



NEWSLETTER

Issue 8



Images: Mihai Temsila, Wanetta Ayers, Johannes Penner



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Welcoming words by the EU BON coordinator

Join us for our Final Meeting!

Dear Colleagues and Friends,

Just before our final meeting, we are now proud to present the eighth issue of our bi-annual newsletter, packed with news about EU BON's key products, events and publications.

EU BON is almost at its end, and we are more than happy to be able to present a wide range of products embedded in the first of its kind European Biodiversity Portal, launched by the project.

Some of our key flagships include PlutoF, GBIF Integrated Toolkit, EU BON Unified Taxonomic Information Service (UTIS), DINA, AquaMaps, GeoCAT, GoldenGate Imagine, TreatmentBank, and ARPHA Data Publishing Toolbox. You can read more about the portal and EU BON products on pages 3 to 6 of this newsletter.

Being part of the European Commission's area at the 2016 GEO XIII Plenary in St. Petersburg we had the opportunity to showcase these latest products to the community as well as provide live demonstrations of the beta-version of our European Biodiversity Portal.

In the course of the last six months, we have also conducted a series of workshops, not only to discuss and present the project's work and achievements, but also to share knowledge and train interested stakeholders. Among these a key workshop was the 4th EU BON Stakeholder Roundtable, where the main topic for discussions was securing the future of the European Biodiversity Observation Network.

To ensure longevity and re-usability of our results we have also started a dedicated EU BON collection in the innovative open access journal Research Ideas and Outcomes (RIO). Within this open science project you can see some key reports and outputs already published, and many more are to follow in the next few months. Find out more on page 9.

Read about our latest developments and final products in the eighth and final issue of our newsletter.

With best wishes and many thanks for all your support, from the entire EU BON team,

Christoph Häuser & Anke Hoffmann

EU BON website: www.eubon.eu





Hot from the project

EU BON's European Biodiversity Portal & Key Products

In the previous issue of our newsletter we proudly presented our [European Biodiversity Portal](#). The service was set to provide all interested parties with a professional database platform containing a large amount of implications. For

example, coordinators can receive information about related monitoring programs in different countries.

Aimed at supporting the biodiversity science and policy interface, the unique online platform provides relevant biodiversity information and access to insights in biodiversity trends and modelling through visualisation modules and infographics.

Watch our [video](#) to learn more about it:



As a gateway to European biodiversity information, the portal connects a vast number of biodiversity data repositories to capture an exceptional level of coverage in biodiversity data. These include the Global Biodiversity Information Facility (GBIF), Long-Term Ecological Research Network (LTER), EU-wide monitoring methods and systems of surveillance for species and habitats of community interest (EuMon), the Pan European Species directories Infrastructure that provides taxonomic information on species (PESI), and Global Earth Observation System of Systems (GEOSS).

The analytical tools interface allows insights into the complexity of biodiversity information, whilst delivering

synthesised, actionable facts and insights, illustrated by informative graphic content. For example, access to data sets which support the identification of Essential Biodiversity Variables (EBVs) improve forecasting and the development of early warning systems, aiding policy makers to develop evidence-based conservation strategies, while providing clear visualisation of priority issues to mobilise public support for their implementation. Also, a specific section of the biodiversity portal is dedicated to provide information and tools for citizen scientists via the EU BON Citizen Science Gateway.

