

## **GBIF Finland demonstrates 'assembly line' for digitization**

A new high-performance system for digitizing natural history records in Finland aims to convert a thousand plant or insect specimens a day into digital data.

The system is custom-built from conveyor belts and cameras, acquired from various sources (see this [video showing the system in operation](#)).

The 'assembly line' has been developed in Joensuu, Finland, by Digitalium, the digitization centre of the Finnish Museum of Natural History and University of Eastern Finland, which operates the GBIF national node.



The GBIF Finland node manager, Hannu Saarenmaa, said: "Digitalium came to the conclusion that traditional, manual work will not cut it in digitizing those millions of specimens in the world's collections.

"It seems to be plausible to run 1000 samples through our system in one working day with a workforce of one to three people. This will be achieved by automated conveyor belts, sensors, image pattern recognition in real time, and intelligent software."

A demonstration of the system will take place at a mini-workshop organized by Digitalium in Joensuu on 29 October. If you would like to attend, please contact [hannu.saarenmaa@uef.fi](mailto:hannu.saarenmaa@uef.fi).

[Read more...](#)

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## GBIF PUBLICATIONS

### New guide for developing marine species checklists

GBIF has published a new guide highlighting some of the procedures and online resources to help build and maintain species checklists for marine regions.

The publication, [Best Practice Guidelines in the Development and Maintenance of Regional Marine Species Checklists](#), outlines the steps required to compile distribution notes, to set up a register, and to produce a checklist. It also describes some of the stumbling blocks that might be encountered along the way, and offers suggestions on how to overcome them.

The publication was developed for GBIF by its marine biodiversity partners: the [Ocean Biogeographic Information Systems \(OBIS\)](#), the [World Register of Marine Species \(WoRMS\)](#) and [Fisheries and Oceans Canada](#). It complements other recent GBIF publications on developing species checklists and taxonomic names, all available through the [GBIF Online Resource Centre](#).

[Read more...](#)

## TAXONOMY

### Naming of animal species moves into the digital age

A landmark decision by the body that regulates zoological names has ended the centuries-old rule that new animal species must be described in a printed journal.

After a highly-charged debate among taxonomists lasting four years, the [International Commission on Zoological Nomenclature \(ICZN\)](#) has passed an amendment to its code, allowing electronic publication of new names, under certain conditions.

The amendment, published simultaneously in *Zookeys* and *Zootaxa* journals, changes the code to accept electronic-only publishing as 'legitimate' if it meets criteria of archiving and the publication is registered at the ICZN's official online registry, [ZooBank](#).

Read text of amendment [here...](#)

Read ICZN press release [here ...](#)

## SCIENCE AND POLICY

### Fourth GBits Science Supplement published

As usual, recent uses of biodiversity data discovered and accessed through the GBIF network are summarized in the companion publication to this newsletter, the [GBits Science Supplement](#). Issue Four of the supplement, covering August and the early part of September 2012, highlights research on present and potential future distribution of vampire bats; on the plant content of traditional aphrodisiac mixtures used in Afro-Caribbean and West African cultures; and the potential spread of the invasive Australian windmill grass (*Chloris truncata*).

## AROUND THE NETWORK

### Digital catalogue of New Zealand's biodiversity launched

The [New Zealand Organisms Register \(NZOR\)](#) was launched in August. NZOR is the national digital species catalogue for New Zealand and contains fundamental information on taxonomic names, synonyms, classification, nomenclatural data, common names and bibliographic data for around 70,000 organisms, indigenous or introduced (in the wild or in captivity) to New Zealand.

NZOR is based on a federated data network of national taxonomic data providers which includes the national plant, fungi and animal collections, together with data from the recently-published [New Zealand Inventory of Biodiversity](#). The NZOR infrastructure delivers a set of web services to facilitate data discovery, access and integration into end-user data management systems supporting the New Zealand conservation, biosecurity and environmental research sectors.

For further information, please contact Jerry Cooper, NZOR Project Manager and NZ GBIF Node Manager ([cooperj@landcareresearch.co.nz](mailto:cooperj@landcareresearch.co.nz)) or Kevin Richards, NZOR Developer ([richardsk@landcareresearch.co.nz](mailto:richardsk@landcareresearch.co.nz)), Landcare Research, New Zealand.

### Atlas of Living Australia develops tests to detect suspect records and duplicates

The [Atlas of Living Australia \(ALA\)](#) has implemented a set of tests to identify suspect records automatically. The ALA, which hosts the GBIF national node in Australia, runs an algorithm known as Reverse JackKnife to find spatial outliers, records that arouse suspicion because they fall significantly outside the range suggested by the rest of the data.



A discussion on the algorithm used is at [http://code.google.com/p/ala-dataquality/wiki/DETECTED\\_OUTLIER\\_JACKKNIFE](http://code.google.com/p/ala-dataquality/wiki/DETECTED_OUTLIER_JACKKNIFE).

