

## Conference targets priorities for biodiversity 'intelligence'

A landmark conference has agreed key priorities for harnessing the power of information technologies and social networks to understand better the workings of life on Earth.

The Global Biodiversity Informatics Conference (GBIC), gathering some 100 experts from around the world from 2-4 July in Copenhagen, Denmark, identified critical areas in which greater investment and better coordination could give society much better, innovative tools to monitor and manage biological resources.

The overall aim is to build global collaboration on biodiversity observation, uniting many partners and initiatives, capable of detecting and enabling responses to short-term changes and long-term trends in biodiversity and ecosystems.

The major output of the conference will be a Global Biodiversity Informatics Outlook (GBIO), setting out priorities for the next 5-10 years in order to guide funding agencies and broaden the evidence base for policies to conserve and sustainably use biodiversity. A draft of the document will be circulated for comment throughout the GBIF network and wider biodiversity informatics community in early September.

A concise meeting report for GBIC is available [here](#) along with other key documents including formal presentations and introductory comments by the Executive Secretary of the Convention on Biological Diversity (CBD), Bráulio Dias.

GBIC was hosted by GBIF and the University of Copenhagen, and organized in conjunction with [CReATIVE-B](#) (Lifewatch), the [Encyclopedia of Life](#), the [Consortium for the Barcode of Life](#) and the [Natural History Museum](#), London.

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14th Annual BIOECON Conference

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Biodiversity Technologies Symposium

## SCIENCE AND POLICY

A further 30 scientific research papers making use of data accessed through GBIF were identified during June and July, bringing the total published so far in 2012 to 119. The research includes papers on predicting the relative abundance of species based on occurrence data; on the factors influencing whether alien species will survive successfully in their new environment; and on differences between the likely response of species on land and in the oceans to climate change.

As usual, these papers are detailed in our *GBits Science Supplement*, available online at <http://www.gbif.org/communications/resources/newsletters/>.

## DATA PUBLISHING

### New GBIF reference guide for verifying zoological names

A new [guide](#) published by GBIF provides detailed advice for those working with zoological names in digital environments.

The publication, *Guidelines for the Capture and Management of Digital Zoological Names Information*, aims to promote consistency in the spelling and formats used for animal species and genera, to avoid costly and time-consuming subsequent efforts to link datasets referring to the same species.

The advice provided in the manual is based on the International Code of Zoological Nomenclature (ICZN) and experience gathered over the years by [AnimalBase](#), a project set up in 2004 by the University of Göttingen in Germany to digitize early zoological literature. It complements the substantial documentation already made available by ICZN on the issue of taxonomic names.

### OpenUp! project halfway to heritage access target

The EU-funded [OpenUp!](#) project has made more than half a million photographs, videos, sound recordings, drawings and other multimedia objects from leading European natural history collections freely available via the [Europeana](#) digital library and museum.

Led by the Freie Universität, Berlin, OpenUp! is a consortium of 23 scientific institutions based in 12 European countries, including the GBIF Secretariat in Copenhagen. The aim is to open up the great wealth of heritage contained in Europe's natural history museums and botanical gardens, with a target of providing at least 1.1 million objects to Europeana by 2014. Europeana currently provides access to over 23



Example of natural history objects published to Europeana: Herbarium specimen, Common Cornflower (*Centaurea cyanus* L.) of the Willing Collection, BGBM Berlin.

million books, paintings, films, museum objects, and archival records from more than 2200 institutions in 33 countries.

## NEW DATA

Following the latest update of the GBIF data index, more than 377 million occurrence records were accessible through the [data portal](#) at the end of July, including 329 million with geographical coordinates. More than 10,000 biodiversity datasets have been registered by 419 data publishers.

A selection of new data coming into the GBIF network during June and July is shown below.

### Ghana

The [Ghana Biodiversity Information Facility \(GhaBIF\)](#) has published its first dataset, following a mentoring project with [NLBIF](#), the GBIF node in the Netherlands. The dataset includes 85,000 records of more than 10,000 plant species from the University of Ghana's herbarium located in the capital, Accra.



