POLICY BRIEF 5

EU BON POLICY BRIEF ON OPEN DATA

EU BON and OPEN ACCESS

The Group on Earth Observation's Biodiversity Observation Network, of which EU BON is a part, has a vision to better monitor and manage the global biosphere for our common good. This creates research challenges that require use of all appropriate data. Yet, access to data is impaired because, traditionally, few data are released, they are often locked up in traditional scientific literature, or because of concerns over intellectual property rights.

These limitations concern us. Alternative approaches are available. Major data repositories, such as GBIF for observational data and INSDC involving EMBL and Genbank for molecular data are so widely used that their absence would cripple research efforts in, for example, evolutionary research.

Because of this, EU BON endorses the free and open exchange of data and knowledge in accordance with the "Joint Declaration on Open Science for the 21st Century", especially in regard to scientific information produced in Europe as outlined by the European Commission.

Intellectual property rights on biodiversity data?

The inappropriate application of Intellectual Property rights (copyright) impedes access to scientific data. Copyright applies only to works that have an original, creative form of presentation. It does not cover ideas, nor content. Scientists increasingly use standardised formats for data, and because of their factual nature and non-creative form, scientific data and metadata do not qualify for copyright.

Copyright protection can apply to collections of biodiversity data under rare circumstances, but the more systematic and consistent with agreed standards that a data collection is, the less likely copyright considerations will apply.

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The EU BON data sharing policy

EU BON has adopted a Data Sharing Agreement that promotes free and open exchange of data with obligations and guarantees for data providers, members of EU BON, and users of the EU BON-network.

The primary obligation is that data providers refrain from asserting intellectual property rights on data. In the case of information covered by database protection or other intellectual property rights, data providers are expected to explicitly authorise the reproduction, distribution, and re-use of the data (by CC-0-Waiver or Open Data Commons Public-domain-declaration or with a CC-BY 4.0-License).

EU BON uses a category of "sensitive data" for data that relate to national or international security laws or to protect endangered species, or cultural resources. Sensitive data are kept separately and are made available only upon special justification.

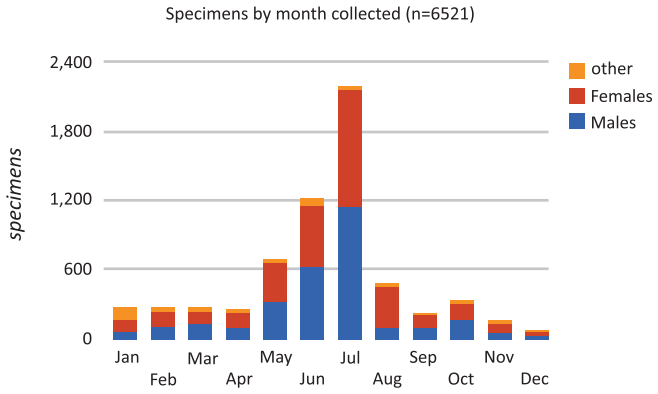
A special rule also applies to data under time embargos. These data are treated as sensitive until the period of embargo elapses.

EU BON does not assert any intellectual property rights. Anything that might qualify as works in the meaning of copyright is dedicated to the public domain (by CC-0-waiver) or made available under a CC-BY 4.0 License. All data may be reused for personal objectives, for scientific research, or for dissemination to government bodies and the public. EU BON attributes data to the data provider who served the data to EU BON.

