 – 15:00 Lunch Break.

THIRD SESSION (15:00 – 19:00)

Chairwoman: Anna Omedes

Secretaries: Mercedes Pérez and Laura González

15:00 – 15:30 Presentation by Richard Ranft:

Preservation, and international *standards* for catalogue information, and general technical principles of audio digitisation.

15:30 – 16:00 Presentation by Karl-Heinz Frommolt:

Organization of databases for scientific cooperation in the fields of bioacoustics.

15:30 – 16:00 Open discussion of prioritised list.

The discussion of these topics is presented here as incomplete, interpreted, highlights of what each participant said:

- How are collections organised? Cataloguing, accessioning, data structuring, storage, deposit agreements.
- How are collections preserved in perpetuity? Fundamentals technical principles of archiving sounds (preserve full bandwidth, backups, duplicate copies, security, disaster planning, etc.).
- Access to collections and their catalogues (especially on-line, but also on-site)

Henrik Einghoff: We have a language problem. What language should we use on our web page?

Karl-Heinz Frommolt: As much as possible, the information should be in English.

Gustav Peters: Another problem is an understandable terminology for different sound types in a repertoire. For example, in mammals there are sounds without names, and there are different names used for the same type of sounds.

Gustav Peters: This is a tough problem; a problem that cannot be solved.

Anna Omedes: Agree, but does not seem impossible to solve. Try to get more detail about the sound. Manage to do the first step.

Karl-Heinz Frommolt: Or exchange information.

Mario Penna: On a different note, what about registers of abiotic sounds?

Karl-Heinz Frommolt: We have abiotic sounds included in our collection.

Richard Ranft: We should encourage ambient sound recording. A few sounds may also be communication sounds.

Rafael Márquez: On a technical note, one should consider distortion of microphones.

Gianni Pavan: For those types of recordings, one may use modal microphone: 28 KHz. Perhaps use an omnidirectional microphone. However, they are very expensive.

Anna Omedes: What type of user access should we give to our collections? Why not put the sounds online for everybody to hear them?

Rafael Márquez: Currently, our collection is only for scientific use.

Richard Ranft: At the British Library, the majority of sounds is available, but other sounds are restricted. The author of the recordings has the option to choose how available the sounds will be.

Klaus Riede: We are always afraid of misuse for commercial purposes. We consider that the biodiversity information is part of the Human heritage. However, one should have in place a system to give due scientific credit to the sound authors.

Rafael Márquez: I recognise that is very useful to provide recordings, but at the same time we must protect some recordings. We have many sounds in a collection closed to the commercial world. We also have to avoid copyright problems.

Karl-Heinz Frommolt: There are no such problems in distributing for scientific use. The same does not apply to the commercial use. We should have pure quality recordings. For us, to make readily available noisy sounds, does not give a good reputation to the sound library.

Gustav Peters: There is a serious problem when people who use the sound do not mention the source or do not follow the rules of the sound library.

Anna Omedes: Similarly, sometimes we have big problems with lent specimens. Perhaps we could create a blacklist for museums and researchers that have treated badly the specimens. One should be particularly careful when one deals with specimens for which there are no possible replacement.

Klaus Riede: By and large, I believe that all sounds should be accessible for research. However, we may exclude some recordings with due cause.

Richard Ranft: Yes, like when there is the risk of people using the sounds for commercial purposes.

16:00 – 17:00 Presentation by Alberto González Talaván:
GBIF and animal sound collections.

17:00 – 17:30 Coffee Break.

17:30 – 19:00 Open discussion of prioritised list.

The discussion of these topics is presented here as incomplete, interpreted, highlights of what each participant said:

- Creation of a network of sound libraries. Collaboration between libraries: sharing methodologies, sharing audio samples, sharing metadata, and sharing engineering skills. How to create a unified web interface to search across all libraries (perhaps GBIF)? Setting up a suitable European archivist's mailing list, or wiki.
- How to raise the status of these libraries among users, decision-makers, sister organisations?
- How to lobby for and secure funding (EDIT, audio technology companies, and others)?

Marian Ramos: She suggested the creation of a network of experts in bioacoustics.

Henrik Eingham: EDIT may support the idea.

Anna Omedes: How?

Marian Ramos: Right now, research funding through EDIT is impossible. However, it will fund the creation of networks of excellence. Or the creation of organisations: libraries and experts in bioacoustics (bioacoustics from a technological point of view). EDIT encourages the creation of these kinds of networks.

Henrik Eingham: Such bioacoustics network must be an open network. There are many institutions that are not members of EDIT. Therefore, it is necessary the creation of this open network, so that it may include all of these outside institutions.

