

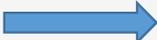
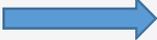
# Diversity Workbench data management system

Tanja Weibulat

Expert Workshop on GBIF Data  
Publication in Africa, 11.10.2023



# Technical documentation at a glance

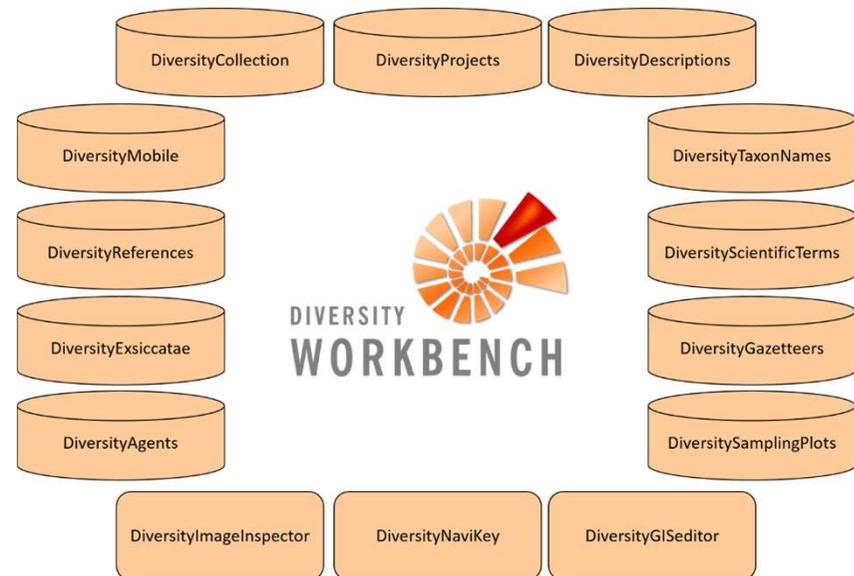
<b>Name and mission of the database framework</b>	Diversity Workbench (DWB)
<b>Software</b>	Diversity Workbench Suite of database applications with client interfaces and supporting data processing tools
<b>DWB first contact persons</b>	T. Weibulat and D. Triebel at the SNSB IT Center <a href="#">↗</a>
<b>Operating system server</b>	MS Windows Server 2012 R2 to MS Windows Server 2019; see Info in <a href="#">Wikipedia en</a> <a href="#">↗</a> and <a href="#">Wikipedia de</a> <a href="#">↗</a>
<b>Database system</b> 	MS SQL-Server 2014 to MS SQL-Server 2017 or MS SQL-Server Express; see Info in <a href="#">Wikipedia en</a> <a href="#">↗</a> and <a href="#">Wikipedia de</a> <a href="#">↗</a>
<b>Clients</b>	C# desktop applications (local clients), PWA – Progressive Web Application DiversityNaviKey (browser-based), several web APIs
<b>Operating system local clients</b>	MS Windows 8 to MS Windows 11; see Info in <a href="#">Wikipedia en</a> <a href="#">↗</a> and <a href="#">Wikipedia de</a> <a href="#">↗</a>
<b>GIS functionalities</b>	DiversityGisEditor, management of geometry and geography data
<b>GUIs for data import</b>	Import Wizards, txt, CSV, xml in various schemes, xml/xslt, shapes in ESRI-Format
<b>GUIs for data export/ reports</b>	Export Wizards, txt, CSV, xml in various schemes, xml/xslt, shapes in ESRI-Format
<b>GUI language</b>	default: english (multilingual through translation tables)
<b>Open access</b> 	<a href="#">DWB software download</a>
<b>Open source</b> 	<a href="#">DWB SVN code repository</a> <a href="#">↗</a> , <a href="#">SNSB DWB GitHub repository</a> <a href="#">↗</a> ; see also <a href="#">DWB code statistics</a>
<b>Licenses</b>	<a href="#">GNU General Public License 3.0 – GPLv3</a> <a href="#">↗</a>
<b>Information models online</b>	<a href="#">DWB data models and dwb database schemes</a>
<b>State of development</b> 	since 1999, ongoing
<b>Code language, developer platform</b>	C#, .Net Framework 4.8 (.Net Framework 3.5 for older client software); see Info in <a href="#">Wikipedia en</a> <a href="#">↗</a> and <a href="#">Wikipedia de</a> <a href="#">↗</a>
<b>User manuals and videos</b>	under <a href="#">DWB user manuals</a> , <a href="#">DWB video tutorials</a> and with the download of the respective applications in the <a href="#">DWB Wiki</a>
<b>Training</b>	<a href="#">DWB workshops</a> <a href="#">↗</a> and <a href="#">Training materials</a> for basic users, intermediate, advanced, expert users and database administrators
<b>ELIXIR bio.tools</b>	<a href="#">DWB software in bio.tools</a> <a href="#">↗</a> : Technical profile of DWB tools

[https://diversityworkbench.net/Porta/Technical\\_documentation\\_at\\_a\\_glance](https://diversityworkbench.net/Porta/Technical_documentation_at_a_glance)