The herbarium has one of the largest collections in West Africa and has specimens from other countries in the region. The data are published using NLBIF's Integrated Publishing Toolkit (IPT). (<http://data.gbif.org/datasets/resource/14195>)

## Denmark

Pensoft Publishers' open-access online journal ZooKeys has published occurrence records for nearly 200 specimens of velvet spiders examined for a taxonomic study published in May. The article, [The velvet spiders: an atlas of the Eresidae \(Arachnida, Araneae\)](#) reported a comprehensive analysis of the lineage of the Eresidae family, comprising nearly 100 species of spiders occurring mainly in Africa, Europe and Asia and including some with spectacular colouring such as the Ladybird Spider (see photo).



A male Ladybird Spider (*Eresus kollari*) found in the Czech Republic. Photo: Pavel Krásenský.

Jeremy Miller of Naturalis Biodiversity Center in the Netherlands carried out the work with colleagues from the United States, Denmark and the Czech Republic, using electron microscopy and DNA sequencing to analyse the phylogeny or relatedness between the species. Records of the specimens with their original collection locations, mainly from Southern Africa and Europe, were published to GBIF through the Integrated Publishing Toolkit (IPT) operated by Pensoft Publishers, and they are hosted by Denmark. (<http://data.gbif.org/datasets/resource/14165>)

## United Kingdom

The [University Museum of Zoology](#), Cambridge has published more than 65,000 specimen records from its collections, designated as being of outstanding historical and international importance. Much of the museum's material was gathered during collecting expeditions in the 19th century which provided the first documentation of fauna in many parts of the world. The collections therefore offer essential baseline data against which to assess the current distribution and status of species.

The Cambridge collections include individual specimens of exceptional historical significance,

including fine examples of the Dodo and Great Auk, skins of the extinct Tasmanian Wolf and many of Darwin's specimens, some of which were collected from his voyage on the Beagle, and from his time studying at the University of Cambridge. More recent additions to the collections include fossils of the earliest land vertebrates, molluscs from the excavation of the Channel Tunnel, which document climatic change in Europe over the past 10,000 years, and a rich variety of invertebrate fauna from the Seychelles. (<http://data.gbif.org/datasets/resource/14193>)

## Germany

Users of the GBIF portal and web services now have access to another historically important dataset from the herpetological collection of the [Staatliches Museum für Naturkunde Stuttgart](#). The museum has published over 7,000 records from the collection, which dates back more than 200 years and includes specimens contributed by leading 19th century collectors such as Baron Carl Ferdinand von Ludwig, Duke Paul Wilhelm von Württemberg, Baron F. von Müller and August Kappler. The collection includes some 20,000 reptile and amphibian specimens from all over the world, with tortoises, crocodiles and neotropical amphibians forming an important part of the museum's holdings. (<http://data.gbif.org/datasets/resource/14192>)

The [Senckenberg Museum für Naturkunde Görlitz](#) has published over 68,000 records from Edaphobase, a database on soil organisms such as earthworms, threadworms, beetle mites, centipedes and others. The information is based on more than 50 years of research. (<http://data.gbif.org/datasets/resource/14157>)

## Switzerland

The [Global Mountain Biodiversity Assessment](#), a network of the international research programme [DIVERSITAS](#), has published 163,000 records from its Himalayan uplands plant database, which describes plant species related to the Tibetan Plateau in Central Asia. Data have been collected for over 50 years, in 13 countries. Over 2,200 collectors from all over the world have contributed to this dataset and nearly all the records are georeferenced. (<http://data.gbif.org/datasets/resource/14158>)

The [Mountain Invasion Research Network](#) has published over 3,700 observation records of non-native plant species in some of the mountain areas of Australia, Chile, Spain and the United States. Plants recorded include field pennycress, orchard grass, chicory, Kentucky bluegrass and prickly lettuce. (<http://data.gbif.org/datasets/resource/14164>)

The [Centre Suisse de Cartographie de la Faune](#) has published over a million records of butterflies,

dragonflies and orthoptera – grasshoppers, crickets and locusts – from 1835 onwards. (<http://data.gbif.org/datasets/resource/14168>, <http://data.gbif.org/datasets/resource/14169>, <http://data.gbif.org/datasets/resource/14170>)

[Biodiversitätsmonitoring Schweiz](#), a programme of the federal government, has published 26,700 bird observation records from common breeding species in the area. These include birds such as the Eurasian bullfinch, Eurasian collared dove, Mistle thrush and the Blue tit. (<http://data.gbif.org/datasets/resource/14166>)