Klaus Riede: Amateur communities, public interest, EDIT, and eventually society. All of these increase the durability of such network. We could do a workshop on monitoring sounds properly. One could include sound monitoring in Work Package 7.

Marian Ramos: She proposed the organization of training courses. With the bioacoustics network behind organising or supporting these courses.

Gianni Pavan: Our courses are just for education on how to research, but they can be easily extended to be used for monitoring purposes. In short, we can use acoustics to do manifold educational activities. For example: currently, there are courses of marine mammals that may include sound recordings (e.g., sonar activities, etc.). This group of experts should encourage through education, training, and dissemination of information the use of acoustic knowledge resources. However, there are not enough experts to do all the jobs.

Henrik Eingham: Many ethical problems involved with collecting animal may be solved by choosing carefully the subjects. For example, we may monitor insects and catch them.

Anna Omedes: How could we start the network?

Richard Ranft: And what type of network?

Karl-Heinz Frommolt: We could create the network at different levels. Scientific information in GBIF; interface ASA-GBIF. We could have experts identify and comment the records of special and rare taxa. However, we need experts. And we need institutional support. Institution support statements are very important.

Henrik Eingham: He suggested the creation of an international society, open to everybody, to manage an exchange of truly global information. Currently, an international bioacoustics association already exists. Among other things, this association organises conferences.

Richard Ranft: All of these ideas that we are discussing here have been discussed before. There will be an international meeting in Pavia (organised by Gianni organizes): September 2007.

Gianni Pavan: However, for the scope of what we were discussing previously, it may be necessary to organise something more formal.

Anna Omedes: Do we have more researchers than collections?

Richard Ranft: Essentially, we need to share ideas. We need more informal meetings.

Gianni Pavan: There is always one big problem: funds.

Gustav Peters: I should note that people who work on bioacoustics are very heterogeneous, and often work just temporarily and then vanish from this research field. It will not be easy to create such an organization. We should create a way to explain to newcomers about sound recording and analysis.

Klaus Riede: We should coordinate this group through Rafael and explore different options, and see if somebody can setup the said infrastructure for coordination. How big should we make this? He proposed that Rafael Márquez organises an e-mail list to continue this exchange of ideas that we are starting here.

José Pedro do Amaral: One way to do so would be to create a wiki. To create a wiki is very easy.

Marian Ramos: We will explore whether the EDIT web page may provide all these services.

Gianni Pavan: Two requirements for the portal: to set up a list of institutions and to set up a list of experts.

Laure Desutter-Grandcolas: It would be very interesting to have a place where to put publications about bioacoustics.

Marian Ramos: A place on the Internet?

Gianni Pavan: We are working on a database of PDFs on bioacoustics. And database web pages about techniques and other sound-related topics. These pages are classified by topics, species, etc. The database includes proceedings and papers in PDF format. The problem is how to share them due to copyright restrictions. We could provide the data base but not the papers.

Karl-Heinz Frommolt: We should choose a domain. Something that could be easily identified.

Gianni Pavan: Suggested bioacoustics.eu, bioacousticnetwork.eu

Klaus Riede: What about the Phonobank idea? I propose Phonobank as an initiative to present to EU. Propose also the topics of phylogenetic research and infrastructure. These topics may be covered by the different work packages.

Anna Omedes: Is there the possibility of using GBIF for sound collections?

Richard Ranft: He did not know much about GBIF, but he was very interested.

Rafael Márquez: Could GBIF be an avenue for funding for an initiative as Phonobank?

Alberto González: It depends on the information you are willing to share. GBIF Secretariat funds digitization efforts with its "seed money" projects, but now they are focused on thematic areas, such as the global amphibian assessment..

Rafael Márquez: Is the project national or international?

Alberto González: International. If you prepare a project on an international level, related to one of the prioritized areas you may succeed. In the last call, for 2005-2006, up to 100.000USD could be delivered to a project.

Klaus Riede: Does the Spanish node have any project?

Alberto González: The Spanish node of GBIF does not have any funding programme for projects by its own. Funds to digitalize Spanish collections come from the Ministry of Education and Science, through its "Ayudas Complementarias" grants.

Marian Ramos: Bioacoustics.net and bioacoustics.org are available, but not free; they cost \$700.

Rafael Márquez: Name for the portal: Phonobank?

Karl-Heinz Frommolt: Not associated with animals. Not a good idea.

Klaus Riede: Bioacoustics is not bad.

José Manuel Padial: Which institution will be the head of the website?

Karl-Heinz Frommolt: The most important thing is the domain.

