SYNTHESYS ADVANCED TRAINING IN COLLECTIONS MANAGEMENT

The aim of SYNTHESYS II is to improve collections management, to enhance accessibility and to conserve the unique value of European natural history collections.

Network Activity 2: Collections Management provides resources to help raise standards e.g. delivering performance indicators and collection management policies that enable infrastructures to maximize the use of their existing resources and to avoid duplication of effort within Europe.

Network Activity 3: Information networks removes barriers to the electronic access and sharing of collections information by providing the state-of-the-art tools for specialist users and improves the quality of content supplied by the global scientific community through implementation of best practice and the setting of global standards.

In the framework of SYNTHESYS, 6 training modules were organized in 5 different countries (http://synthesys.cybertaxonomy.africamuseum.be/) from 2011-2013. These modules were attended by 109 participants from 21 countries and involved the expertise of 41 trainers, from 9 countries.

Figure: Country of origin of participants (right-angled hatch) and trainers (left-angled hatch) for the SYNTHESYS Advanced Training in Collections Managament. European countries shown in detail above. Global participation illustrated by the figure below.

MODULE 0: "TRAIN-THE-TRAINER": METHODS IN COLLECTIONS MANAGEMENT TRAINING (NA2)
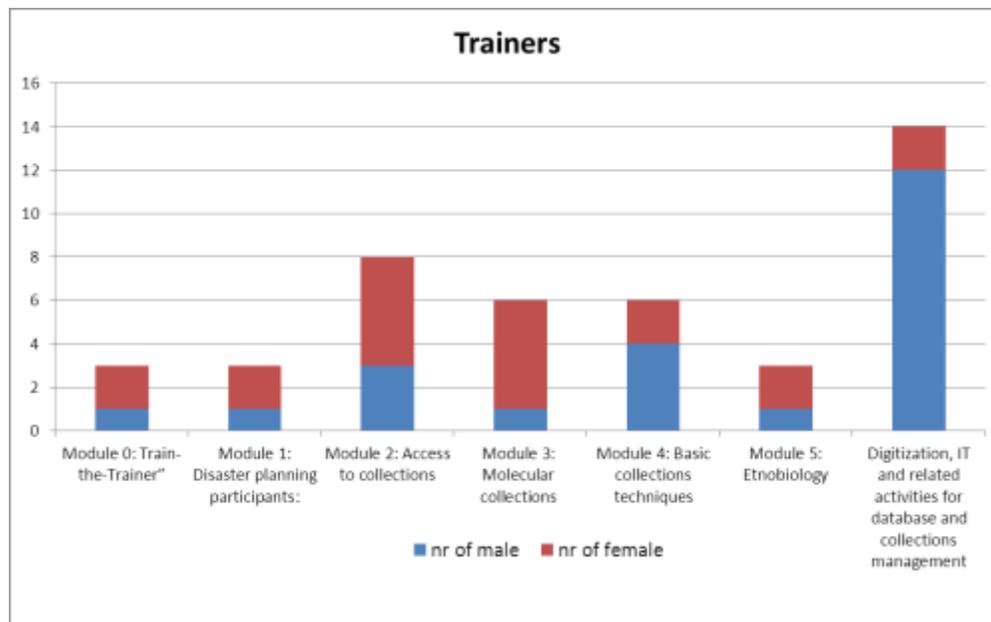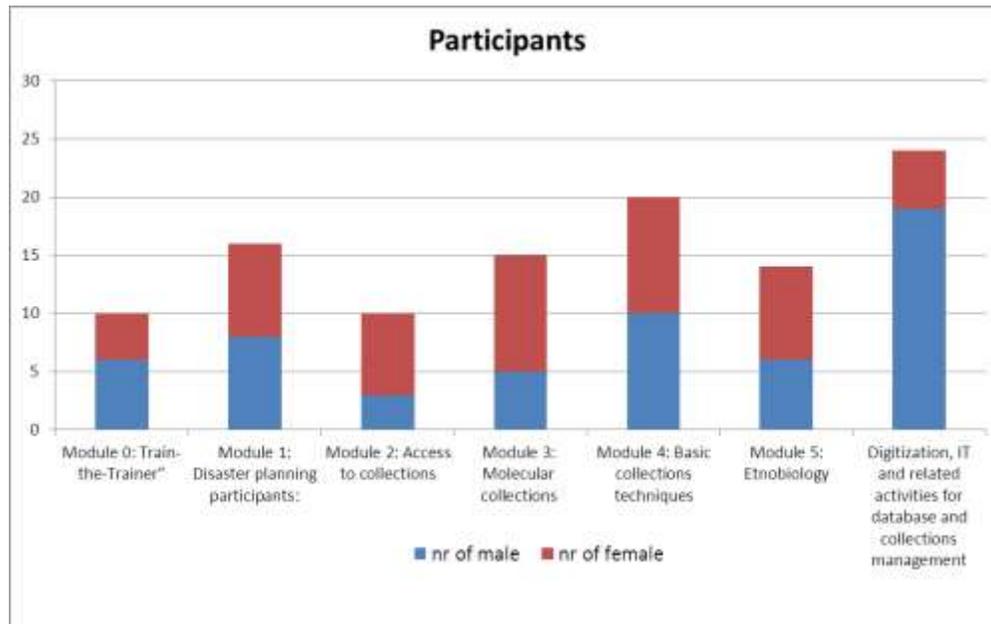**MODULE 1: EFFECTIVE COLLECTIONS EMERGENCY PLANNING AND SALVAGE (NA2)**
MODULE NA3: INFORMATION NETWORKS (DIGITIZATION, IT AND RELATED ACTIVITIES FOR DATABASE AND COLLECTIONS MANAGEMENT) (NA3)
MODULE 2: ACCESS TO COLLECTIONS (NA2)
MODULE 3: MOLECULAR COLLECTIONS (NA2)
MODULE 4: BASIC COLLECTIONS TECHNIQUES (NA2)
MODULE 5: ETHNOBIOLOGY (NA2)