The ALA has also developed tests to find duplicate records. One method will be to flag specimens that were collected by the same person as part of the same collecting event. For observations, the system may flag duplicate observation records that have historically been shared between datasets. Identification of this kind of duplicate is of particular interest for distribution modelling.

Technical implementation of the tests is discussed [here \(for outliers\)](#) and [here \(for duplicates\)](#).

### **Ireland's biodiversity data centre appeals for insect records**

GBIF's partners in Ireland are appealing for help from the public to develop an atlas of grasshoppers, crickets and earwigs.

The [National Biodiversity Data Centre \(NBDC\)](#) is collaborating with the United Kingdom's Biological Records Centre to map the distribution of these insect groups in the UK and Ireland.

To help with observations from citizens, NBDC has issued [identification guides for the target species](#).



Common earwig (*Forficula auricularia*)

Records may be submitted at [iti.ms/Pyz6n](http://iti.ms/Pyz6n).

The story was carried in the Irish Times under the headline [‘Bugged by the hugely under-recorded presence of earwigs’...](#)

### **‘New deal’ needed for world's plants – outgoing Kew director**

People around the world need to embrace a ‘new deal’ to recognize the economic, health and environmental benefits of plants, according to the outgoing director of Royal Botanic Gardens, Kew, in London.

Stephen Hopper made his comments to the *Guardian* newspaper shortly before completing his six-year term as chief executive of Kew, which publishes more than half a million specimen records to the GBIF network.

“We’re at a crossroads in many ways, we now have half the remaining wild vegetation on the planet left that was around 200-300 years ago,” said Hopper.

“One-third of the plant species we looked at, we didn’t have enough data,” said Hopper. “Of the two-thirds for which we did have data, one-fifth of them were threatened in some way. We finally have reasonable statistics at a global level to understand the scale of the problem and it’s formidable. Some 80,000 species on the planet are at some risk of going extinct over the next 50-100 years,” said Hopper.

Read the full interview in the [Guardian...](#)

## **TRAINING**

### **National and regional training on biodiversity informatics in Argentina, Africa and Asia**

A **national workshop on data quality and management for natural history collections in Argentina** gathered 37 participants from institutions all over the country, from 3-7 September.

Topics at the workshop ranged from data capture and labels to linking collections to molecular datasets and the semantic web.

Francisco Pando and Katia Cezón from [GBIF Spain](#) were instructors. The event was organized by the [Centro Nacional Patagónico \(CENPAT\)](#), a research centre under the Argentinian government agency on scientific research – CONICET. Support was provided by the [National System for Biological Data SNDB](#), an initiative of the Argentinian Ministry of Science.

[Read more...](#)

The **Albertine Rift Conservation Society (ARCOS)**, an Associate Participant of GBIF, organized a three-day training event in Kigali, Rwanda, on building biodiversity information systems in the region.

Staff from various data-holding institutions in the Albertine Rift region – Uganda, the Democratic Republic of Congo (DRC), Rwanda, Burundi and Tanzania – were trained in Geographic Information Systems (GIS), remote sensing and database management systems.

Participants at the event, from 3-5 September, were led through the steps of uploading and publishing data to the regional biodiversity portal, which is under



development. The Tanzanian biodiversity information facility TanBIF facilitated some sessions on the GBIF Integrated Publishing Toolkit (IPT).

The project to share biodiversity information in the region is funded by the [JRS Biodiversity Foundation](#).

The **JRS Biodiversity Foundation** is also funding a three-year programme to build biodiversity informatics capacity in Africa. A. Townsend Peterson, professor of ecology and evolutionary biology at the University of Kansas, will lead **multiple training sessions in four African nations**: Ghana, South Africa, Kenya and Egypt. A global online training curriculum for biodiversity informatics will be developed through the programme. Activities related to this project can be followed on the facebook page <https://www.facebook.com/groups/BiodiversityInformatics/>.

The first course is to be held in Nairobi, Kenya, from 25-28 February 2013, on ecological niche modelling.

A **two-day training event** on [biodiversity data publishing in the Hindu Kush Himalayan region](#) was organized by the [International Centre for Integrated Mountain Development \(ICIMOD\)](#), a GBIF Associate Participant, in Kathmandu, Nepal, from 23-24 August.

Twenty-two participants were trained in data publishing, platforms for data sharing and in using the IPT. The participants represented government organizations, universities, research institutes and NGOs from eight ICIMOD member countries – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan.

The event was one of the [four regional training proposals](#) to receive GBIF funding support in 2012.

## NEW DATA

### Finland

The [Finnish Museum of Natural History](#) has published close to 900,000 records from its winter bird census, which dates back to 1956. Data come from volunteer birdwatchers who monitor wintering birds in Finland. During the winter of 2011/2012, data were collected via the Internet for the first time.

Volunteers taking part in the census freely design their own route of 5-15 kilometres, which they monitor three times during the winter. The idea is to monitor all bird species listed, including missing species. Reports are then sent to the coordinating team and records are categorized by habitats and registered. These winter bird surveys are especially helpful in monitoring increase or decrease of common bird species.