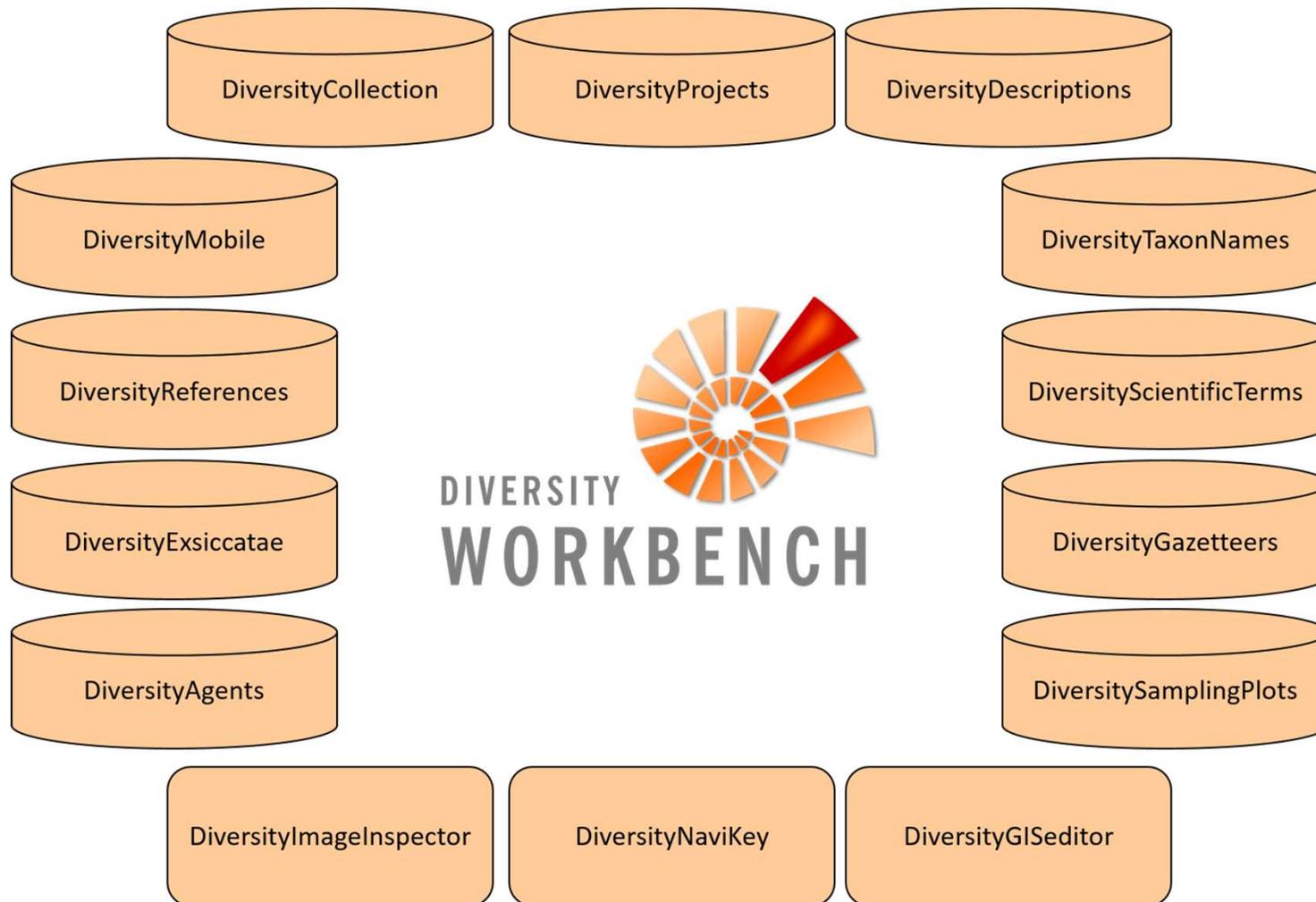


# DWB Software development and training

- 3 software developers in Munich
- DWB documentation and training is offered
- by 5 NHCs / GBIF Germany subnodes
  - SNSB, LIB/ZFMK, SMNK, SMNS
- and via NFDI4Biodiversity



# DWB Modules



# DiversityProjects

- Management of metadata of research projects and data sets defined and used by modules of the Diversity Workbench
- Designed to document information about the data sets, their relations and hierarchy
- All metadata on data set level are processed here, e.g. data set provenience, descriptions, responsible agents, licenses

The screenshot displays the DiversityProjects v. 4.1.59 application. The interface is divided into several sections:

- Left Panel:** A tree view showing a hierarchy of projects under 'BSMcoll'. The selected project is 'BSMeryscoll'.
- Central Panel:** A detailed view of the selected project. It includes a title, a description (in German), a URI, and a version field. The description mentions the collection of Mehltauipilze (Erysiptales) at the Botanische Staatssammlung München.
- Bottom Panel:** A section for 'Agents' showing a list of roles and their associated information. The roles listed are 'Author', 'Content Contact', and 'Data Owner Contact', all associated with the name 'Triebel, D.'.

# DiversityProjects – Metadata in GBIF

The screenshot shows the GBIF Occurrence Dataset page for 'Occurrence Data of Vascular Plants collected or compiled for the Flora of Bavaria'. The page is titled 'OCCURRENCE DATASET | REGISTERED MAY 2, 2016'. The main heading is 'Occurrence Data of Vascular Plants collected or compiled for the Flora of Bavaria', published by 'Staatliche Naturwissenschaftliche Sammlungen Bayerns'. The page features a navigation bar with 'DATASET', 'METRICS', 'ACTIVITY', 'DOWNLOAD', and 'HOME PAGE'. A green bar indicates '7,183,903 OCCURRENCES' and '606 CITATIONS'. The main content area includes a URL: [https://wiki.bayernflora.de/web/Flora\\_of\\_Bavaria\\_-\\_occurrence\\_data\\_online](https://wiki.bayernflora.de/web/Flora_of_Bavaria_-_occurrence_data_online), the 'FLORA VON BAYERN' logo, and metadata: 'Metadata last modified: March 16, 2021', 'Hosted by: Staatliche Naturwissenschaftliche Sammlungen Bayerns', 'Licence: CC BY 4.0', and a DOI: [10.15468/ocsi62h](https://doi.org/10.15468/ocsi62h). A sidebar on the left lists 'Description', 'Contacts', 'Data description', 'GBIF registration', and 'Citation'. The 'Description' section repeats the URL. The 'Contacts' section lists 'Staatliche Naturwissenschaftliche Sammlungen Bayerns – SNSB IT Center, München' as the technical point of contact and 'AG Flora von Bayern' as the administrative point of contact.

Get data How-to Tools Community About

OCCURRENCE DATASET | REGISTERED MAY 2, 2016

## Occurrence Data of Vascular Plants collected or compiled for the Flora of Bavaria

Published by [Staatliche Naturwissenschaftliche Sammlungen Bayerns](#)

DATASET METRICS ACTIVITY DOWNLOAD HOME PAGE

7,183,903 OCCURRENCES 606 CITATIONS

[https://wiki.bayernflora.de/web/Flora\\_of\\_Bavaria\\_-\\_occurrence\\_data\\_online](https://wiki.bayernflora.de/web/Flora_of_Bavaria_-_occurrence_data_online)

 **Metadata last modified:** March 16, 2021  
**Hosted by:** [Staatliche Naturwissenschaftliche Sammlungen Bayerns](#)  
**Licence:** [CC BY 4.0](#)  
[How to cite](#) [DOI](#) [10.15468/ocsi62h](https://doi.org/10.15468/ocsi62h)

**Description**

[https://wiki.bayernflora.de/web/Flora\\_of\\_Bavaria\\_-\\_occurrence\\_data\\_online](https://wiki.bayernflora.de/web/Flora_of_Bavaria_-_occurrence_data_online)

**Contacts**

Staatliche Naturwissenschaftliche Sammlungen Bayerns – SNSB IT Center, München	AG Flora von Bayern
Technical point of contact <a href="mailto:snsb-it-center@snm.de">snsb-it-center@snm.de</a>	Administrative point of contact <a href="mailto:bayernflora@snsb.de">bayernflora@snsb.de</a>



# DiversityCollection

- Management of collection and observation data
- To document data about
  - collection events
  - collection objects/ observations
  - experiments and analyses
  - object transfer/ exchange
  - preparation and storage of specimens
  - multimedia files
- Labels can be printed
- Distribution maps can be created

The screenshot shows the DiversityCollection v. 4.4.6 software interface. The main window displays a fossilized fish specimen (Turboesodon relegans) with a scale bar and a color calibration chart. The interface includes a sidebar with a list of specimens (JME-ETT-00098 to JME-ETT-00127), a central panel with specimen details (Acc. Nr. JME-ETT-00119, Species: Turboesodon relegans Poyato-Ariza & Wenz, 2004), and a right-hand panel with metadata (Type: IPR, EXIF, License: CC BY-SA 4.0, URI: https://creativecommons.org/licenses/by-sa/4.0/). A bottom panel shows a tree view of collection events and a 'Notes' section.

# DiversityCollection Data in GBIF

The screenshot displays the GBIF Occurrence Data of Vascular Plants interface. The main heading is "Occurrence Data of Vascular Plants". Below the heading, there are navigation links: DATASET, METRICS, ACTIVITY, DOWNLOAD, and HOME PAGE. A search bar is present, and the search results show 7,183,903 occurrences with a 100% match rate. The interface includes a map showing georeferenced records and a table of occurrence data.

