

Czech EPBRS Meeting
World Biodiversity and the European Taxonomy
Strategies in taxonomy: research in a changing world

Belgium

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1-Taxonomic Information: Strategy and Methods

Inventory and Identification: “What is it, and how does it fit among its relatives?”

1.1 Does your country use taxonomy-based tools for biodiversity assessments and policy making? What are these tools?

This concerns (a) Red lists, (b) list of protected species of plants and animals, and (c) list of harmful invasive species (in preparation). Belgian taxonomists actively contribute in relevant international initiatives (e.g., IUCN red lists, Cites annexes, OSPAR,...)

More information:

- *For Brussels Red lists: Dr M. Gryseels, Brussels Institute for the Management of the Environment, Gulledele 100, B-1200 Brussels. Web: <http://www.ibgebim.be>*
- *For Flanders Red lists: have been established, validated and officially adopted for a number of groups. Work is ongoing for other groups. Contact person: Dr J. Tack, Flemish Institute of Nature Conservation, Kliniekstraat 25, B-1070 Brussels. Web: http://www.inbo.be/content/page.asp?pid=BEL_VLA_SOO_rodelijst*
- *For Wallonia Red lists: have been established for some groups, while a number of preliminary lists are currently being revised. Contact person: Dr M. Dufrière, Research Centre for Nature, Forest and Wood of the Walloon Region, Avenue Maréchal Juin 23, B-5030 Gembloux. Web: <http://mrw.wallonie.be/dgrne/sibw>*
- *Lists with alien invasive species*

Belgian taxonomists contribute to several online lists; for instance:

- *through DAISIE (Delivering Alien Invasive Species Inventories for Europe). Web: <http://www.europe-aliens.org/index.jsp>*
- *through <http://ias.biodiversity.be/>*

1.2 Does your country have a national species checklist?

Peeters et al (2003). Biodiversity in Belgium. Royal Belgian Institute of Natural Sciences, 416pp (ISBN 90-73242-08-8) provides a detailed account of the knowledge of the biodiversity of Belgium (including status, trends and threats)

When was it last revised and updated?

Is presently under revision with the construction of a national on-line species register as goal. This work started in November 2007 by the Belgian National Focal Point to the Convention on Biological Diversity. The resulting 'Belgian Species Catalogue' will consist of an online register of the estimated 35,000 different species that thrive in Belgium. Data are gathered from Peeters et al (2003). The taxonomic hierarchy is derived from the 'Dutch Species Catalogue'. Termination of this project is foreseen for 2010. More elaborate linkages with international initiatives (e.g., Catalogue of Life) will need to be developed.

Is there any national assessment of which taxonomic groups in particular lack taxonomic information?

Peeters et al (2003) provide a detailed overview. Franklin (ed., 2004), however, warns on the precarious nature of the taxonomic expert base. Belgian research increasingly relies on an aging taxonomic community, with permanent staff often over 50 years old and with a significant input by retired researchers and skilled amateurs who frequently have to self-fund their research. For taxa that lacked taxonomic data in 2004, there's little to no improvement 5 years later.

Did you submit a response to the GTI questionnaire on these issues?

*Yes, the GTI questionnaire (Franklin (ed.) 2004) was submitted in September 2004. It is available online on:
http://www.biodiv.be/implementation/docs/reports/them_reports/gti_2004*

Understanding Patterns and Change: "Where is it, what's happening to it, and where is it going?"

Describe 1-2 flagship projects related to bullet points below and suggest some recommendations useful for meeting as a result from these projects:

1.3 Please outline any national taxonomy-based monitoring or surveys designed to establish the distribution, status and trends of any taxonomic group.

- *Biodiversity monitoring being a regional competence in Belgium, such national systems do not exist. However, there are numerous projects that fit under this category and that being implemented either by Federal Research Institutes or Universities. For a partially updated overview, see the BioBel database (<http://BioBel.biodiversity.be>)*

1.4 Is there any coordinated effort in your country regarding bar-coding for identification or the assessment of biodiversity?

Use of molecular tools (beyond DNA barcoding) is becoming a standard technique in taxonomic research in Belgium; a true coordinated effort is not present. Nevertheless, two federal research institutes (RBINS, RMCA) cooperate in the Joint Experimental Molecular Unit (see <http://www.jemu.be/>)

1.5 Are you aware of any major efforts (or projects) in your country to integrate morphological and molecular taxonomy?

Several such projects are underway and this in and between different scientific institutions (museums, universities, ...)

2-Taxonomy as a Basis for Ecological Research and Sustainable Management of the Biodiversity

Ecological Functions and Services: “What does it do, and what does it interact with?”

How does taxonomic research contribute to better understanding of the functions and attributes of species, and to the management of biodiversity?

2.1 Do you know projects involving taxonomists in the understanding of ecological functioning, or the assessment of ecosystem services?

Some exists, but projects in which taxonomists are full and equitable partner in ecologic or ecosystemic research are rare.

2.2 What is the contribution of taxonomy in your country to the management of biological invasions?

Taxonomists provide identification services of potential or suspected invasive species (see, for example, <http://ias.biodiversity.be/> or <http://www.europe-aliens.org/index.jsp>)

2.3 What is the contribution of taxonomy in your country to efforts to understand the status and trends of key functional groups such as pollinators?