Rafael Márquez: He suggested Bioacoustics.net.

Marian Ramos: We could get also .org (it is the same price).

Klaus Riede: To generate the web space contents should be the next step.

Rafael Márquez: Could it be possible to do it from within one of the Work Packages of EDIT?

Klaus Riede: We could start offering some bioacoustics tools.

Friedhelm Schwenker: They have some tools but they are for students.

José Pedro do Amaral: He suggests to organise intensive courses for undergraduate students, to train them in the different aspects of sound studies, to train a new generation of sound biologists. These courses might be associated with a university or promoted directly and autonomously by this group. Perhaps also online courses. These courses could have different curricular outcomes, and be courses that do not yield an academic diploma or a degree, just a certificate.

Gustav Peters: Something like summer school?

José Pedro do Amaral: Yes, and applied courses, with fieldwork.

Marian Ramos: EDITS's Work Package 8 could be involved in that.

Gustav Peters: Offering these courses must have some perspective.

Klaus Riede: Students would pay for those courses.

Gianni Pavan: They have summer activities for students with marine mammals: watching and recording.

Klaus Riede: He suggested to include bat sounds.

José Pedro do Amaral: Restated that the courses could function at different levels, with different types of evaluation.

Richard Ranft: They already have similar courses. Small groups. Next year internships will start. Funding from UNESCO.

Gianni Pavan: He suggests to include summer workshops, and not only for students but also for amateurs. Organize a permanent structure. And to involve the local administration. They could provide the place for activities. They need money for teachers and equipment. There is something similar in the UK but it is organised by a private company. It is quite expensive.

Emmanuel Gilissen: Marine biology workshop.

Gianni Pavan: There are requests for this type of courses.

Rafael Márquez: It all comes back to the creation of the network.

Anna Omedes: Objectives?

Rafael Márquez: Interfaces with EU. Way of requests.

Henrik Einghoff: To make it easier for finding expertise.

Gustav Peters: This group is very small; it is a limited sample of the researchers who may call themselves sound biologists. We are not in the position of saying, "We are the experts", because there are many more.

Klaus Riede: Then, extend our network. Most of the larger collections are represented here (with the exception of Russian and American collections).

Marian Ramos: And also include Zoological Institute. The network should be open to other members. It would be a legal non-profit organization.

Rafael Márquez: Structured at the level of the scientific community and of the collections (every one that develop some kind of research in bioacoustics).

Klaus Riede: GBIF is a good example.

Marian Ramos: CETAF (European taxonomy facilities. 26 institutions in Europe). Choose one institution leader of the network.

Richard Ranft: He suggests that a small group of volunteers make a list with the objectives.

Marian Ramos: Forum for changing information about changes in taxonomy.

20:30 (approx.) Official workshop dinner.

Friday 29, September 2006

FOURTH SESSION (9:20 – 13:00)

Chairman: Gustav Peters

Secretary: Paulo Marques

9:00 – 9:30 Presentation by Gianni Pavan:
Experiments with first digital systems at CIBRA.

9:30 – 10:00 Presentation by Klaus Riede:
Virtual phonotheek in DORSA (Digital Orthoptera Specimen Access – www.dorsa.de).

10:30 – 11:00 Presentation by Friedhelm Schwenker:
DORSA song classification toolbox.

11:00 – 11:30 Coffee Break.

11:45 – 12:00 Presentation by Rafael Márquez:
Other sound monitoring efforts: frogloggers.

12:00 – 12:30 Presentation by Marian Ramos:
EDIT, WP4: Coordinating Research.

12:45 – 13:00 Presentation by Henrik Einghoff:
EDIT, WP2: Integrating and Reshaping the Experts and Expertise Basis

13:00 – 15:00 Lunch Break

FIFTH SESSION (15:00 – 18:00)

Chairman: José Pedro do Amaral

Secretary: José Manuel Padial

15:00 – 18:00 Open discussion of prioritised list.

The discussion of these topics is presented here as incomplete, interpreted, highlights of what each participant said:

- Copyrights and wrongs.

The free on-line access to sound recordings deposited in collections is a complex issue. Although the risks are considerable, there is a general trend toward open access, but with some restrictions, use of code for each downloaded sound, obligatory credit of the source. It is suggested to perform a tracking program for the uses of downloaded sounds.

- Cooperation and links with research institutes, and with repositories of other taxonomic specimens.

It is considered pivotal to secure correct connection between data of specimens in collections and their corresponding voucher specimens. The main problem is that old sound recordings usually lack a correct reference to a concrete voucher specimen. Moreover, some institutions devoted to sound collections do not care about the zoological specimens. The inclusion of data about recordings is proposed to be included in the labels of new specimens recorded. Furthermore, it is necessary to encourage institutions to maintain a reliable connection between specimens and sounds. The network of experts has to write a letter with the recommendations.