MODULE 0: "TRAIN-THE-TRAINER": METHODS IN COLLECTIONS MANAGEMENT TRAINING

Location: Natural History Museum (London, UK)

Duration and date: Lunch-to-lunch meeting, 24-25 October 2011

Description of the course:

This module was aimed primarily at those who have attended the 2007-2009 SYNTHESYS courses in collections management and wished to share knowledge of best practice gained in their own institutions and in their own language. The module provided a framework of techniques and information to help trained collections staff transfer their knowledge and experience in a consistent and effective way. It addressed:

- The key learning points and knowledge to include in a collections management course
- How to find and use comprehensive teaching materials
- Training methods and techniques to maximize learning

The overarching principle is that those trained return to their institutions and hold their own courses, workshops and seminars to spread the knowledge and culture of best practice.

Specific course objectives

By the end of the module participants had:

- Explored and identified learning needs
- Identified and practiced the range of training support material available
- Identified the appropriate group working techniques and exercises to suit the content of their courses
- Applied and practiced methods for managing group behavior
- Acquired an understanding of the core principles for making effective presentations

(Photos by Caroline Van Poucke and Patricia Mergen, copyright RMCA)

MODULE 1: EFFECTIVE COLLECTIONS EMERGENCY PLANNING AND SALVAGE

Location: Royal Museum for Central Africa, Tervuren (Belgium)
Duration and date: Lunch-to-lunch meeting, 22-23 November 2011
Description of the course:

This seminar was aimed at anyone wanting to write a collections emergency plan. It also functioned well as an introduction to disaster preparedness and covered the essential content required to put together a practical working document. It provided additional guidance to those that already have a plan to help review their documents to ensure inclusion of all essential and practical information.