Scientific name	Country or area	Coordinates	Month & year	Occurrence status	Basis of record
<i>Crocus sieberi</i> subsp. <i>sublimis</i> (Herb.) B.Ma...	Germany	48.8N, 13.3E	2023 March	Present	Preserved s
<i>Tsuga heterophylla</i> (Raf.) Sarg.	Germany	48.4N, 11.7E	2022 February	Present	Human obs
<i>Asperugo procumbens</i> L.	Germany	49.8N, 9.9E	2022 March	Present	Human obs
<i>Campanula rapunculoides</i> L.	Germany	49.8N, 9.9E	2022 March	Present	Human obs
<i>Corydalis cava</i> (L.) Schweigg. & Körte	Germany	49.8N, 9.9E	2022 March	Present	Human obs
<i>Ficaria</i> Huds.	Germany	49.8N, 9.9E	2022 March	Present	Human obs
<i>Parietaria judaica</i> L.	Germany	49.8N, 9.9E	2022 March	Present	Human obs
<i>Gagea lutea</i> (L.) Ker Gawl.	Germany	50.0N, 10.2E	2022 March	Present	Human obs
<i>Gagea minima</i> (L.) Ker Gawl.	Germany	50.0N, 10.2E	2022 March	Present	Human obs
<i>Gagea lutea</i> (L.) Ker Gawl.	Germany	50.0N, 10.2E	2022 March	Present	Human obs
<i>Gagea minima</i> (L.) Ker Gawl.	Germany	50.0N, 10.2E	2022 March	Present	Human obs
<i>Gagea pratensis</i> (Pers.) Dumort.	Germany	50.0N, 10.2E	2022 March	Present	Human obs
<i>Adoxa moschatellina</i> L.	Germany	50.0N, 10.4E	2022 March	Present	Human obs
<i>Corydalis cava</i> (L.) Schweigg. & Körte	Germany	50.0N, 10.4E	2022 March	Present	Human obs
<i>Pulmonaria obscura</i> Dumort.	Germany	50.0N, 10.4E	2022 March	Present	Human obs
<i>Holosteum umbellatum</i> L.	Germany	49.9N, 10.2E	2022 March	Present	Human obs

Tanja Weibulat, Expert Workshop on GBIF Data Publication in Africa, ITCER, Kenya, 11.10.2023



# Paper 2022 on Data managed in DiversityCollection

← → ↻ 🏠 <https://bdj.pensoft.net/article/87254/list/8/> 🌐 ⭐ 📄 📌 📧

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Software Description Biodiversity Data Journal 10: e87254 <https://doi.org/10.3897/BDJ.10.e87254> (14 Oct 2022)

**Software infrastructure and data pipelines established for technical interoperability within a cross-border cooperation for the flora of the Bohemian Forest**

▼ Petr Novotný, Stefan Seifert, Martin Rohn, Wolfgang Diewald, Milan Štech, Dagmar Triebel

**Abstract** ▲

**Background**

The timely and geographical resolutions, as well as the quantity and taxon concepts of records on the occurrence of plants near national borders is often ambiguous. This is due to the regional focus and different approaches of the contributing national and regional databases and networks of the neighbouring countries. Careful data transformation between national data providers is essential for understanding distribution patterns and its dynamics for organisms in areas along the national borders. Sharing occurrence data through the international data aggregator Global Biodiversity Information Facility (GBIF) is also complicated and has to consider that the underlying taxonomic concept and geographic information system of each single GBIF dataset might be different. In addition, some regional data providers have a restrictive (non-cc) licensing policy which does not allow data publication via the GBIF network. Therefore, it is necessary to investigate new ways to make data fit for use for a better and comprehensive understanding of the

Contents Article Info Cite Metrics Comment Related

Figs Tabs Taxa Refs Cited Nanopubs

Biodiversity Data Journal 10: e87254  
doi: 10.3897/BDJ.10.e87254

Received: 01 Jun 2022 | Approved: 04 Sep 2022 | Published: 14 Oct 2022

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<https://doi.org/10.3897/BDJ.10.e87254>



# Paper 2023 on Data managed in DiversityCollection

Published July 25, 2023 | Version v2 Presentation Open

## Was haben Mehлтаupilze mit digitaler Langzeitarchivierung zu tun?

Weibulat, Tanja<sup>1</sup> ; Schwartz, Anna Lisa<sup>2</sup> ; Seifert, Stefan<sup>1</sup> ; Schmalzl, Markus<sup>2</sup> ; Triebel, Dagmar<sup>1</sup>

[Show affiliations](#)

Vorstellung eines NFDI4Biodiversity-Kooperationsprojekts zwischen der Generaldirektion der staatlichen Archive Bayerns (GDA) und den Staatlichen Naturwissenschaftlichen Sammlungen Bayerns (SNSB) über die Langzeitarchivierung einer Datenbank der SNSB zum Management der Sammlung von Mehлтаupilz-Objekten.

### Files

Abstract\_GDA-SNSB\_SIARD.pdf

Seite: 1 von 1 Automatischer Zoom

**Was haben Mehлтаupilze mit digitaler Langzeitarchivierung zu tun?**

*Ein NFDI4Biodiversity-Kooperationsprojekt zwischen den Staatlichen Archiven und den Staatlichen Naturwissenschaftlichen Sammlungen Bayerns*

Die Generaldirektion der Staatlichen Archive Bayerns (GDA) und die Staatlichen Naturwissenschaftlichen Sammlungen Bayerns (SNSB) sind Teil des Konsortiums NFDI4Biodiversity. Das IT-Center der SNSB stellt sammlungsbezogene Daten zur Biodiversitätsforschung und open source Datenbank-Software zum Management von Geo- und Biodiversitätsdaten zur Verfügung. Die Staatlichen Archive Bayerns bringen neben historischen Biodiversitätsdaten ihre Kompetenzen im Bereich der Langzeitarchivierung (LZA) ein.

Beide Partner aus Bayern führen derzeit ein Pilotprojekt zur digitalen LZA aus relationalen Datenbanken im Produktionsbetrieb durch. Dazu verwenden sie den wertvollen Datenbestand

**82 VIEWS** **79 DOWNLOADS**

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### Versions

Version	Date
Version v2	Jul 25, 2023
Version v1	Jul 25, 2023

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**Cite all versions?** You can cite all versions by using the DOI 10.5281/zenodo.8182882. This DOI represents all versions, and will always resolve to the latest one. [Read more.](#)

### External resources

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OpenAIRE

### Communities

<https://doi.org/10.5281/zenodo.8268840>



# Paper 2023 on Data managed in DiversityCollection

Published September 28, 2023 | Version 1 Presentation Open

## Ready to answer questions about regional biodiversity change? Metrics of two large heterogeneous datasets of plant occurrences for visualization and analysis in GBIF and NFDI

Klasen, Birgit<sup>1</sup>; Wellsow, Julia<sup>1</sup>; Ruff, Marcel<sup>2</sup>; Weiss, Markus<sup>1</sup>; Seifert, Stefan<sup>1</sup>; Wendt, Ingo<sup>1</sup>; Triebel, Dagmar<sup>1</sup>; Kadereit, Gudrun<sup>3</sup> Show affiliations

In this presentation different metrics of two datasets of the flora of Bavaria with altogether 15 millions subunits representing single occurrence records are compared. Both datasets are managed in installations of the Diversity Workbench, transformed and provided as digital entities via data pipelines compliant with GBIF (<https://www.gbif.org/>) and NFDI4Biodiversity (<https://www.nfdi4biodiversity.org>).