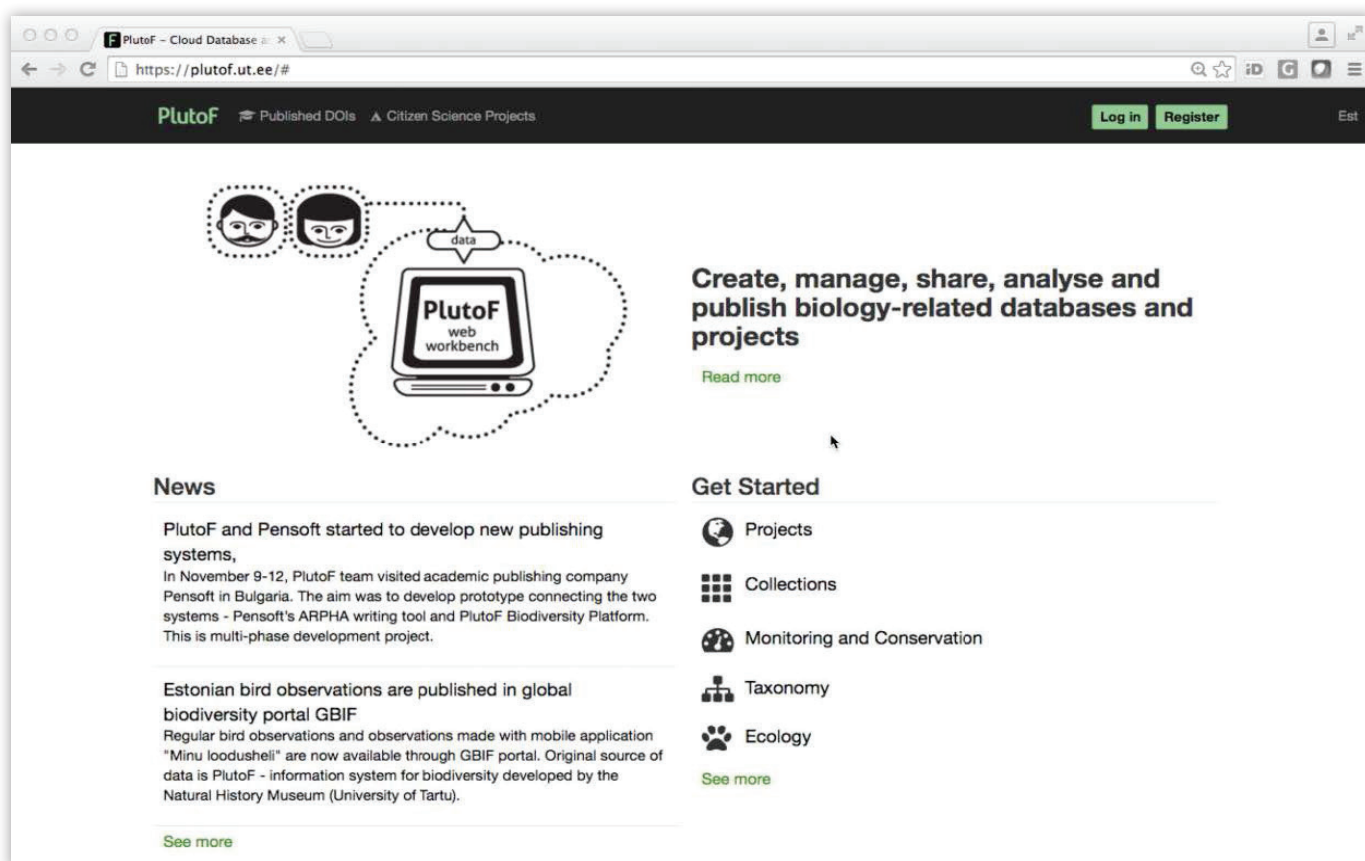


Here is a list of some **Key EU BON Products**, featured on our Portal:

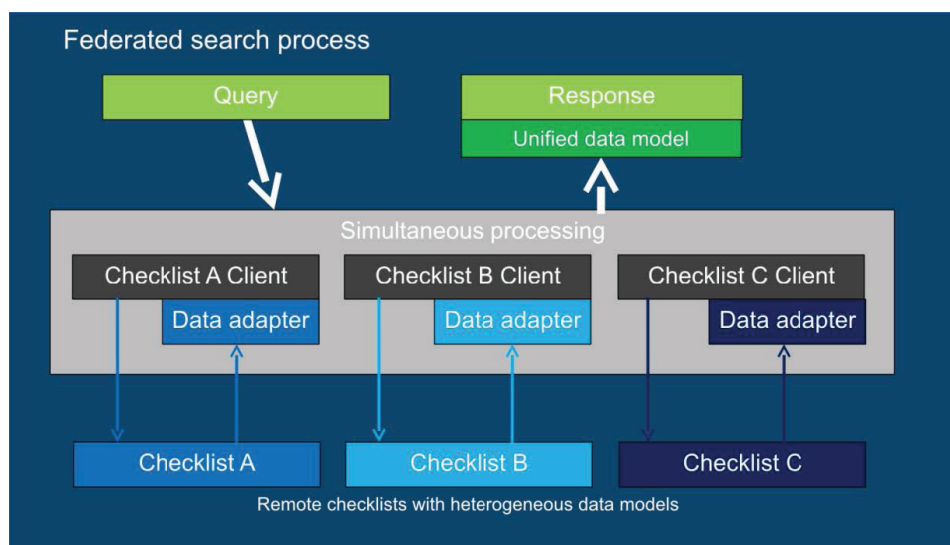
PlutoF provides a cloud database and computing services for the biology and related disciplines. The purpose of the platform is to provide synergy through common modules

for the taxon occurrences, classifications, geography, projects, agents, and analytical tools.

