



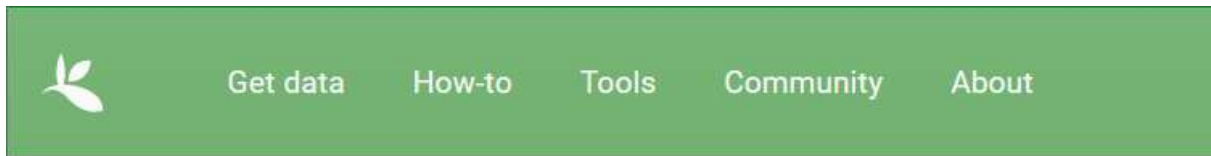
GBIF publication of biodiversity monitoring data in Germany with two example datasets from SNSB

Tanja Weibulat

Expert Workshop on GBIF Data
Publication in Africa, 11.10.2023



Germany as GBIF Voting participant



Germany



A GBIF Voting participant from Europe and Central Asia
Names of countries and areas are based on the [ISO 3166-1 standard](#)

<https://www.gbif.org/country/DE/participation>

SUMMARY

DATA ABOUT

DATA PUBLISHING

PARTICIPATION

ALIEN SPECIES↔

MORE...

ACTIVITY REPORT ↓

Member status: Voting

GBIF participant since: 2001

GBIF region: Europe and Central Asia

Head of delegation: [Christoph Häuser](#)

Node name: [GBIF Germany](#)

Node established: 2001

Website: <http://www.gbif.de/>

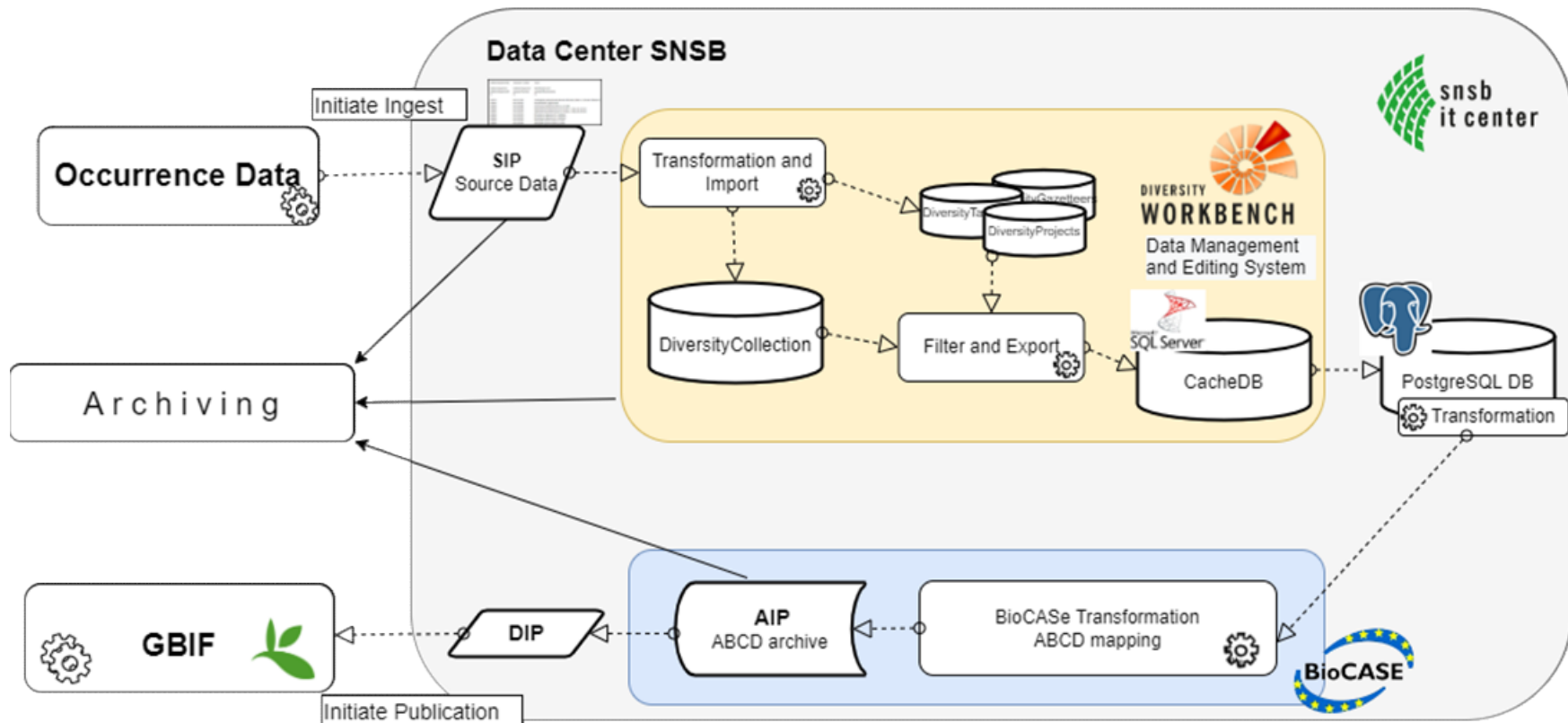
Participant node manager: [Dagmar Triebel](#)