### Files

Abstract\_Ready\_to\_answer-Metrics\_of\_two\_datasets\_final.pdf

Seite: 1 von 1 Automatischer Zoom

**Ready to answer questions about regional biodiversity change? Metrics of two large heterogeneous datasets of plant occurrences for visualization and analysis in GBIF and NFDI**

Authors: Birgit Klasen (presenting)<sup>1\*</sup>, Julia Wellsow<sup>2\*</sup>, Marcel Ruff<sup>4</sup>, Markus Weiss<sup>1</sup>, Stefan Seifert<sup>1</sup>, Ingo Wendt<sup>1\*</sup>, Dagmar Triebel<sup>2\*</sup> and Gudrun Kadereit<sup>3\*</sup>

Affiliations:

**42 VIEWS** **43 DOWNLOADS** Show more details

### Versions

Version 1 Sep 28, 2023  
10.5281/zenodo.8386845

**Cite all versions?** You can cite all versions by using the DOI 10.5281/zenodo.8386844. This DOI represents all versions, and will always resolve to the latest one. [Read more.](#)

### External resources

Indexed in

OpenAIRE

### Keywords and subjects

Flora of Bavaria Citizen Science  
Monitoring Data GBIF NFDI4Biodiversity

<https://doi.org/10.5281/zenodo.8386845>



# DiversityDescriptions

- Management of descriptive data
- To describe
  - traits with values of individual organisms and summarized data for taxa
  - characters of any research items (entities/ objects)
- Descriptions are characterized by a triple structure, e.g. 'item-descriptor-value'

The screenshot displays the DiversityDescriptions software interface for the organism *Aridibacter kavangonensis* Ac\_23\_E3. The main window shows a list of descriptors with columns for No., Type, and Descriptor name. The selected descriptor (No. 22) is 'Partial ribosomal sequence 16S', which is shown in detail on the right side of the interface, including its molecular sequence and associated metadata like 'Nucleotide Len: 1' and 'Post: 1506'.

No.	Type	Descriptor name
1	text	Determination of relationship
2	text	Domain
3	text	BacDive_ID
4	text	Culture medium name
5	quantitative	Enrichment culture temperature
6	text	Biosafety level/Risk group (German classification)
7	text	Closest relative name (Species and strain designation)
8	text	Description source reference
9	categorical	API 20NE Cupule 01 NO3
10	text	Phylum
11	text	Culture medium composition
12	text	Enrichment culture medium
13	categorical	Pathogenicity (human)
14	quantitative	Nucleotide identity
15	text	Strain history
16	text	PubMed ID
17	categorical	API 20NE Cupule 02 TRP
18	text	Subdivision
19	quantitative	NaCl range (salt tolerance)
20	text	Isolation Date
21	categorical	Pathogenicity (animal)
22	sequence	Partial ribosomal sequence 16S
23	text	Culture collection accession number
24	categorical	API 20NE Cupule 04 ADH(Arg)
25	quantitative	Temperature recommended
26	text	Isolation/enrichment procedure
27	categorical	Pathogenicity (plant)
28	quantitative	GC-content
29	categorical	API 20NE Cupule 05 URE
30	text	Class
31	text	Continent
32	text	GC-content method
33	categorical	API 20NE Cupule 06 ESC
34	text	Order
35	text	Coordinates GPS
36	text	Sequence database accession number

# DiversityDescriptions Data in GBIF

Upcoming...



# Paper 2023 on Data managed in DiversityDescriptions

The screenshot shows a web browser displaying a Cambridge Core article. The URL is <https://www.cambridge.org/core/journals/lichenologist/article/management-and-publication-of-scientific-d>. The page features the Cambridge University Press logo and navigation links. The article title is "Management and publication of scientific data on traditional mycological and lichenological knowledge in Africa", published online by Cambridge University Press on 22 September 2023. The authors listed are Tonjock Rosemary Kinge, Joyce Mnyazi Jefwa, Roël D. Houdanon, Héritier Milenge Kamalebo, Ahmed M. Abdel-Azeem, Marieka Gryzenhout, Dagmar Triebel, Tanja Weibulat, and Gerhard Rambold. The article is categorized as "Open access". The abstract text is partially visible, starting with "Africa is an important global reservoir for biological, cultural and traditional knowledge about fungi and lichens, which are used as food, medicine and in mythology, among other things. African human populations are undergoing highly significant changes and adaptation processes, which are accompanied by rapid urbanization, meeting with western civilization, high rural migration and the loss of natural ecosystems. Indigenous knowledge is being lost, including that concerning fungi and lichens. Ethnomycology and ethnolichenology provide a diversity of knowledge about beneficial and poisonous fungi and lichens, and give insights into their sociological impact on human behaviour and use. Here we present a working and publishing environment established with the Diversity Workbench software in line with".

<https://doi.org/10.1017/S0024282923000294>

Tanja Weibulat, Expert Workshop on GBIF Data Publication in Africa, ITCER, Kenya, 11.10.2023



# DiversityTaxonNames

- Management of taxonomic names and related information
- To document taxonomic names with nomenclature, accepted names, synonyms, classification, typification and common names
- Is appropriate to create taxon reference lists, checklists with geographical or nature conservation categories as well as with other parameters

The screenshot displays the DiversityTaxonNames software interface, version 4.2.1. The main window shows the taxonomic details for *Biatora sylvana* Körb. The interface is divided into several panels:

- Query results:** A list of taxonomic names, with *Biatora sylvana* Körb. selected.
- Taxonomic name:** Fields for Genus/supragen. (Biatora), Species epithet (sylvana), and other identifiers.
- Nomenclature:** Fields for Code, Status, and Creation type.
- Typification / Protologue:** Fields for Volume, Issue, Pages, and Details.
- Hierarchy:** A tree view showing the taxonomic classification from Sup.tax.: Biatora Fr. down to Biatora sylvana Körb.
- Synonymy:** A list of synonyms, including *Lecanora globulosa* (Förke) S. Y. Kondr.
- Synonymy overview:** A list of external data sources and references, including *Lecanora globulosa* (Förke) S. Y. Kondr. in *Kondrotvuk, Lököc, Fatkas, Jang, Liu, Haida, Persson, Hansson, Kämeffel, Thell & Hur, Acta Bot. Hung.* 61 (3-4): 303 (2019).

# DiversityTaxonNames

- Management of taxonomic names and related information
- To document taxonomic names with nomenclature, accepted names, synonyms, classification, typification and common names
- Is appropriate to create taxon reference lists, checklists with geographical or nature conservation categories as well as with other parameters

The screenshot displays the DiversityTaxonNames software interface, version 4.2.1, showing the taxonomic details for *Attagenus pello* (Linnaeus, 1758). The interface is divided into several panels:

- Left Panel:** A list of taxonomic names and a search filter section. The search filter includes fields for Name, Genus, Species, CreationTy, Rank, Status, Authors, Bas.auth, Comb.auth, Revision, Level, Accepted name, Presence, Geography, Place, Taxon list, and Analysis.
- Top Panel:** Taxonomic name details for *Attagenus pello*. It shows the Genus/supragen. as *Attagenus*, Species epithet as *pello*, and Author as *Linnaeus*. The Rank is set to *species*. The Year is 1758. There are fields for Nomenclature (Code: *Zoology*), Status, and Creation type.
- Middle Panel:** Taxonomic reference / Protologue table with columns for Volume, Issue, Pages, Details, D, M, Y, of P, and Suppl. Below this is a Hierarchy tree showing the classification: Animalia | Insecta | Coleoptera | Demestidae | Attagenus.
- Right Panel:** Typification and Common names. The common name is *Gefleckter Pelzkafer* (two-spot carpet beetle). The Name is *Gefleckter Pelzkafer*, Lang. is *German*, and Country is *Germany*. The Context is *IPM*. The Ref. is *Biebl 2020. Museumschaedlinge.*
- Bottom Panel:** Synonymy overview and External data sources. The synonymy overview shows *Attagenus pello* (Linnaeus, 1758) with a list of IPM occurrences. The external data sources include <https://www.wiki...> (Wikidata) and <https://www.gbif...> (GBIF Backbone Taxonomy).