The advantage of PlutoF is that all data are automatically linked and therefore can be searched, analysed and published as a unified dataset.



The **EU BON** taxonomic backbone is an instance of the **Unified Taxonomic Information Service (UTIS)** which is publicly available at <http://cybertaxonomy.eu/eu-bon/utis>. By building the EU BON taxonomic backbone on the foundations of the Data Refinement Workflow library, EU BON can benefit from optimisations and implementations made by BioVeL and vice versa.





AquaMaps is an approach to generating model-based, large-scale predictions of where aquatic species occur naturally. The modelling approach uses species occurrence data coupled with expert knowledge to estimate species tolerances with respect to depth, sea temperature, salinity, primary production, sea ice concentration and distance to land, as predictors of species presence.

Predictions, expressed as probabilities of species occurrence, are generated by matching species tolerances against observed local environmental conditions to determine the relative suitability of an area for a species. These probabilities are illustrated through color-coded species range maps in half-degree latitude and longitude cell resolution.



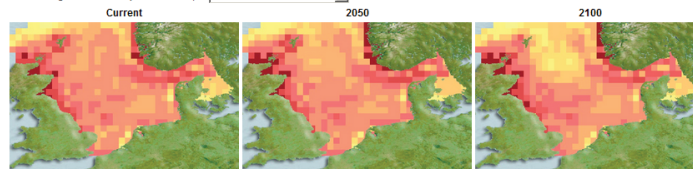
Possible climate change impact on bony fish diversity in Large Marine Ecosystems (LMEs)



This tool illustrates the possible climate change impact on bony fish community composition, for a number of EU-relevant LMEs. It shows (modelled) present time species diversity, as well as species diversity predictions for the years 2050 and 2100, based on IPCC (Intergovernmental Panel on Climate Change) A2 emissions scenario.

[Predicted change by year 2050](#) | [Predicted change by year 2100](#) | [Close window](#)

Select a large marine ecosystem in Europe: **North Sea**

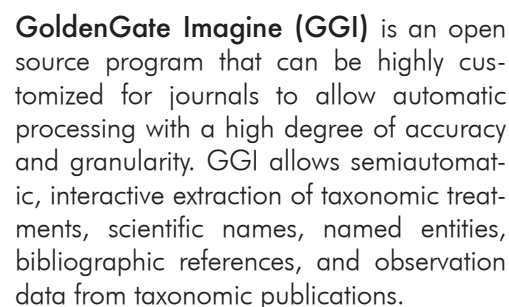


| Species No. |
|-------------|
| 145 - 165 |
| 130 - 144 |
| 115 - 129 |
| 100 - 114 |
| 85 - 99 |
| 70 - 84 |
| 55 - 69 |
| 40 - 54 |
| 25 - 39 |
| 9 - 24 |

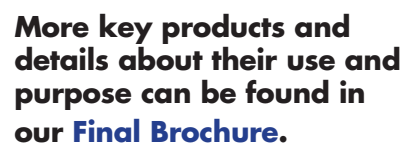
| | Number of bony fish species with > 50% probability of finding suitable habitat and environmental conditions in the North Sea | Species losing habitat | Species gaining habitat | Total rate of change in species composition |
|-----------|--|------------------------|-------------------------|---|
| Current | 177 | | | |
| Year 2050 | 188 | 8 | 19 | 15.3% |
| Year 2100 | 194 | 13 | 30 | 24.3% |

The North Sea has about 516 half-degree cells in its jurisdiction, covering an ocean area of about 709,434 km².

GeoCAT is an open source, browser-based tool that performs rapid geospatial analysis to ease the process of Red Listing taxa. Developed to utilise spatially referenced primary occurrence data, the analysis focuses on two aspects of the geographic range of a taxon: the extent of occurrence (EOO) and the area of occupancy (AOO). These metrics form part of the IUCN Red List categories and criteria and have often proved challenging to obtain in an accurate, consistent and repeatable way.



The **EU BON's Toolbox for Scholarly Publishing and Dissemination of Biodiversity Data** (ARPHA-BioDiv) is a set of standards, guidelines, recommendations, tools, workflows, services, and journals, based on the ARPHA Journal Publishing Platform of Pensoft, designed to ease scholarly publishing of biodiversity and biodiversity-related data that are of primary interest to EU BON and GEO BON networks.