<http://data.gbif.org/datasets/resource/14354>

### Norway

Over eight million records from Norway were published to the GBIF network in August. The majority of the data records were from citizen science reports of fish, birds, mammals, plants and insects in the country. Other new datasets included: records of vascular plants in the Arctic archipelago of Svalbard; insects from the Stavanger Museum collections; the butterfly, horsefly and spider collections of the Helgeland Museum; and snails and slugs from the Bergen Museum.

<http://data.gbif.org/datasets/resource/14377>,  
<http://data.gbif.org/datasets/resource/14380>,  
<http://data.gbif.org/datasets/resource/14381>

### Sweden

The [Gothenburg Natural History Museum](#) has published 48,600 records of invertebrates and 55,800 records of vertebrates from its collections. The museum's holdings include rare items like the skin of the Tasmanian Wolf, extinct since 1933, specimens of the extinct Passenger Pigeon, and a sub-fossil skeleton of the Great Auk. The museum's collection of fish from Sweden dates back to the 1840s and it hosts the largest Swedish collection of parasitic worms.

<http://data.gbif.org/datasets/resource/14391>,  
<http://data.gbif.org/datasets/resource/14384>

### United Kingdom

The [UK Environment Agency](#) has published about 37,000 records collected through surveys and monitoring of invertebrates, plants, algae and fish. Rare and protected species such as the White-clawed crayfish (*Austropotamobius pallipes*) the only species of crayfish native to the British Isles, and the European eel (*Anguilla Anguilla*) are included in the dataset.

<http://data.gbif.org/datasets/resource/14389>



White-clawed crayfish (*Austropotamobius pallipes*)



## Ireland

193,000 records of moths from Ireland have been published by the [National Biodiversity Data Centre](#). Most of the records are from light traps and are aimed at providing a distribution map of moth species. Over 1350 moth species have been recorded, of which more than 570 are macro-moth (i.e. larger) species. (<http://data.gbif.org/datasets/resource/14385>)

## United States

The [Field Museum of Natural History in Chicago](#) has published over 1.2 million records of specimens from both the animal and plant kingdoms. The museum's fish and mammal collection dates back to the 1890's, and it houses the third largest collection of birds in the country.

The museum has one of the largest mammal collections in the world and has some of the best holdings from the Philippines, Peru, Chile, Madagascar, Tanzania, Egypt, and Iran. (<http://data.gbif.org/datasets/provider/49>)

The [California Academy of Sciences](#) has published close to 200,000 records from its insect collection. Among the significant areas represented in the dataset are Madagascar, São Tomé and Príncipe and the China-Burma border area. (<http://data.gbif.org/datasets/resource/14364>)

A number of new datasets have been published via the GBIF Integrated Publishing Toolkit (IPT) installed by [VertNet](#), the global network of vertebrate collection data. They include about 30,000 vertebrate records from the [Charles R. Conner Museum](#) based at Washington State University; 219,000 records from the [Texas Cooperative Wildlife Collection](#), a natural history collection maintained by the Texas A&M University; 18,700 records from the avian holdings of the [Cowan Tetrapod Collection](#) located in British Columbia, Canada; and 31,500 records of vertebrates from the collections of the [University of Texas at El Paso](#). (<http://data.gbif.org/datasets/resource/14363>, <http://data.gbif.org/datasets/resource/14379>, <http://data.gbif.org/datasets/resource/14386>, <http://data.gbif.org/datasets/resource/14396>)

## Canada

Two more datasets have been published through the GBIF Integrated Publishing Toolkit (IPT) hosted by the [Canadensys](#) data repository. The [Louis-Marie Herbarium](#), based at the Laval University in Québec published 66,000 records of vascular plants from its collection of Arctic-alpine, subarctic and boreal plant species from Canada and the northern hemisphere. The [University of British Columbia Herbarium](#) published 22,000 records of fungi, which account for 95% of its collection. (<http://data.gbif.org/datasets/resource/14361>, <http://data.gbif.org/datasets/resource/14362>)

## UPCOMING EVENTS

### 14th Annual BIOECON Conference - Resource Economics, Biodiversity Conservation and Development

18-20 September 2012, Kings College, Cambridge, United Kingdom  
[More information...](#)

### 19th meeting of the GBIF Governing Board (GB19) and Science Symposium

16-21 September 2012, Lillehammer, Norway  
[More information...](#)

### Biodiversity Technologies Symposium

27-28 September 2012, University of Oxford, United Kingdom  
[More information...](#)

### PersistentIDs workshop

3 October 2012, Université Libre de Bruxelles, Brussels, Belgium  
[More information...](#)

### 11th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 11)

8-19 October 2012, Hyderabad, India  
[More information...](#)

### 2012 Biodiversity Information Standards (TDWG) annual conference

22-26 October 2012, Beijing, China  
[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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