# DiversityTaxonNames Data in GBIF

SEARCH DATASETS | 33 RESULTS

[Taxon list of fungi and fungal-like organisms from Germany compiled by the D...](#)

[http://www.diversitymobile.net/wiki/About\\_%22Taxon\\_list\\_of\\_fungi\\_and\\_fungal-like\\_organisms\\_from\\_Germany\\_compiled\\_by\\_the\\_DGfM%22](http://www.diversitymobile.net/wiki/About_%22Taxon_list_of_fungi_and_fungal-like_organisms_from_Germany_compiled_by_the_DGfM%22)

Published by Staatliche Naturwissenschaftliche Sammlungen Bayerns

32.676 records

[Taxon list of animals with German names \(worldwide\) compiled at the SMNS](#)

[http://www.diversitymobile.net/wiki/About\\_%22Taxon\\_list\\_of\\_animals\\_with\\_German\\_names\\_%29worldwide%29\\_compiled\\_at\\_the\\_SMNS](http://www.diversitymobile.net/wiki/About_%22Taxon_list_of_animals_with_German_names_%29worldwide%29_compiled_at_the_SMNS)

Published by Staatliche Naturwissenschaftliche Sammlungen Bayerns

18.224 records

[Taxon list of vascular plants from Bavaria, Germany compiled in the context of BFL project](#)

[http://www.diversitymobile.net/wiki/About\\_%22Taxon\\_list\\_of\\_vascular\\_plants\\_from\\_Bavaria\\_Germany\\_compiled\\_in\\_the\\_context\\_of\\_the\\_BFL\\_project](http://www.diversitymobile.net/wiki/About_%22Taxon_list_of_vascular_plants_from_Bavaria_Germany_compiled_in_the_context_of_the_BFL_project)

Published by Staatliche Naturwissenschaftliche Sammlungen Bayerns

14.175 records

[Taxon list of Hymenoptera from Germany compiled in the context of the GBOL](#)

[http://www.diversitymobile.net/wiki/About\\_%22Taxon\\_list\\_of\\_Hymenoptera\\_from\\_Germany\\_compiled\\_in\\_the\\_context\\_of\\_the\\_GBOL\\_pro](http://www.diversitymobile.net/wiki/About_%22Taxon_list_of_Hymenoptera_from_Germany_compiled_in_the_context_of_the_GBOL_pro)

Published by Staatliche Naturwissenschaftliche Sammlungen Bayerns

11.533 records | 1 citation

Get data | How-to | Tools | Community | About

CHECKLIST DATASET | REGISTERED OCTOBER 6, 2023

## Taxon list of pest organisms for IPM at natural history collections compiled at the SNSB

Published by [Staatliche Naturwissenschaftliche Sammlungen Bayerns](#)  
Biebl S • Novoa Sepúlveda C

DATASET | TAXONOMY | METRICS | DOWNLOAD | HOME PAGE

218 RECORDS

[https://www.diversitymobile.net/wiki/About\\_Taxon\\_list\\_of\\_pest\\_organisms\\_for\\_IPM\\_at\\_natural\\_history\\_collections\\_compiled\\_at\\_the\\_SNSB](https://www.diversitymobile.net/wiki/About_Taxon_list_of_pest_organisms_for_IPM_at_natural_history_collections_compiled_at_the_SNSB)

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[How to cite](#) [DOI](#) [10.15468/eanrzt](#)

215 Accepted names | 3 Synonyms | 99% Overlap with GBIF Backbone | 78% Overlap with Catalogue of Life

Description  
Contacts  
Data description  
GBIF registration  
Citation

Description  
[https://www.diversitymobile.net/wiki/About\\_Taxon\\_list\\_of\\_pest\\_organisms\\_for\\_IPM\\_at\\_natural\\_history\\_collections\\_compiled\\_at\\_the\\_SNSB](https://www.diversitymobile.net/wiki/About_Taxon_list_of_pest_organisms_for_IPM_at_natural_history_collections_compiled_at_the_SNSB)

Contacts  
Stephan Biebl | Carla Novoa Sepúlveda

Tanja Weibulat, Expert Workshop on GBIF Data Publication in Africa, ITCER, Kenya, 11.10.2023



# DiversityTaxonNames Data as Webservice



## Regionalised and Domain-specific Taxon Lists

The DWB REST Webservice for Taxon Lists is part of a Diversity Workbench (DWB) services network. It is delivering basic information on taxon names in use, synonyms, classification and German vernacular names of a number of groups of animals, fungi and plants.

The current focus is on domain-specific lists (checklists, taxon reference lists, red lists) from Germany under active curation by experts on taxonomy or floristics and faunistics. Each regionalised and domain-specific taxon list has its own history and objectives, is managed completely separately and has its own hierarchical classification. The DiversityTaxonNames (DTN) data resources accessed by the REST API may include additional taxon-related data useful, e. g., for regional nature conservation agencies and environmental projects.

For more information please check [How to use the DWB REST Webservice for Taxon Lists](#) and [Overview on Published Lists](#). For content details see [DTN Taxon Lists Services](#).

<https://services.snsb.info/DTNtaxonlists/rest/v0.1/static/api-doc.html>



# Paper 2022 on Data managed in DiversityTaxonNames

**Biodiversity Data Journal** | Home | Articles | About | About Pensoft | Books | Journals | Blog | Register | Login

Software Description | Biodiversity Data Journal 10: e87254 | <https://doi.org/10.3897/BDJ.10.e87254> (14 Oct 2022)

## Software infrastructure and data pipelines established for technical interoperability within a cross-border cooperation for the flora of the Bohemian Forest

▼ Petr Novotný, Stefan Seifert, Martin Rohn, Wolfgang Diewald, Milan Štech, Dagmar Triebel

### Abstract ▲

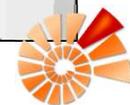
#### Background

The timely and geographical resolutions, as well as the quantity and taxon concepts of records on the occurrence of plants near national borders is often ambiguous. This is due to the regional focus and different approaches of the contributing national and regional databases and networks of the neighbouring countries. Careful data transformation between national data providers is essential for understanding distribution patterns and its dynamics for organisms in areas along the national borders. Sharing occurrence data through the international data aggregator Global Biodiversity Information Facility (GBIF) is also complicated and has to consider that the underlying taxonomic concept and geographic information system of each single GBIF dataset might be different. In addition, some regional data providers have a restrictive (non-cc) licensing policy which does not allow data publication via the GBIF network. Therefore, it is necessary to investigate new ways to make data fit for use for a better and comprehensive understanding of the

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- Dagmar Triebel** - Corresponding author | Staatliche Naturwissenschaftliche Sammlungen Bayerns, SNSB IT

<https://doi.org/10.3897/BDJ.10.e87254>



# Paper 2023 on Data managed in DiversityTaxonNames

The screenshot shows a web browser window displaying the article page on the BISS (Biodiversity Information Science and Standards) website. The URL in the address bar is <https://biss.pensoft.net/article/112391/list/8/>. The page features a navigation menu with options like Home, Articles, About, and Register/Login. The article title is "GBIF-Compliant Data Pipeline for the Management and Publication of a Global Taxonomic Reference List of Pests in Natural History Collections". The authors listed are Carla Novoa Sepúlveda, Stephan Biebl, Nadja Pöllath, Stefan Seifert, Markus Weiss, Tanja Weibulat, and Dagmar Triebel. The abstract discusses the growing demand for monitoring pests in natural history collections (NHCs) and the need for integrated pest management (IPM) solutions. It mentions that the data pipeline results in the publication of a taxon reference list based on information from online resources and standard IPM literature. The complete taxon names, synonyms, and hierarchical classification are organized in a client-server installation of DiversityTaxonNames (DTN) at the Bavarian Natural History Collections (SNSB).