EU BON's Final Meeting

Taking place from 14 to 16 March 2017, the Final Meeting of EU BON is a unique opportunity for stakeholders and other interested parties to get a hands-on experience of some of the project results and tools mentioned above.

The event, hosted at the Royal Belgian Institute of Natural Sciences (RBINS) in Brussels and the Bouchout Castle at the Botanic Garden Meise, has as its main objective

to present major project results and demonstrate the European Biodiversity Portal and its adjacent tools.

The first day of the meeting is dedicated to keynote speeches, where attendees can get an overview of EU BON and its main research areas and results. During the following two days, workshops and trainings are carefully designed to get stakeholders acquainted with data management and collected standards developed by the project and give everyone a chance to have a real experience of the tools developed within EU BON.



EU BON events

The Future of the European Biodiversity Observation Network: 4th EU BON Stakeholder Roundtable

The 4th EU BON Stakeholder Roundtable took place on 17 November 2016 in the Museum für Naturkunde in

Berlin. Focused on the topic "Pathways to sustainability for EU BONs network of collaborators and technical infrastructure" the 35 participants discussed key questions with regards to the sustainability of the EU BON network and products, and shared their rich expertise, coming from different backgrounds ranging from science to policy.

The Roundtable brought together key European users and stakeholders, such as the European Environment Agency, UNEP GRID, and the GEO secretariat.



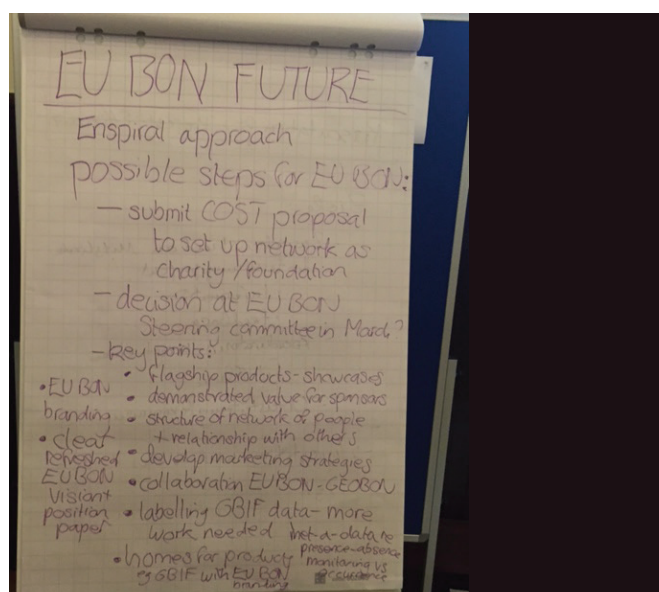
Credit: Florian Wetzel

While former Roundtables addressed European policy, citizen science and the link to practitioners, this final EU BON Stakeholder event discussed the future and sustainability of the European biodiversity observation network and its products and tools.

Key questions for the participants were:

- How can the many different EU BON products be sustained and further developed after the project ends in May 2017?
- Which institutions will host the products in the future and what key products could be further developed by EU BON to meet European and global policy and research needs (e.g. for monitoring, reporting)?
- How can a European Biodiversity Network as a whole be sustained in order to serve as a central infrastructure and pool of expertise for generating biodiversity data and information on a European scale?
- The report from the meeting was officially published in **RIO Journal** as a part of the dedicated **EU BON outputs collection**:

Wetzel, F., Despot Belmonte, K., Bingham, H., Underwood, E., Hoffmann, A., Häuser, C., Mikolajczyk, P. & Vohland, K. (2017) 4th European Biodiversity Observation Network (EU BON) Stakeholder Roundtable: Pathways to sustainability for EU BONs network of collaborators and technical infrastructure. Research Ideas and Outcomes 3: e11875. <https://doi.org/10.3897/rio.3.e11875>.





EU BON at international meetings

Presenting latest products and outcomes: a successful GEO XIII Plenary for EU BON

The **GEO XIII Plenary** in St. Petersburg, Russian Federation, enjoyed a huge interest and support from many member governments, agencies and networks with around 400 registered participants this year.

Having taken place from 7-10 November 2016, the event featured a plenary, a number of side events and an exhibition to give a chance to participants to meet up and discuss ideas and progress.