Use cases

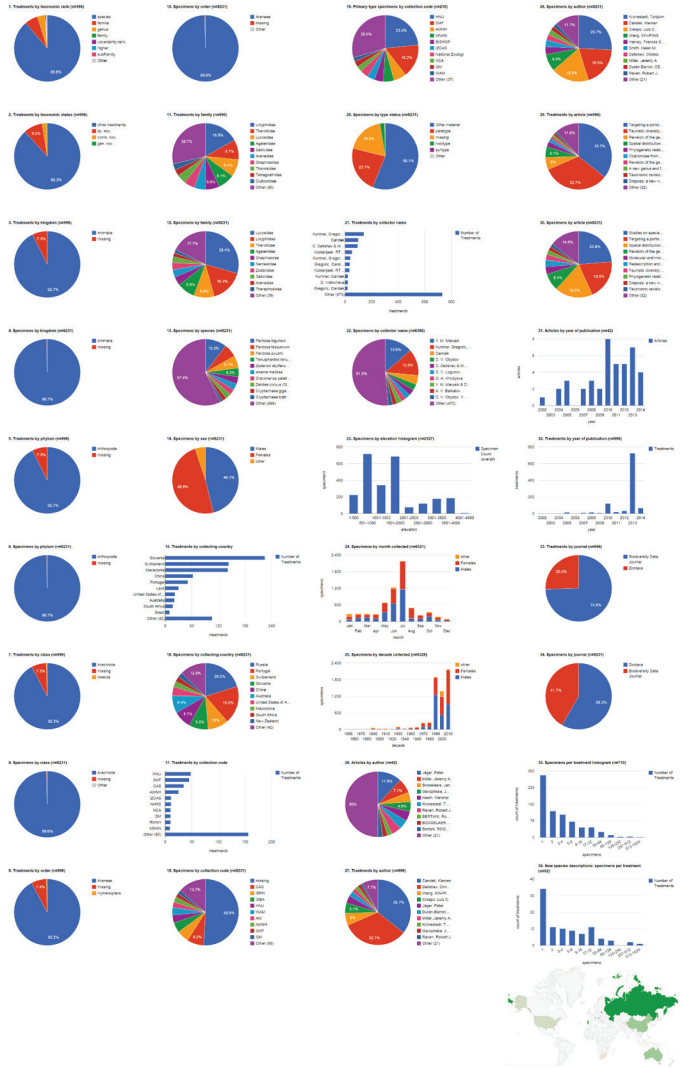
EU BON faces difficulties in monitoring invasive species because data are not freely available. Game-changing opportunities come with enhanced publication which, as implemented by Pensoft, involves open release of content designed for data sharing alongside publication. According the GBIF, the publication of species can take 25 years, and 80% of data are lost in 10 years. With enhanced publishing, a description of the spider *Crassignatha danaugirangensis* was published within a month of its discovery and the associated data were instantly (freely and openly) shared with other data environments such as GBIF, Encyclopedia of Life, and ZooBank.

Crassignatha danaugirangensis



Open data allows data from many papers to be combined, and repurposed for different analyses.

The Berlin Declaration states that in order to realise the vision of a global and accessible representation of knowledge, the future Web has to be sustainable, interactive, and transparent. Content and software tools must be openly accessible and compatible.



The EU BON OPEN ACCESS agenda

EU BON will promote best practices and re-use of data on 5 fronts.

Education

EU BON will publicise the benefits of open access to data. We will identify contradicting views as to Intellectual Property Rights and legal matters, and address them in clarifying reviews, in our own practices, and by improving overall awareness that intellectual property rights do not apply to data except in rare circumstances. We will ask scientists to refrain from claiming IP rights. We will identify categories of data that are collected and published using discipline-wide conventions and that cannot be subject to copyright, as has already been done with the 'Blue List' for taxonomic information .

The Budapest Open Access Initiative was developed by the Open Access movement, to provide the public with unrestricted, free access to scholarly research much of which is publicly funded. Making the research publicly available to everyone free of charge and without most copyright and licensing restrictions will accelerate scientific research efforts and allow authors to reach a larger number of readers.

Social practices

Open Data and data re-use require changes to social practices among scientists. EU BON will publicise the Hague, Bouchout, Berlin and Budapest Declarations, promote compliance, and seek to overcome any impediments to their adoption. EU BON will make its data, excepting sensitive and embargoed data, freely and openly available for scientific research. Data and information that qualify as works in the sense of copyright will be dedicated to the public domain.