- Day 1 provided an overview of past disasters and covered the basics of what information you need to include in a plan and provided suggestions for practical training sessions within attendees' home institutions.
- Day 2 covered some practical salvage techniques for dealing with damaged specimens.

(Photo by Chadwick H.D., 1906)

MODULE 2: ACCESS TO COLLECTIONS

Location: Natural History Museum, Budapest (Hungary)
Duration and date: Lunch-to-lunch meeting, **26-27 April 2012**
Description of the course:

The aim of the course was to provide participants with a framework of the different aspects of access to collections, a toolkit for further development of internal policies and guidelines regarding access to collections at each home museum, contacts with colleagues at other European museums, a mutual exchange of experiences.

Day 1 focused on physical (precautionary measures, insurance, safety etc.) and digital access to collections. Different aspects of physical access were covered (public and scientific visitors, loan, exhibitions) with demonstration from the Anthropology Department (HNHM). Digital access was demonstrated based on different use cases: photographic collections, digitization of anthropological material (3D images of skull of a great king of Hungary (St. László) and of a cave-man), digitized paleopathologic signs (HNHM). A presentation of an open-source collection management system was provided by specialists from NRM, Stockholm: an introduction to the DINA project, the Specify 6 software, the Swedish Malaise Trap Project web client.

Day 2 covered topics related to immaterial rights, legal aspects and management. Different aspects that should be covered in museums' policies on access to the collections were discussed and after an introduction, the participants discussed further in smaller groups, using examples from their own museums.

(Photo by China Williams)

MODULE 3: MOLECULAR COLLECTIONS

LOCATION: Meeting Room of the National Museum of Natural Sciences, CSIC, Madrid (Spain)
DURATION AND DATE: Lunch-to-lunch meeting, 24-25 July 2012
DESCRIPTION OF THE COURSE:

Natural History Institutions around Europe are world centers of scientific excellence in taxonomy and biodiversity with hundreds of millions of specimens in their reference collections. Every year this figure increases by tens of thousands and most of that increase is linked to molecular research. In many cases this research produces focused collections, which tend to be in dispersed locations around the institutions, hence being mostly inaccessible, because they are only known by the researchers or research teams participating in their collection. But once the research projects are finalized, however, the value of the samples both from an economical and biodiversity point of view is maintained, so it is still necessary to properly curate them. The correct preservation of material derived from biological specimens and their associated data are essential to ensure compatibility, reproducibility, and knowledge extension in all areas of biological research. In this way, molecular collections can provide long-term storage and access of well documented DNA samples and voucher specimens. They also link DNA samples to their vouchers (specimen and information) and to molecular data stored in public sequence databases facilitating taxonomic verification of molecularly analyzed organisms. The types of specimens that can normally be found in molecular collections are:

• Dried or lyophilized tissues or small specimens
• Tissues preserved in spirit (alcohol or buffers for molecular use)
• Frozen tissues (freezers and liquid nitrogen)
• DNA in buffers, water or lyophilized (frozen or room temperature)

This training course was aimed at any person who wants to begin organizing a collection of tissues and DNA to curate the products of molecular research preserved at national history institutions, as well as for persons who already have began a collection but wish to obtain additional information on management standards and protocols.

MODULE 4: BASIC COLLECTIONS TECHNIQUES

LOCATION: Museum fuer Naturkunde Berlin, Germany (http://www.naturkundemuseum-berlin.de)
DURATION AND DATE: Three-days lunch-to-lunch meeting, 28-30 November 2012.
DESCRIPTION OF THE TRAINING:

The training "basic collections techniques" was an introductory module on care and management of zoological collections aimed at persons with limited experience in collection work or those who wish to update their knowledge in this field. The training consisted of a course on conservation procedures (half day), on basic techniques in collection care (including aspects of dry and wet collections with their specific requirements, full day) and a course on data documentation and labeling (half day). The training provided a brief insight into the most essential topics of basic collection care and management, including aspects of preservation and preventive conservation.