On the sidelines of the Plenary the Director-General of the DG Research and Innovation of the European

Commission, Robert-Jan Smits, personally informed himself in a conversation with Dr. Christoph Häuser, project lead of EU BON on the success and performance of the EU BON project.

At the GEO Exhibition 45 participating organizations and agencies presented their current achievements in the realm of earth observation products. EU BON was part of the European Commission's area where GEO-related projects were shown. The project showcased its latest products as well as provided live demonstrations by Dr. Hannu Saarenmaa of the beta-version of the European Biodiversity Portal.

Taking place just before the plenary, around 20 side events gave an interesting overview of current GEO-related projects and topics. One of the side events was targeted on citizen science and EU-funded projects, where EU BON's coordinator Christoph Häuser presented the developments of the network with regards to its citizen science activities, particularly its developments of mobile apps for collecting citizen science data.



The EU BON booth at the GEO exhibition - F. Wetzel, C. Häuser, H. Saarenmaa;



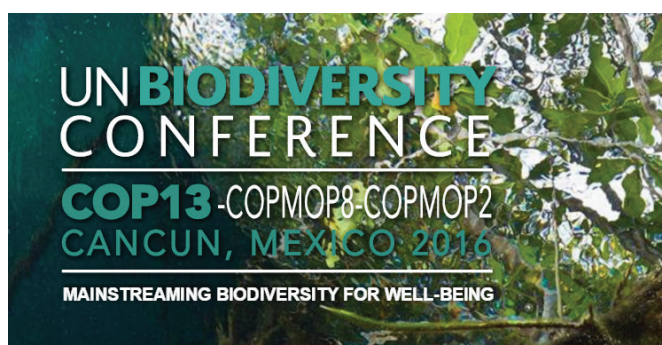
Director-General of the DG Research and Innovation of the European Commission R.J. Smits and Christoph Häuser; Credits: F. Wetzel.

Christoph Häuser presenting citizen science related activities of EU BON; Credit: F. Wetzel.



EU BON at CBD's 13th Conference of the Parties (COP)

The Convention on Biological Diversity (CBD) governing body, the Conference of the Parties (COP) advances the implementation of the Convention through decisions it takes at its periodic meetings. The 13th COP meeting took place from 4 to 17 December 2016 in Cancun, Mexico, focusing on the theme of mainstreaming biodiversity.



Emphasis was put on the integration of the conservation and sustainable use of biodiversity, particularly in the agriculture, forestry, fisheries and tourism sectors. Around 10,000 participants, including representatives from party countries, observer countries, international organisations and other stakeholders met to negotiate agreements and commitments to support the implementation of the CBD Strategic Plan 2011-2020 and the Aichi Biodiversity Targets.

EU BON was represented at the conference by our partner UNEP-WCMC, who had the opportunity to highlight how they have worked with the international community on mainstreaming and also on the importance of building positive links across different conventions and treaties.

EU BON publications

Measuring Rao's Q diversity index from remote sensing: An open source solution

Measuring biodiversity can benefit greatly when remote sensing data comes into the equation. A new EU BON related paper, published in the journal *Ecological Indicators*, proposes open source solutions for measuring the important Rao's Q index, when it comes to remote sensing data.

Original Source:

Rocchini, D., Marcantonio, M. & Ricotta, C. (2017). Measuring Rao's Q diversity index from remote sensing: an open source solution. *Ecological Indicators*, 72: 234-238. [5years-IF: 3.649]

doi: [10.1016/j.ecolind.2016.07.039](https://doi.org/10.1016/j.ecolind.2016.07.039)

Biophysical Characterization of Protected Areas Globally through Optimized Image Segmentation and Classification

A new EU BON derived paper, published recently in the journal *Remote Sensing*, introduces eHabitat+, a habitat modelling service supporting the European Commission's Digital Observatory for Protected Areas.

Original Source:

Martínez-López, J., Bertzky, B., Bonet-García, F.J., Bastin, L. & Dubois, G. (2016). Biophysical Characterization of Protected Areas Globally through Optimized Image Segmentation and Classification. *Remote Sensing*, 8: 780.

doi: [0.3390/rs8090780](https://doi.org/10.3390/rs8090780)

Citizen science might be voluntary but results are not always open: Recommendations to improve data openness

Being voluntary, citizen science work is often automatically assumed to also be openly available. Contrary to the expectations, however, a recent study of the datasets available from volunteers on the Global Biodiversity Information Facility (GBIF) proves to be among the most restrictive in how they can be used.