<https://doi.org/10.3897/biss.7.112391>

Tanja Weibulat, Expert Workshop on GBIF Data Publication in Africa, ITCER, Kenya, 11.10.2023



# DiversityExsiccatae

- Management of exsiccatae, i. e. exsiccatal series
- To document bibliographic information like editors, titles and publishers
- To describe thematic scope and relations, number ranges and issue dates
- Give images of example specimens and storage location

# Diversity Exsiccatae Data in Index of Exsiccatae



## IndExs – Index of Exsiccatae



<b>Editor(s):</b>	Abramov, I.I.		
<b>Title:</b>	Hepaticae et Musci URSS exsiccati. Edidit Institutum Botanicum nomine V. L. Komarovii Academiae Scientiarum URSS. Curavit L. I. Savicz-Ljubitzkaja. Decas IV		
<b>Abbreviation:</b>	Abramov, Hepat. Musci URSS Exs. Decas IV		
<b>Editing Institution:</b>	Instituto Botanico nomine V. L. Komarovii Academiae Scientiarum URSS		
<b>Place of publication:</b>	Leningrad [St. Petersburg]		
<b>First number:</b>	31	<b>First issue:</b>	1957
<b>Last number:</b>	40	<b>Last issue:</b>	1957
	<a href="#">preceded by</a> <a href="#">superseded by</a>		
<b>Information source(s):</b>	Consortium of North American Bryophyte Herbaria: <a href="http://bryophyteportal.org/portal/">http://bryophyteportal.org/portal/</a> Sayre (1971) Stafleu & Cowan (1985)		
<b>Notes:</b>	Despite the name is spelled Savicz-Lubitzkaja by Sayre, the name is Savicz-Ljubitzkaja on all the schedae. Each of the decas I-XIX has its own editor under "elaboravit". As a consequence IndExs has parallel entries for each of the decas.		
<b>Group(s) of Organisms:</b>	bryophytes		
<b>ExsiccataID:</b>	2147199849		

[New search](#)

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No. 35: *Isoetechium mysosuroides* (example from CINC)

Tanja Weibulat, Expert Workshop on GBIF Data Publication in Africa, ITCER, Kenya, 11.10.2023



# Paper 2022 on Data managed in DiversityExsiccatae

The screenshot shows a web browser window with the URL <https://biss.pensoft.net/article/93585/list/8/>. The page is from the Biodiversity Information Science and Standards (BISS) journal, volume 6, issue e93585, published on August 23, 2022. The article title is "Connecting IndExs Editors and exsiccata IDs with Wikidata for Disambiguation of People Names and Work in Botanical and Mycological Collections". The authors listed are Dagmar Triebel, Camila Uribe-Holguin, Stefan Seifert, Markus Weiss, and Peter Scholz. The abstract describes the "IndExs—Index of Exsiccatae" as an online database for bibliographic information on exsiccatae and exsiccata-like series, launched in 2001. It details the system's purpose in botany and mycology, its structure of numbered specimens, and the role of editors in maintaining the database. The abstract mentions examples of editors like E. M. Fries and K. H. Rechinger.

**Conference Abstract** Biodiversity Information Science and Standards 6: e93585  
<https://doi.org/10.3897/biss.6.93585> (23 Aug 2022)

## Connecting IndExs Editors and exsiccata IDs with Wikidata for Disambiguation of People Names and Work in Botanical and Mycological Collections

▼ Dagmar Triebel, Camila Uribe-Holguin, Stefan Seifert, Markus Weiss, Peter Scholz

### Abstract

"IndExs—Index of Exsiccatae" is an online database with bibliographic information on exsiccatae and exsiccata-like series launched in 2001 (Triebel and Scholz 2022). This type of series is a specific system in botany and mycology to create, publish and distribute well identified and documented reference material. In most cases the distributed specimens are numbered and each number consists of uniform material (herbarium duplicates) from a single collection event. Exsiccatal series are regularly published with small booklets containing the printed labels/schedae of each numbered entity. The title of the series often shows the geographic and taxonomic focus of the series, e.g., "Delogne & Gravet, Hépat. Ardenne" and "Hertel, Lecideaceae Exs.". The persons editing the series are specialists, often recognized botanists and taxonomists. They are mostly not identical with the persons collecting and identifying the specimens distributed. Examples are E. M. Fries with "Fries, Herb. Norm. Pl. Suec.", G. L. Rabenhorst who published 24 series with more than 6,000 numbered entities and K. H. Rechinger with "Rechinger & Polunin, Exs. Herb. Baghdad". In the minority of cases the editors are anonymous persons and

**Authors**

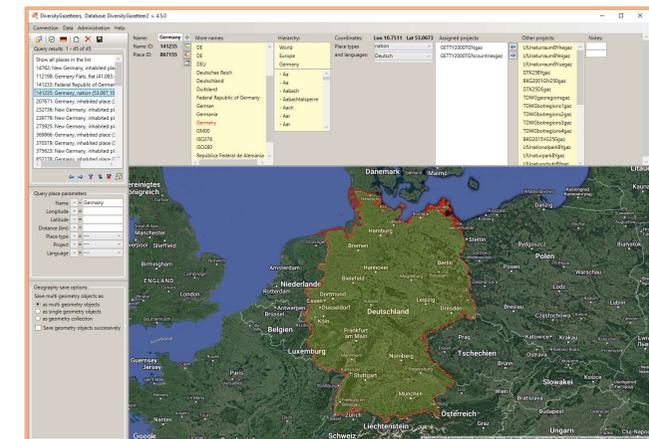
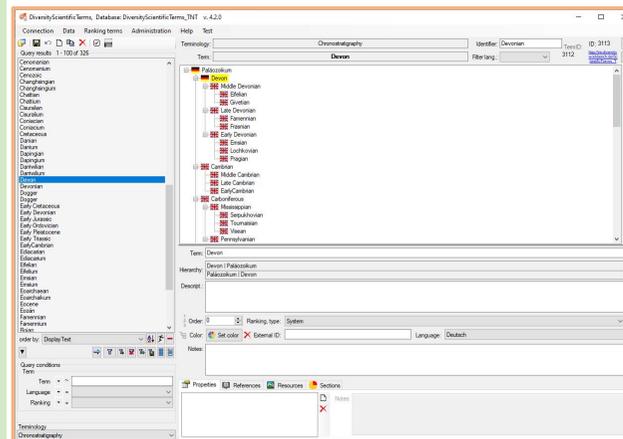
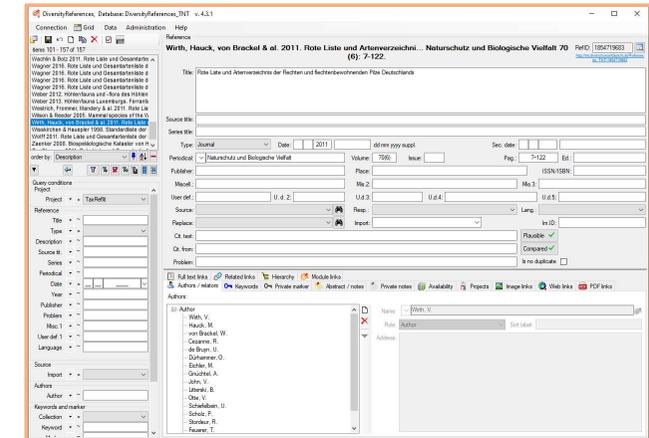
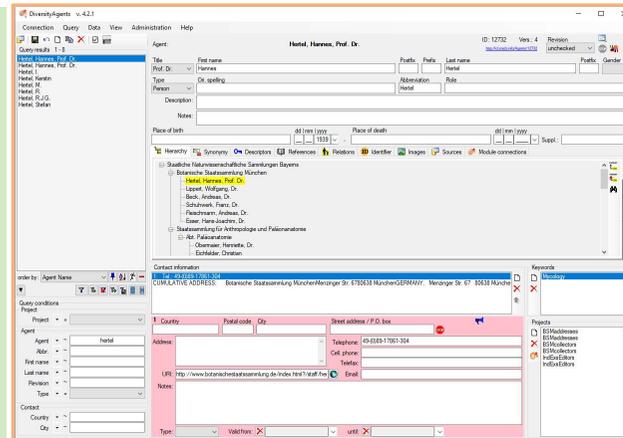
- Dagmar Triebel** - Corresponding author  
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- Peter Scholz**  
Staatliche Naturwissenschaftliche Sammlungen Bayerns, Botanische