GBIF Germany – Network of Subnodes at Natural Science Collections (NSCs)

- 6 Organisations with 8 subnodes, thematic networks and data centers

The screenshot displays the GBIF Germany website interface. On the left, there is a vertical list of logos for partner institutions: Bo (Botanisches Institut Bonn), DSMZ (Deutscher Sammlungszentrum für Mikroorganismen und Zellenkultur), FORSCHUNGS MUSEUM KOENIG (Museum für Naturkunde Berlin), SENCKENBERG world of biodiversity, and SNSB (Staatliche Naturwissenschaftliche Sammlungen Bayerns). The main content area features a navigation menu with links to GBIF-DE Home, News, News II, Coordination, Bacteria & Archaea, Plants & Protists, Fungi & Lichens, Insects, Invertebrates II, Invertebrates III, Vertebrates, Fossils, Thematic Network Soil Zoology, Publications, and GBIF-D Archive. Below this is a section for GBIF International with links to Home, Deutsche Delegation, and News and Events. The central text area includes a search bar, the title 'Global Biodiversity Information Facility - Germany', a link to the 'Deutsche Version', a photograph of a mountain landscape, and a paragraph stating the mission of GBIF to facilitate free and open access to biodiversity data. It also lists the objectives of GBIF-D, which is to focus on collecting and mobilizing data within Germany's research community. On the right side, there is a search bar and a section titled 'Virtuelles Herbarium Deutschland mit GBIF-Technologie', which describes a virtual herbarium project. At the bottom right, there are logos for GBIF, GBIF.DE, and SNSB it center. A vertical URL 'http://www.gbif.de/homeenglish' is visible on the far right edge.

Exemplary data pipeline with FAIR occurrence data for GBIF



NSCs: Agreed Standard elements and provider software for FAIR data



The screenshot shows the header section of the ABCD website. At the top, there is a navigation menu with links for TDWG, Standards, Journal, Community, Conferences, About, and News. The main heading is "Access to Biological Collection Data (ABCD)". Below this, a paragraph describes the ABCD Schema as an evolving comprehensive standard for the access to and exchange of data about specimens and observations. A button indicates the "ABCD version 2.06" and another button says "Find us on GitHub". There are also tags for "technical specification", "2005 standard", and "2005". At the bottom, there is a breadcrumb trail: "Standards / Access to Biological Collection Data (ABCD)".

TDWG Standards Journal Community Conferences About News

Access to Biological Collection Data (ABCD)