## France

The [Musée George Sand et de la Vallée Noire](#) has published 2,500 records of more than 1,300 species from its collection of mounted bird specimens started by Jean François Emmanuel Baillon, a naturalist from northern France, during the 18th century. The collection includes more than 60 specimens dating from before 1800, and nine examples of species or subspecies that have gone extinct. (<http://data.gbif.org/datasets/resource/14302>)

## The Netherlands

The [Natural History Museum Maastricht](#) has published 22,240 records of plants from its herbarium. (<http://data.gbif.org/datasets/resource/14173>)

## Belgium

The [Research Institute for Nature and Forest \(INBO\)](#) has published over 72,000 records of ladybirds from its Belgian Coccinellidae dataset. About 15% are from museum collections and literature data. The rest are observation records provided by more than 500 volunteers. The records cover about 85% of Belgium. (<http://data.gbif.org/datasets/resource/14177>)

## Canada

The [herbarium of the University of British Columbia](#) has published 70,000 records of algae, including more than 5,000 species collected between the 1950s and 1980s, all along the Pacific coast from central California to Alaska and the Aleutian Islands. (<http://data.gbif.org/datasets/resource/14174>)

The [Jardin Botanique de Montréal](#) has published more than 24,000 data records of living plant specimens from its collections, comprising almost 16,000 species. The garden is ranked as one of the largest of its kind in the world. (<http://data.gbif.org/datasets/resource/14163>)

Both of these datasets were published using the Canadensys data repository (see Around the Network, p 6).

## United States

The [United States Geological Survey \(USGS\)](#) has published over 100,000 records from its database of nonindigenous and introduced aquatic species. The database, with records from virtually the entire country, was set up as a central repository for accounts of introduced aquatic species, for use by biologists, official agencies and the general public. The records include species exotic to North America, such as the Asian carp and zebra mussel, and fish species which have been transplanted from native watersheds on the continent into non-native watersheds, such as the bluegill and the largemouth bass. (<http://data.gbif.org/datasets/resource/14300>).

## GBIF COMMUNITY

### Regional nodes meetings

GBIF nodes in Asia, Africa and North America met in June and July to enable collaboration at the regional level and made progress on their regional strategic plans.

The **fourth meeting of the Asian nodes** was organized in Taipei by TaiBIF (GBIF Chinese Taipei), from 28 to 30 June. It involved 11 participants from five country nodes (India, Japan, Korea, Pakistan and Philippines) and three other Associate Participants (ACB, Chinese Taipei and ICIMOD). Highlights included:

- Agreement on the major components of a **regional action plan for Asia**, recognizing the limited amount of openly accessible biodiversity data in the region. The plan foresees **two collaborative scientific initiatives**, a **content and data mobilization strategy** for the region, and **strengthening biodiversity information and engagement**. The two collaborative projects will be on **national species checklists**, including invasive, Red List, endemic species and migratory birds for comparative study; and on updating databases to assess the **risk of fish biodiversity loss** in Asia.

A **workshop on sharing biodiversity information and on the Integrated Publishing Toolkit (IPT2)**, was also organized by TaiBIF back-to-back with the regional nodes meeting. The workshop was funded by GBIF and Taiwan National Science Council, and held at the Taiwan Endemic Species Research Institute, Jiji Town, central Taiwan, from 25-27 June. Presentations from the workshop are available at <http://taibif.org.tw/en/ipt2012/en-agenda>.

The **African nodes** met for the third time on 17 and 18 July in Kigali, Rwanda. The meeting was hosted by the Albertine Rift Conservation Society (ARCOS), in collaboration with the Centre for Geographic Information Systems of the National University



The regional meeting of African nodes in Kigali, Rwanda.  
Photo: Fabian Haas

of Rwanda. Fifteen African country nodes and international organizations participated in the meeting. Highlights included:

- Progress with implementing the **action plan for the region**, and discussion of the establishment of an **African Coordinating Mechanism**, to include a data mobilization strategy, capacity development and advancing the regional engagement framework.
- Proposal for an **Africa Science Committee**, addressing key research questions and priority areas for the region, as well as the biodiversity informatics research agenda.
- Recognition of increasing **node-to-node collaborations** within Africa.