<https://doi.org/10.3897/biss.6.93585>



# Ontologies

- DiversityAgents is the module for the management of information on persons and organisations.
- DiversityReferences is the module for the management of literature references and literature resources.
- DiversityScientificTerms is the module for the management of scientific ontologies, vocabularies, terminologies and terms.
- DiversityGazetteers is the module for the management of geographic thesauri like the GettyThesaurus.



# Paper 2022 on Data managed in DiversityAgents

← → ↻ 🏠 <https://biss.pensoft.net/article/93585/list/8/> 🌐 ☆ 📄 ⬇️ 📧 📧 📧 📧 ☰

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Received: 17 Aug 2022 | Published: 23 Aug 2022

This article is part of:  
[INT19 - The role of the Wikimedia ecosystem in linking biodiversity data](#) Edited by Daniel Mietchen

**Authors**

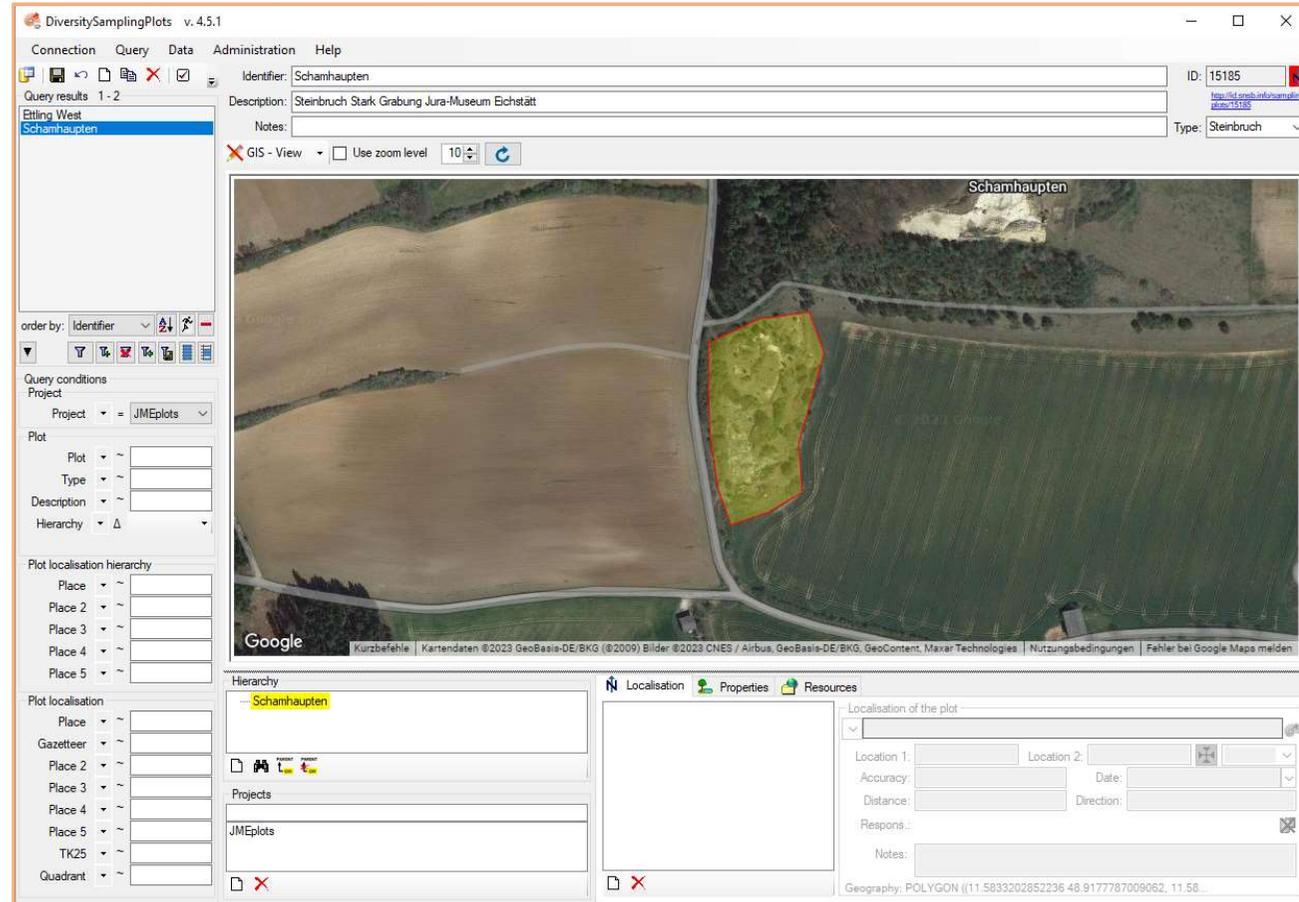
- Dagmar Triebel** ✉️ - Corresponding author  
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- Stefan Seifert** ✉️  
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- Markus Weiss** ✉️  
Staatliche Naturwissenschaftliche Sammlungen Bayerns, SNSB IT Center, Munich, Germany  
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- Peter Scholz** ✉️  
Staatliche Naturwissenschaftliche Sammlungen Bayerns, Botanische