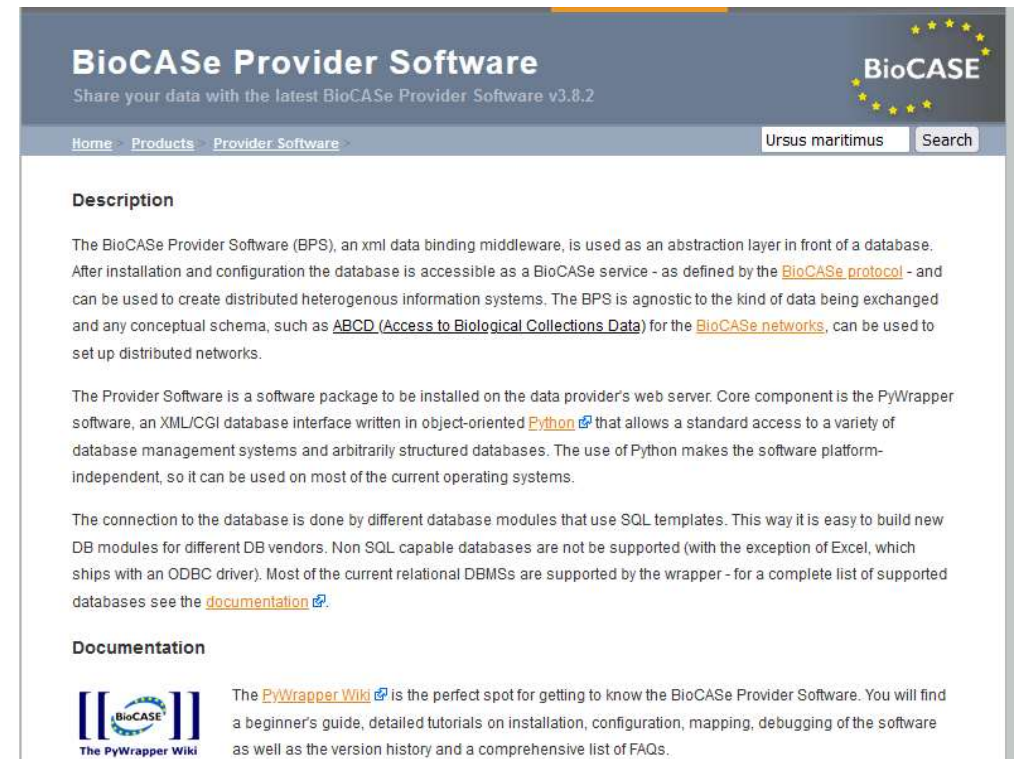
The Access to Biological Collections Data (ABCD) Schema is an evolving comprehensive standard for the access to and exchange of data about specimens and observations (a.k.a. primary biodiversity data).

ABCD version 2.06

Find us on GitHub

technical specification 2005 standard 2005

Standards / Access to Biological Collection Data (ABCD)



The screenshot shows the BioCASE Provider Software website. The header includes the BioCASE logo and the text "Share your data with the latest BioCASE Provider Software v3.8.2". There is a search bar with "Ursus maritimus" entered. The main content area has a "Description" section explaining that the BioCASE Provider Software (BPS) is an XML data binding middleware used as an abstraction layer in front of a database. It also mentions that the BPS is agnostic to the kind of data being exchanged and can be used to create distributed heterogeneous information systems. A "Documentation" section follows, mentioning the PyWrapper Wiki as a resource for getting to know the BioCASE Provider Software, including a beginner's guide, detailed tutorials, and a comprehensive list of FAQs.

BioCASE Provider Software

Share your data with the latest BioCASE Provider Software v3.8.2

Home Products Provider Software

Ursus maritimus Search

Description

The BioCASE Provider Software (BPS), an XML data binding middleware, is used as an abstraction layer in front of a database. After installation and configuration the database is accessible as a BioCASE service - as defined by the [BioCASE protocol](#) - and can be used to create distributed heterogeneous information systems. The BPS is agnostic to the kind of data being exchanged and any conceptual schema, such as [ABCD \(Access to Biological Collections Data\)](#) for the [BioCASE networks](#), can be used to set up distributed networks.

The Provider Software is a software package to be installed on the data provider's web server. Core component is the PyWrapper software, an XML/CGI database interface written in object-oriented [Python](#) that allows a standard access to a variety of database management systems and arbitrarily structured databases. The use of Python makes the software platform-independent, so it can be used on most of the current operating systems.

The connection to the database is done by different database modules that use SQL templates. This way it is easy to build new DB modules for different DB vendors. Non SQL capable databases are not supported (with the exception of Excel, which ships with an ODBC driver). Most of the current relational DBMSs are supported by the wrapper - for a complete list of supported databases see the [documentation](#).