The **third meeting of the North American nodes** took place in Washington DC at the Smithsonian Institution's National Museum of Natural History the 23-24 July, and was co-hosted by the Smithsonian, U.S. Geological Survey, Integrated Taxonomic Information System, Consortium for the Barcode of Life, Encyclopedia of Life, and NatureServe. Twenty-three people participated in the meeting with an additional seven online participants, representing a total of 22 organizations. Highlights included:

- Agreement to develop a **regional strategy**, based on the goals expressed in the GBIF 2012-16 Strategic Plan. Major objectives will be to foster **joint collaboration** between organizations on informatics development, **content mobilization and use**, and **community engagement**.
- Node managers and invited speakers identified **plants and invasive alien species** as possible candidates for a regional thematic focus, and plan to utilize the region's strengths in **genomic and taxonomic expertise** to continue furthering the GBIF network.

## Three GBIF mentoring projects selected for funding in 2012

Three projects have been selected to receive support through GBIF's 2012 mentoring programme, aimed at sharing expertise and technical support between participants to stimulate development of biodiversity information facilities.

In the first project, GBIF Japan will help the [Indonesian Institute of Sciences](#), which hosts the national node, to establish a network for the management of biodiversity information. The [Japanese node](#) will provide training for Indonesian colleagues to help develop a national plan for managing and publishing data.

In addition to support provided from core GBIF funds, GBIF Japan is to receive six million Yen (about €63,000) over three years from Tokyo's National Museum of Nature and Science, for mentoring projects primarily in Southeast Asia, with an initial focus on Indonesia.

In the second mentoring project, the [Atlas of Living Australia \(ALA\)](#) will act as mentor to Costa Rica's national biodiversity body [INBio](#). The collaboration will help define a national strategy and action plan to mobilize and publish data through Costa Rica's GBIF node. A national workshop on biodiversity informatics is planned, and a group of software developers from INBio will be trained to adapt technology developed by ALA to suit Costa Rica's needs.

In the final project, the [South African Biodiversity Information Facility \(SABIF\)](#) will act as mentor to ICLEI, a global network of local governments whose [Local Action on Biodiversity centre](#) is based in Cape Town. Staff from about 20 local governments from cities around the world will be trained in using tools and standards supported by GBIF to enable biodiversity data to be published and freely accessed. As part of the project, a workshop for data publishers from local governments will be held during the Cities and Biodiversity Summit in Hyderabad, India in October. [Read more...](#)

## Translations available for key documents

New translations of the GBIF Memorandum of Understanding are now available in Portuguese and French, thanks to voluntary efforts by the Brazilian Ministry of Science, Technology and Innovation (MCTI) and GBIF Canada respectively. They supplement an earlier translation of the MoU into Spanish carried out by GBIF Mexico. Translations of the GBIF Strategic Plan (2012-2016) have also been contributed in French (by GBIF Canada) and Traditional Chinese (by TaiBIF). All the documents are available [here ...](#)

Additionally, SIB Colombia, which hosts the national node, has translated the manual for the Integrated Publishing Toolkit into Spanish. The manual is available at [http://www.gbif.org/orc/?doc\\_id=4708](http://www.gbif.org/orc/?doc_id=4708).

## AROUND THE NETWORK

### South African citizen science portal launched at forum

The South African National Biodiversity Institute (SANBI) has launched a portal enabling the public to record and exchange information about biodiversity. The [iSpot southern Africa portal](#) is operated in collaboration with the United Kingdom's Open University which set up the [iSpot citizen science platform](#) in 2008.

SANBI, which hosts the GBIF node in South Africa (SABIF), officially launched iSpot southern Africa during the fourth Biodiversity Information Management Forum, held at Kirstenbosch near Cape Town in June. It was followed by a 'bioblitz' at the nearby [Kenilworth Racecourse Conservation Area](#) in which scientists and around 150 members of the public photographed as many plant, animal and fungus species as possible and posted the data on the iSpot portal.

The forum brought together 29 South African and 16 international organizations. Museums and institutes receiving grants through SABIF to digitize their collections showcased their work. SABIF also hosted a training course on data quality.

### Canadensys explorer launched

The [Canadensys data repository](#) has launched a new explorer tool, which allows users to explore, filter, visualize and download all the specimen records published through the Montreal-based network.



The Canadensys explorer currently aggregates 15 published collections, comprising over 600,000 occurrence records of which nearly 80% are from Canada. All of the records are served to the GBIF network using the Canadensys Integrated Publishing Toolkit (IPT).

### Public invited to contribute to atlas of Irish mammals

The National Biodiversity Data Centre (NBDC) in Ireland is asking the public to help record the distribution of wild mammals in the country and its surrounding seas. The [Atlas of Mammals in Ireland](#) project compiles data from existing recording initiatives, presenting species accounts and distribution maps. A primary aim is to encourage recording of the more common Irish mammals to help draw up a comprehensive picture of their distribution by 2015, acting as a baseline against which to monitor future change.