<https://doi.org/10.3897/biss.6.93585>



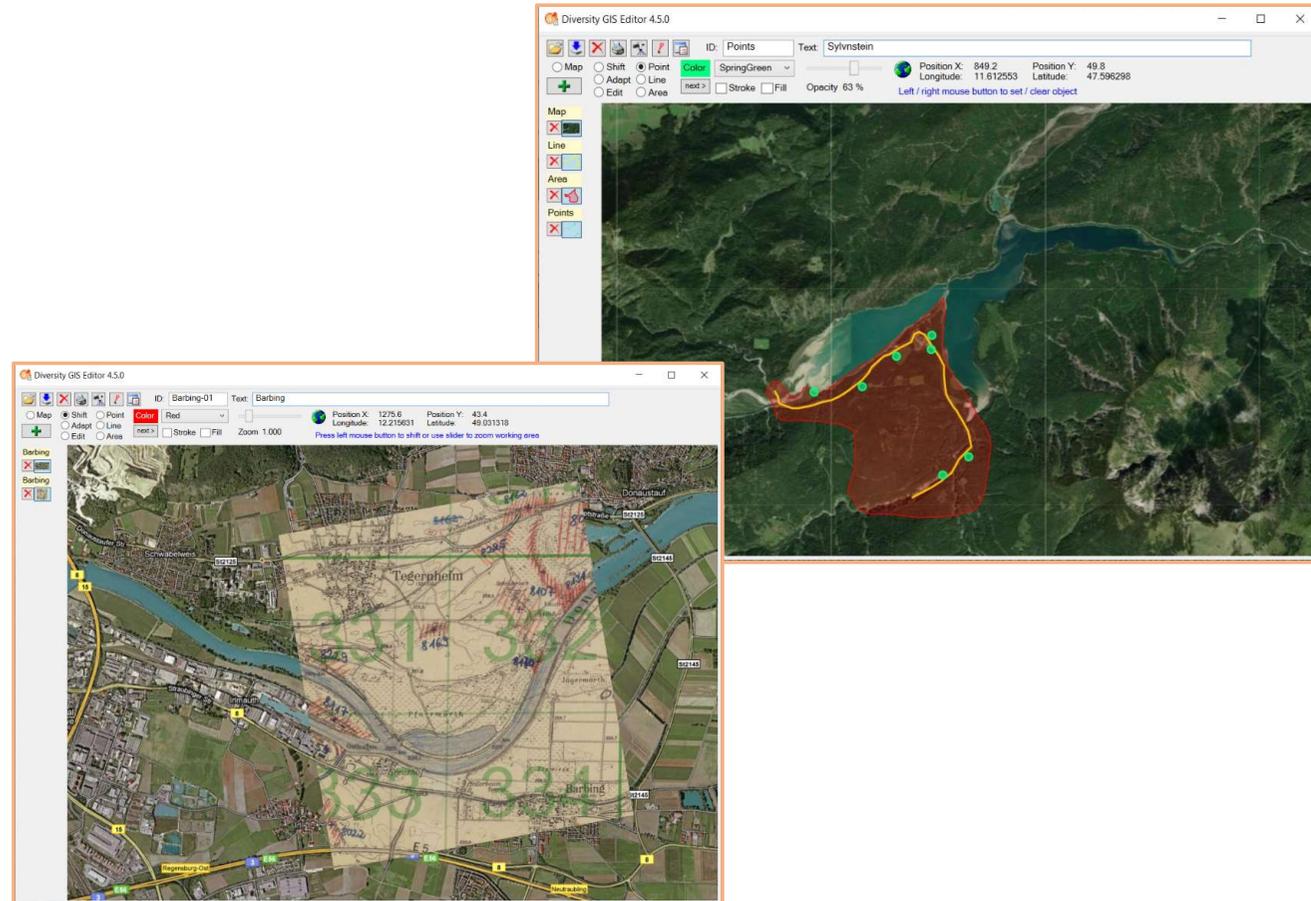
# DiversitySamplingPlots

- Management of sampling plots
- To document the geographical position of geobjects and the geometry of the plots as well of georeferenced objects on the plots
- Management of the hierarchical relation between plots and subplots

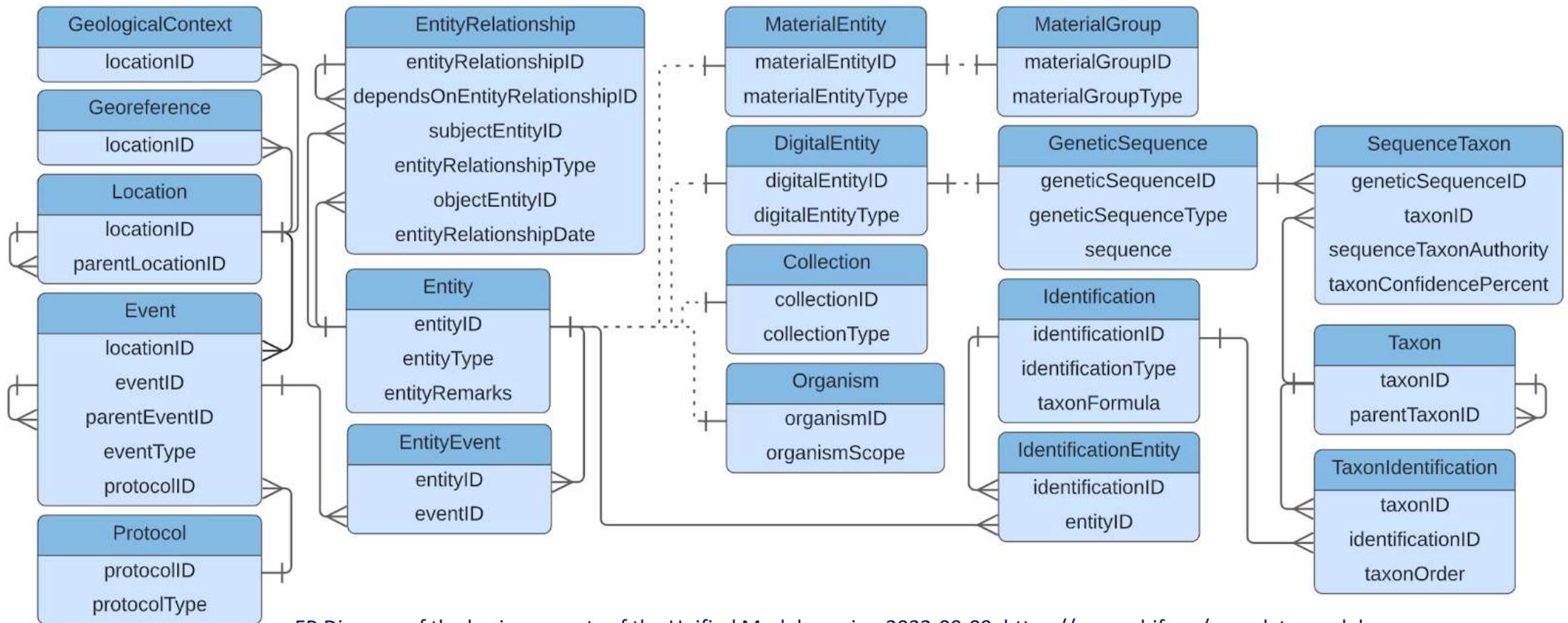


# Diversity GIS Editor

- Tool to create, visualize, edit and store samples within a geographical environment (geoobjects)
- Stand-alone application or integrated component as part of other DWB applications, e.g. DiversityCollection or DiversitySamplingPlots
- Historical maps without coordinates can be georeferenced
- Microsoft SQL Geometry Objects (points, lines and areas) may be displayed and edited with a background map.



# DWB ER diagrams and concepts are compliant with GBIF unified data model



ER Diagram of the basic concepts of the Unified Model, version 2022-09-09, <https://www.gbif.org/new-data-model>

# DWB in numbers

- DWB software tools and applications: 14
- DWB code lines (Mio): 2.2
- DWB installations on servers of the SNSB: 120
- DWB videos: 170
- DWB users (estimated): 350-400
- DWB records managed: 25 mio
- DWB records published (FAIR digital objects): 22 mio

# Thank you for your attention!