New described species with description of the vocalization should include a unique reference number for the sound deposited in the sound collection. And the sound collection should have information about the location and collection number of the zoological specimen.

- Support for collectors of audio specimens, by training provision and by loan of equipment.

The British library has broad experience in loaning of technical equipment for sound recordings. They provide material to individual and institutions with the condition of incorporation of new sounds to the library (this procedure is not legal in Germany without an individual contract). Nevertheless, the success of is very low. British Petroleum (BP) has funded this initiative.

It is recommended to apply for funding to buy sound recording equipment.

- The role of established permanent archives vs. individual's online web databases (risk of data loss without a reliable long-term infrastructure).

This is a big issue. Large institutional collections are preferred, because small personal collections are more likely to disappear. There are some efforts to exchange records and to convince owner to deposit original recordings in institutional collections. Nevertheless, there is also the risk that some official sound collections might disappear.

It is recommended to deposit a backup of the sounds in other collections.

Some mass media outlets may become partners and provide facilities to digitise and store sounds.

The lack of funding for enough personnel to digitise and store sounds is a big issue. Some collections are not able to digitise promptly all new sounds they receive.

- Sound monitoring and animal sound collections. Automated sound identification, taxon-specific algorithms?

Sound monitoring may be an important tool for conservation biology and management. The collections should provide templates for identifications and free tools to identify sounds. There are already some initiatives in this sense.

It is recommended to elaborate a protocol for animal sound monitoring that may be incorporated to such web pages as Conservation International.

- Standard for taxon-specific sound analysis parameters and nomenclature.

There is a large variability in sound terminology among specialist on different groups. It is necessary to promote some consensus in terms and methods. Although there was an initiative to standardize terms, many kinds of sounds lack any term (mainly in mammals). Nevertheless, in groups such as the anurans and some insects the terminology is more or less standard.

The group of experts should encourage the formal definition of terms when used for first time in technical literature and the standardization of terms when possible.

- Database of standard sounds for automated comparisons.

The complexity, differences, and convergences among the huge amount of taxonomic groups make any kind of initiative of this type very difficult. The interspecific variation is sometimes so high that the use of a single template is not enough. Hence, the archives should register as much intraspecific variation as possible. This initiative may be possible for some groups as anurans and grasshoppers. EDIT may support such an initiative.

After some real-time attempts to secure the domain name during the meeting, bioacoustic.net and .org are finally elected as the domains for the network of experts.

The goals of an European Network of Experts were defined and a letter of intent was collaboratively written and distributed at the end of the meeting for further revision. The working text of the letter was the following:

At the meeting of the first European workshop on animal sound research and libraries, Edit Workpackage 4, hosted by the Fonoteca Zoologica, Madrid 27-30 September 2006, researchers working with bioacoustics collections agreed to create the “European Network of Bioacoustics Collections for Taxonomy and Conservation”

Aim

To foster cooperation among institutions and researchers to safeguard bioacoustics collections and optimise their use as resource for research.

Background

Bioacoustics is increasingly recognized as a valuable tool for taxonomy and biodiversity research.

Current collections are fragmented and endangered due to the evanescence of the media (tapes) and the signal they store. The collections comprise both sound recordings held in sound archives and zoological institutions. However, links between sound recordings and

the recorded animals are nonexistent or insufficiently documented. Therefore, this network aims to the following objectives:

Objectives

1. To raise awareness of the significant scientific and heritage value of collections.
2. To promote the digitisation of bioacoustics collections
3. Encourage the archiving of private collections
4. Standardize metadata
5. Recommendations for terminology
6. Recommendations for equipment and software
7. Create a database of experts
8. Compile a reference animal sound bank, providing accession numbers to reference sounds and whenever possible voucher specimens
9. To provide the best link between multimedia and voucher specimens
10. Liaise with international taxonomic and biodiversity and conservation networks
11. Training and education
12. Establish links between scientist and interested public through websites, providing community and software tools.
13. Develop bioacoustics tools
14. Develop sound monitoring protocols for biodiversity conservation

Saturday 30, September 2006

Field trip to the Sierra de Gredos

Meeting point: MNCN parking lot.

Departure time 8:00

Estimated return time 23:00

We visited a mountain area 2-hrs away from Madrid. Drinking water and a non-vegetarian lunch was provided. Later, we gathered at a local restaurant in Gredos for an early and plentiful dinner (20:00) before returning to Madrid.