TOPICS COVERED:

Day one (Conservation procedures): basic issues in preventive conservation, climate control, integrated pest management, materials, testing, ageing, risk management and other aspects of standard conservation procedures.

Day two (Basic techniques in collection care): A. Dry collections: care of entomological collections, care of skins and bones, conservation issues in dry collections B. wet collections, properties of ethanol, denaturing agents, jars, lids, issue of ph in wet collections.

Day three (Data documentation and labelling): handling of field data, registration, data cleaning, database, labels in wet collections, labels in dry collections.

(photo by Kai Schütte)

UPCOMING EVENT - MODULE 5: CURATION OF ETHNOBIOLOGY COLLECTIONS
LOCATION: Royal Botanic Gardens, Kew, UK
DURATION AND DATE: Lunch-to-lunch meeting, 24-25/06/2013
SHORT DESCRIPTION OF THE TRAINING: Many natural history museums contain artifacts and raw materials demonstrating use of natural materials by humans. These present special challenges to curators in storage, cataloguing, ethics and law, funding, and deterioration and conservation. This short course tackles these questions through modern museum methods, and the experience of the Economic Botany Collection at the Royal Botanic Gardens of Kew (UK). The course is relevant to both plant and animal collections.

(photo by RMCA)

MODULE NA3: INFORMATION NETWORKS (DIGITIZATION, IT AND RELATED ACTIVITIES FOR DATABASE AND COLLECTIONS MANAGEMENT)

For the NA3 module, it was deemed more efficient to hold a longer module involving a larger group of participants (as opposed to splitting over multiple shorter modules). The reasoning was (1) staff involved in Information network management are generally responsible for the entirety of tasks presented during the module; (2) delivery of didactic information could be coupled to networking (as a large group participated) and (3) continued online networking after the course improved sustainability.

Indeed, staff involved in IT-related tasks will apply their knowledge and skills across multiple types of collections (alcohol, molecular, dry etc) and taxonomic groups (e.g. a database for entomology collections requires the same skill as that for an ichtyological collection)

Location: Royal Museum for Central Africa (Tervuren, Belgium), Building E (CODA-CERVA)
Duration and date: 6-8 March 2012
Description of the course:
The course was divided in two main parts: (1) Digital management of collections (i.e. for collection management software and associated best practices) and (2) IT applications (GIS, predictive distribution modeling, 3D imaging, x-Ray, Data mining, data capture etc), with specific attention for the following topics:

1. Automated data collection from digital images:
       Automatic processing (segmentation) of digital images
       Automatic metadata capture
2. Crowd-sourcing metadata enrichment of digital images:
       Research into crowdsourcing methodologies for NH collections
       Development of website to allow crowdsourcing data capture
3. Access and management of digital collections:
       Open Access to captured data
       Collaboration with NA2 on digital collections management
Scientific interpretation of data and interaction with modeling tools

(Photo by Patricia Mergen)

FEEDBACK

A graphical comparison of the feedback received from participants is given in the figures below. A comment that was heard frequently from respondents was the wish to have a longer course with the opportunity for more discussion, in depth study of the issues tackled and practical exercises. This illustrates the appreciation for the training and suggests follow-up courses would have equal or increased interest. The interaction that the courses provided between collection managers of different museums throughout Europe was also much appreciated.

Note: no feedback available for Module 0; module 5 still to take place

GENERAL CONCLUSIONS AND RECOMMENDATIONS:

- ✓ Accompanying material is important: abstract of the course, printed version of presentation, short description with main points of attention, manual for the practical sessions and technical information package etc.

- ✓ Don't make presentations too long, 1-1.5 hours is maximum. Long presentations could be split in 2 (theoretical and practical) with coffee pause in between.

- ✓ Don't go too much in details, focus on the main topic of the training.

- ✓ Practical sessions should be well-prepared, technical or software problems cause delays and chaos.