Again, there are some isolated projects or initiatives (e.g., <http://www.zoologie.umh.ac.be/hymenoptera/default.asp>) but hardly any concerted effort exists. A related initiative is one by the Belgian National Focal Point to the Global Taxonomy Initiative, which currently supports the production of a volume in the monographic series “Abc Taxa”, dealing with the bee genera of Africa. This volume, authored by a South African, a British and a Belgian taxonomist, is expected to be released in 2010. It will arm beginning taxonomists in Africa to identify their bee fauna and as such better document the trends.

Taxonomy, biodiversity and its conservation: “How to manage it in sustainable way?”

Describe 1-2 flagship projects related to bullet points below and suggest some recommendations useful for meeting as a result from these projects:

2.4 Are there also non-professional organisations recording biodiversity data collections (e.g. ornithologists) involved in the decision process of landuse planning etc.?

Yes – Natuurpunt (<http://www.natuurpunt.be/default.aspx>) and Natagora (<http://www.natagora.be/>) are the main actors. Apart of these, there are over 50 societies and associations involved in monitoring of species (mostly birds, bats, reptiles, amphibians, butterflies, mollusks, orchids, fungi etc.). These societies and associations produce biodiversity data and are involved in awareness-rising, and as such drive the decision process (more information to be found via the database <http://biobel.biodiversity.be/>)

2.5 Are there some indicators (or red-list species) either for monitoring Natura 2000 sites or for delimitation and management of nature reserves used in your country?

Yes, see point 1.1

2.6 Which taxonomy-related research (standardized taxonomic metadata, delivery of checklist building tools, building expertise network) in developing non-European biodiversity-rich countries is supported by policy-makers from your country based on your national expertise and experience?

See Metafro: (see <http://www.metafro.be/>)

2.7 Is there a National Needs Assessment of GTI in your country? If yes, what are your specific needs, e.g. for conservation, protected areas, CITES/customs, dealing with invasive species etc?

None

3- Taxonomy, Potential Users and Capacity Building of Experts

Open Access to Information: “How to find out about it?”

How does taxonomic information get from where it resides to where it is needed elsewhere in the world?

3.1 To what extent is taxonomic research in your country contributing to international biodiversity initiatives and projects (e.g. GTI, GBIF, PESI, EOL)

Aspect well developed in Belgium. Belgian partners are active in PESI, 4D4Life (species2000), ERMS (and WoRMS), EoL; the Belgian GTI national focal point is amongst the most active ones and the Belgian Biodiversity Platform is a very active GBIF node, with a digitization project call, and involvement in several projects (e.g., SCAR-MarBIN: <http://www.scarmarbin.be/>, FADA: <http://fada.biodiversity.be/>). Other institutes are equally active in the field, e.g., the regional Flanders Marine Institute (VLIZ: <http://www.vliz.be/EN/INTRO>) is active as European OBIS node, and the Tervuren Museum for Central Africa has developed an portal to African biodiversity information (see <http://www.metafro.be/>)

3.2 What is the state of the art in biodiversity informatics in your country? e.g. e-taxonomy and e-science tools)

Highly developed – e.g., see initiatives by VLIZ, SCAR-MarBIN, NeMYS (<http://nemys.ugent.be/>). Several other, more isolated, projects are also installed and running.

3.3 Has there been a national assessment of best practices for taxonomic data quality and validation?

NO

3.4 Do you have any national guidelines on how to approach the proof of absence?

NO

3.5 What are the taxonomic standards used in the databases (TDWG, Darwin core, COL, PESI, etc.)?

Most if not all initiatives rely on open access standards (TDWG) proposed by international initiatives like GBIF.

3.6 Could you identify the major digitization efforts for biodiversity data (e.g. collections, observations, species checklists)?

*The main taxonomic institutes develop activities in this field (see Metafro, DarWin: <http://www.naturalsciences.be/darwin/> and others), supported by federal funding; the BBPF issues an annual digitization project call
The National Botanic Garden of Belgium also digitizes its herbarium and related collections (<http://www.biodiversity.be/bbpf/data/projects.html>).
Regional activities exist, especially promising is the cooperation between the Flemish Institute for Nature and Forest Research (INBO: see <http://www.inbo.be>) and the Flanders Marine Institute.*

3.7 Is there any effort in your country to make taxonomic information especially identification services easily accessible and useful to practitioners?

*Not for National use; SCAR-MarBIN is producing an online identification tool.
Several other, more isolated, projects are also installed and running (for instance: www.abctaxa.be)*

Capacity Building in Biodiversity-rich Countries and Worldwide

What is the state of training and education in systematics and are there any gaps in capacity?

EDIT has recently made a detailed evaluation of the European training offer (cf. <http://www.e-taxonomy.eu/node/150>)

3.8 Are there any policy initiatives in your country to orient capacity building in taxonomy?

NO

3.9 Are there any sources of finance or policy actions in your country dedicated to applied taxonomy (e.g. identification tools, training for parataxonomists, i.e. field-trained biodiversity collection and inventory specialists recruited from local areas)?

*YES – The Belgian National Focal point to the GTI has set up a Capacity Building programme for taxonomy (cf. http://www.biodiv.be/cooperation/gti_coop), whereas the African Biodiversity Information Centre of the Royal Museum of Central Africa, Tervuren issues scholarship grants (<http://www.africamuseum.be/news/research/zoology/ABIC>).
The Belgian Development Cooperation funds both opportunities.*