Infrastructure

EU BON will play an active role in the design, development and implementation of the infrastructure to improve access to data. Our model is a 'nodal infrastructure' similar to that achieved by GBIF and GenBank. A node takes responsibility for discovery and registration of data sources; acquisition of data, their curation and preservation; adding universally unique identifiers; standardising content; and making the data freely and openly available to individuals and machines. Nodes promote new methods and tools for compliance, analysis, and visualisation of biodiversity and ecosystem information. Nodes develop protocols and standards to form cross-walks with other nodes. For resource efficiency, EU BON will build on existing infrastructures, and engage Libraries, Museums, and Data Centres.

Annotation, a latecomer to biodiversity data, exploit universally unique identifiers for every data item to allow users of data to provide feedback on the quality

GROUP ON EARTH OBSERVATIONS

Contacts

Willi Egloff

Plazi, Switzerland

egloff_bader@bluewin.ch

Donat Agosti

Plazi, Switzerland

agosti@plazi.org

David Patterson

Plazi, Switzerland

djpmapleferryman@gmail.com

Lyubomir Penev

Pensoft Publishers, Bulgaria

penev@pensoft.net

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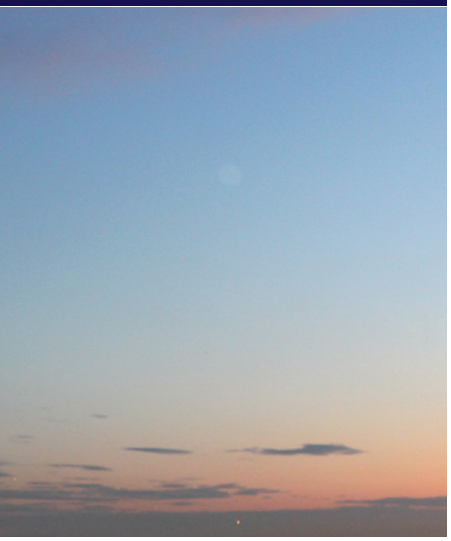

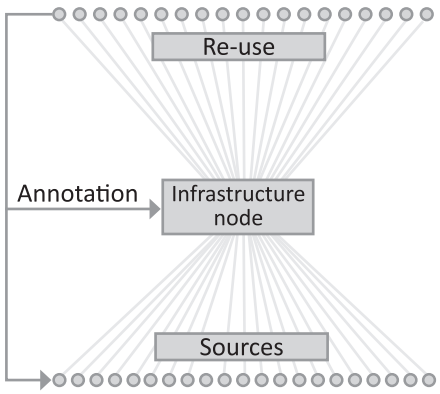

A nodal model for information infrastructure.

and completeness of data. Annotation can track use and reuse of content, and deliver usage metrics to sources and intermediaries.

Legislation

The legal framework for Open Access, databases, and security of data differ from country to country. EU-BON will identify inconsistencies and promote consistency of implementation across the EU.

The Hague Declaration aims to foster agreement about how to best enable access to facts, data and ideas for knowledge discovery in the Digital Age. By removing barriers to accessing and analysing the wealth of data produced by society, we can find answers to great challenges such as climate change, depleting natural resources and globalisation.

The Bouchout Declaration for Open Biodiversity Knowledge Management. The purpose of the Bouchout Declaration is to help make digital data about our biodiversity openly available. It offers members of the biodiversity community a way to demonstrate their commitment to open science.

Outlook

The success of the EU BON agenda to improve predictions, management and better policy development depends on free and open access to data from individuals, programmes, organisations, governments, intergovernmental agencies and legislative bodies. We will promote enthusiastic sharing of data.

We will monitor adoption of the principles of the Bouchout, and Berlin and Hague Declarations and the Budapest initiative on data access and mining. We will address hesitancy for compliance. We will promote a better understanding of the legal framework for data re-use, and seek greater harmony across the EU. We will ensure that credit is given to all who play a key role in data creation and availability. We will work with museums and libraries to promote their roles as data custodians. These developments will improve the impact, relevance, scope, and quality of research of EU BON's 30 partners, with better flow from monitoring organisations to policy makers, and with an increasing role for LifeWatch infrastructures and national biodiversity data centres.