- ✓ If you want to have good feedback and active participation of people in round tables and Q&A sessions, inform them in advance and ask them to prepare short talks about their work. Some people do not like to improvise!
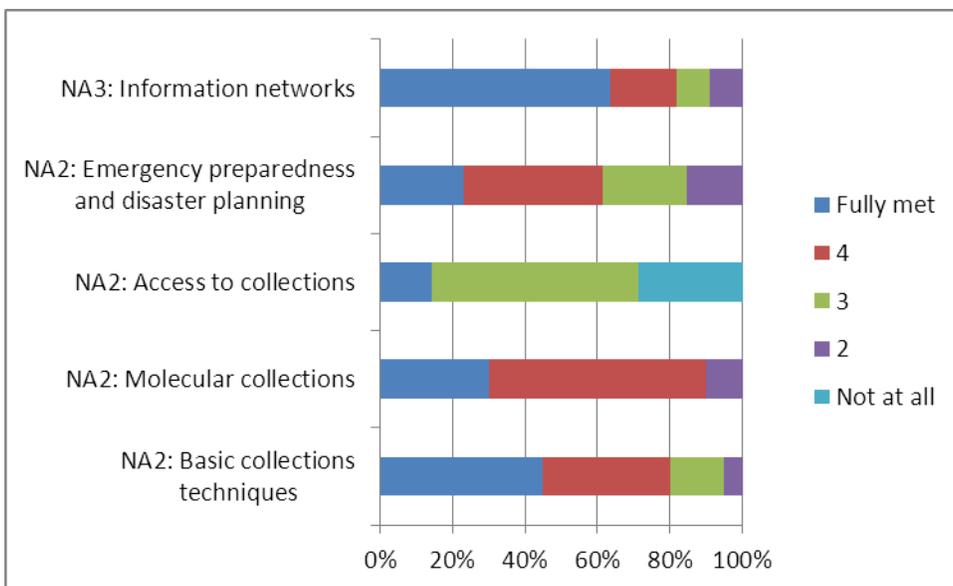
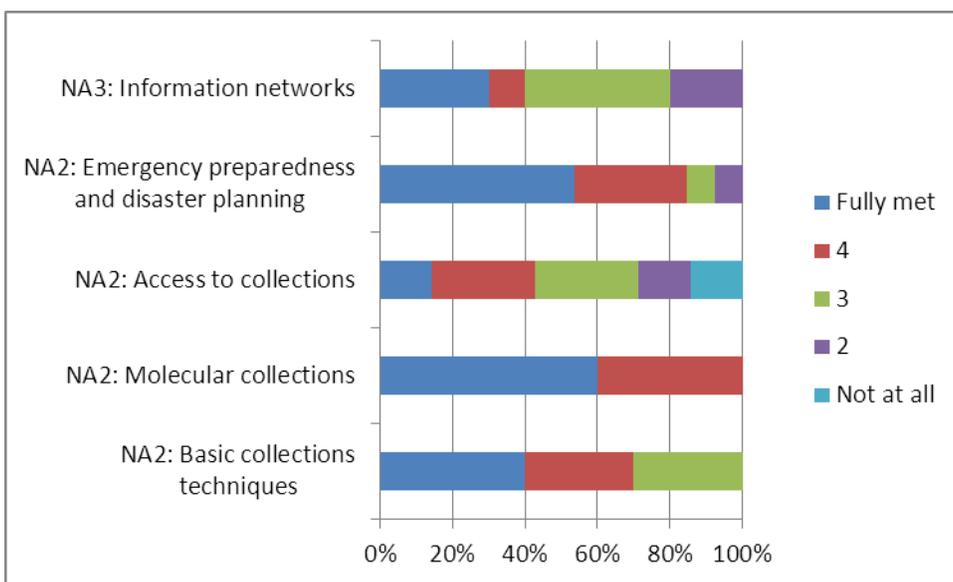This course provided a comprehensive overview of the topic