An account of the '[great Irish mammal watch](#)' appeared in the *Irish Times* on 5 July.

### GBIF showcased at public science event in Germany

Interested public had the opportunity to get an insight into biodiversity informatics and [GBIF Germany](#) at the Berlin Night of Science "*Lange Nacht der Wissenschaften*". A 20-minute talk on science data in GBIF, short films on GBIF-related projects and guidance on using the GBIF portal were given at the [Natural History Museum \(Museum für Naturkunde, MfN\)](#) and the [Botanic Garden and Botanical Museum Berlin-Dahlem \(BGBM\)](#).

## INFORMATICS

### Task group to develop standard for species descriptions

A new task group for Biodiversity Information Standards (TDWG) is being set up to take forward the [Plinian Core](#) set of descriptors, enabling information about species to be shared and integrated.

The Plinian Core provides standardized descriptors for species reproduction, behaviour, lifecycle, feeding and other information. It was adopted by the [Inter-American Biodiversity Information Network \(IABIN\)](#), and used to import species information into the [Encyclopedia of Life \(EOL\)](#). The standard is now to be developed further as a community effort, through the task group open to all interested. The group is expected to be formed in time for the 2012 TDWG annual meeting from 22-26 October in Beijing. The task of bringing the Plinian Core to the next level was discussed at a meeting hosted by [CONABIO](#), the GBIF node in Mexico.

### New tool for analysing datasets published through GBIF

The University of Navarra in Spain has developed an online tool to visualize the content of datasets published to the GBIF network. The BioDiversity



DataSets Assessment Tool (BIDDSAT) helps potential users to assess the fitness for use of datasets and bring up issues for correction.

The online application is accessible at <http://www.unav.es/unzyec/mzna/biddsat/> and is supported by all major browsers. A description of the tool was published in the [Bioinformatics journal](#) in June.

### **Darwin Core Archives now just a click away with BioCASE 3.2**

The development team at the Biological Collection Access Service (BioCASE) has released a new version of its BioCASE Provider Software. Information published using the new version, BioCASE 3.2, can be easily stored as XML or Darwin Core Archives.

With the new archives supported by BioCASE, harvesting and indexing processes will be more efficient and less error-prone. Data publishers can now easily switch between using the simpler Darwin Core standard and the richer Access to Biological Collections Databases (ABCD) schema. For more information on BioCASE and the new software version, visit <http://www.biocase.org>.

## **OPPORTUNITIES**

### **i4Life call for Pilot Projects – building content for the Catalogue of Life**

*Deadline: 31 August 2012 - 12:00 am (midnight, Paris local time).*

The i4Life project is offering funding to establish and implement i4Life Pilot Projects to enhance taxonomic content of Global Species Databases (GSD) that will check and incorporate in their databases new scientific names and taxa, harvested from Global Partners (GBIF, IUCN Red List, BOLD, EMBL ENA and Encyclopedia of Life).

The objective of the pilot projects is to place as many new scientific names from Global Partners as possible in taxonomic checklists and, then, supply them to the Catalogue of Life during routine updates. Unincorporated names will be returned to i4Life with annotations to show their status.

The i4Life budget commits approximately €200k plus overheads for this purpose and the duration of the pilot projects will be 5 months. Eligibility criteria are governed by European Commission rules.

More information is on the i4Life webpage: <http://i4life.eu/pilots.php>

## **UPCOMING EVENTS**

### **3rd European Congress of Conservation Biology (ECCB 2012)**

*28 August - 1 September 2012, Glasgow, United Kingdom*

[More information...](#)

### **IUCN World Congress 2012**

*6-15 September 2012, Jeju, Republic of Korea*

[More information...](#)

### **14th Annual BIOECON Conference**

*18-20 September 2012, Cambridge, United Kingdom*

[More information...](#)

### **19th meeting of the GBIF Governing Board (GB19)**

*16-21 September 2012, Lillehammer, Norway*

[More information...](#)

### **Biodiversity Technologies Symposium**

*27-28 September 2012, Oxford, United Kingdom*

[More information...](#)

*VISION OF GBIF: A world in which biodiversity information is freely and universally available for science, society, and a sustainable future.*

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