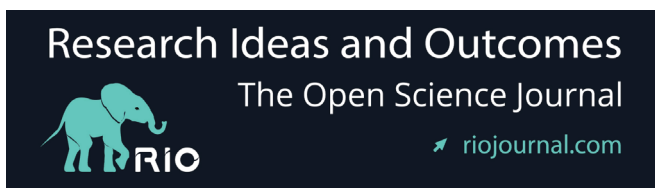
In a recent commentary paper, published in the *Journal of Applied Ecology*, EU BON partners suggest ways to improve data openness. According to the researchers citizen scientists should be recognised in ways that correspond with their motivations, in addition it is advisable that organisations that manage these data should make their data sharing policies open and explicit.



Original Source:

Groom, Q., Weatherdon, L. & Geijzenborffer, I. (2016). Is citizen science an open science in the case of biodiversity observations? *Journal of Applied Ecology*.
doi: [10.1111/1365-2664.12767](https://doi.org/10.1111/1365-2664.12767)

Look out for new articles in EU BON's collection at RIO Journal!



The mission of RIO is to catalyse change in research communication by publishing ideas, proposals and outcomes. EU BON's pioneering Open Science project, together with RIO Journal features a unique **project outputs compilation**, taking advantage of the journal's unique option to publish **collections of project results**. Up to now EU BON has published a total of 13 unconventional outputs:

A research presentation discussing the route "**From Open Access to Open Science from the viewpoint of a scholarly publisher**" which was presented by EU BON's partner Prof. Lyubomir Penev as part of the iDiv Seminar Series at the Biodiversity Informatics Unit of the German Centre for Integrative Biodiversity Research (iDiv).

A recently published factsheet - "**Cartograms tool to represent spatial uncertainty in species distribution**" - is the beginning of a series of planned publications to feature some of EU BON's most exciting final products.

Follow the **EU BON Collection** as more exciting outputs are yet to come!

Future events of interest

GEO Data Providers Workshop

The GEO Data Providers Workshop will take place from 20-21 April 2017 in Florence, Italy.

The First GEO Data Providers workshop was held as a side event during the GEO-XIII Plenary in St. Petersburg, to strengthen the dialogue with data providers in order to improve the discoverability, accessibility and usability of GEOSS resources by GEOSS users. Given the high level of interest and success of the first workshop, a more comprehensive event of two days will be hosted by the Italian, National Research Council (CNR) in Florence, Italy, in collaboration with the European Space Agency (ESA).

More information [here](#).

11th GEO European Project Workshop 2017

The 11th GEO European Projects Workshop will take place in Helsinki, Finland, between 19-21 June 2017.

The purpose of the conference is to bring together European stakeholders interested in and actively contributing to the Global Earth Observations System of Systems (GEOSS). The event is a forum to exchange ideas and inform participants about work and initiatives undertaken in the context of GEOSS.

More information to follow [here](#).

Earth Observations Summit 2017

This Earth Observation Summit 2017 is an international event to be held in Montréal from 20-22 June 2017. It aims to assemble several communities interested in Earth Observation (EO), its technologies, its applications and its societal benefits.

The EO Summit 2017 brings together in one exceptional event the 38th Canadian Symposium on Remote Sensing (CSRS), the 17th Congress of the Association Québécoise de Télédétection (AQT) and the 11th Advanced SAR (ASAR) Workshop.

Details available on the event's [website](#).



EU BON Website & Contacts:

For more information on the project, please visit the EU BON website at:
<http://www.eubon.eu/>

EU BON's website will be maintained and available to explore for at least five years after the project's end.

Contacts:

Dr. Christoph Häuser



Project Coordinator

Museum für Naturkunde

Leibniz Institute for Research on Evolution and
Biodiversity

Invalidenstrasse 43

10115 Berlin

Germany

Tel.: +49 (0)30 2093 8479

Fax: +49 (0)30 2093 8561

E-mail: christoph.haeuser [at] mfn-berlin.de

Dr. Anke Hoffmann



Project Manager

Museum für Naturkunde

Leibniz Institute for Research on Evolution and
Biodiversity

Invalidenstrasse 43

10115 Berlin

Germany

Tel.: +49 (0)30 2093 8950

Fax: +49 (0)30 2093 8323

E-mail: anke.hoffmann [at] mfn-berlin.de