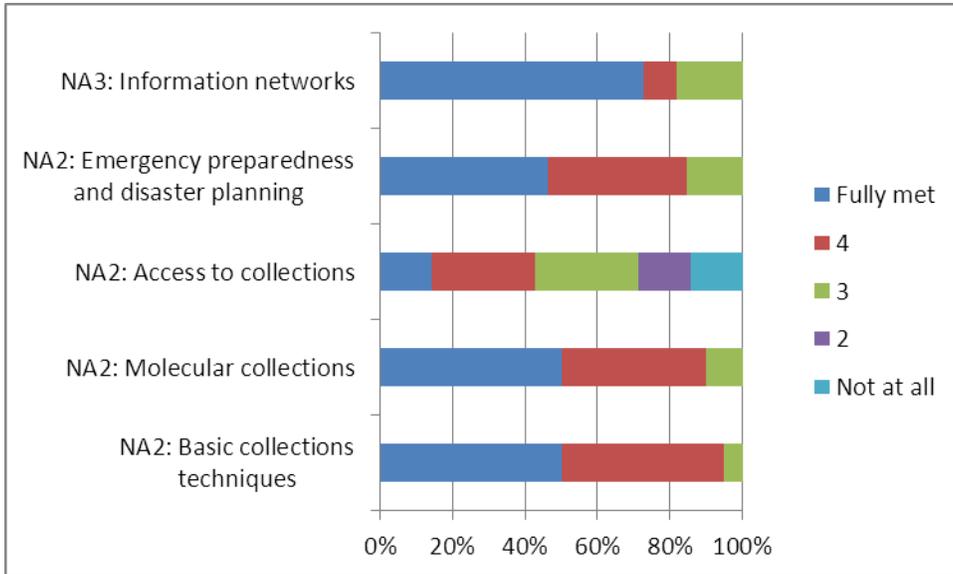
Key elements of the topic were captured and reflected in the state of the art
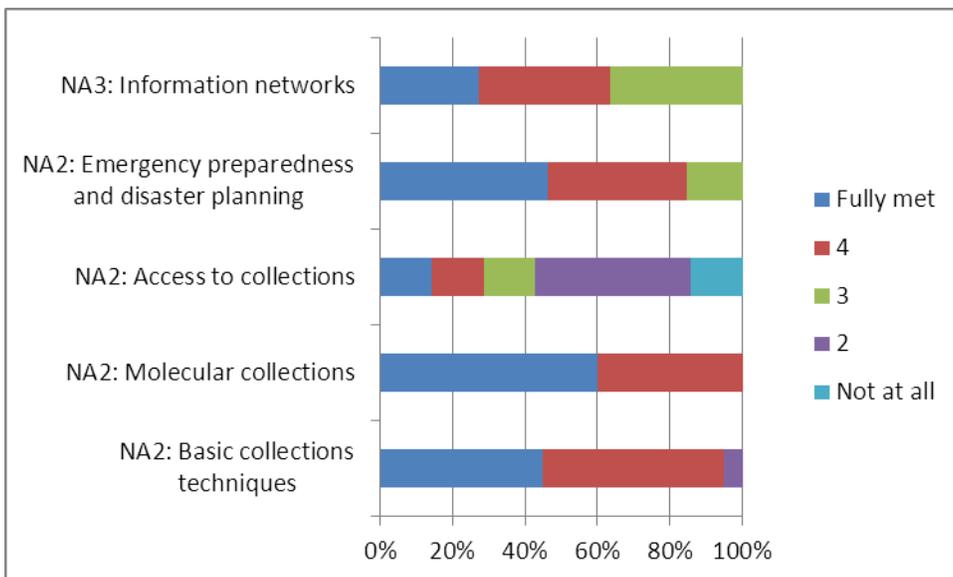
Materials and demonstrations supported the theoretical parts well

The course explored and identified learning needs

How highly did you rate trainers' skills and abilities to support your learning