Documentation

The [PyWrapper Wiki](#) is the perfect spot for getting to know the BioCASE Provider Software. You will find a beginner's guide, detailed tutorials on installation, configuration, mapping, debugging of the software as well as the version history and a comprehensive list of FAQs.

https://www.biocase.org/products/provider_software/



DWB – a set of software tools and db engines

DiversityDescriptions Information Model (version 3.0.15, 11 July 2016)

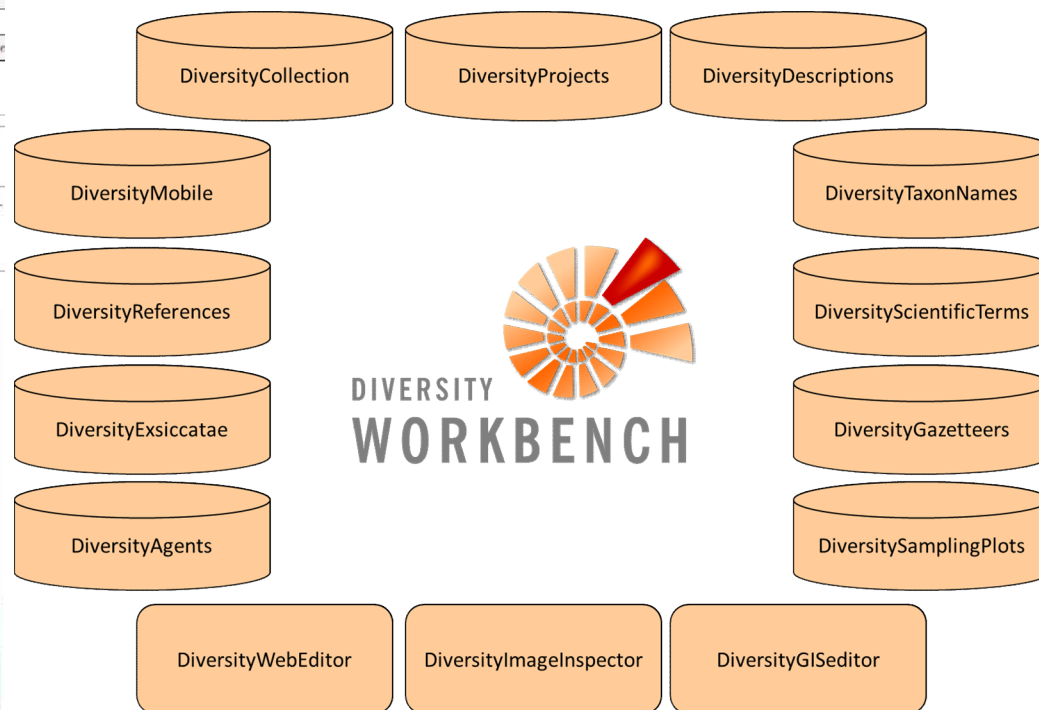
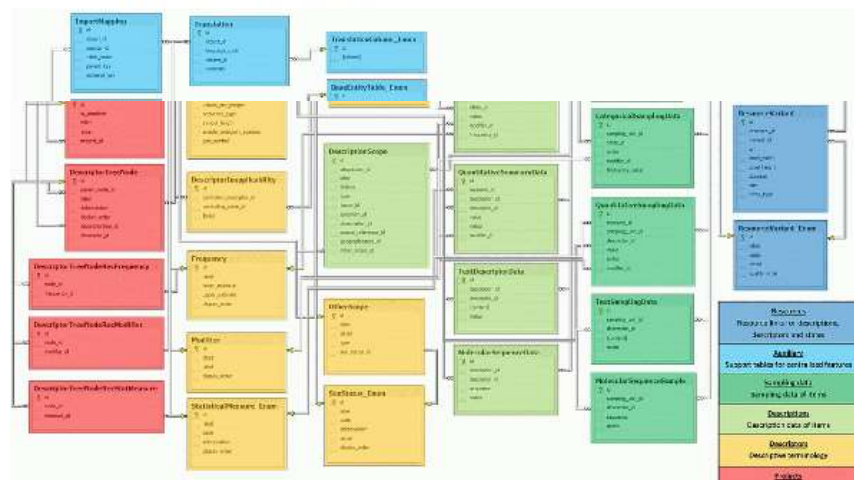
Authors	G. Hagedorn, A. Plank, A. Link, G. Rambold & D. Tietzel 2016
License	
Suggested citation	G. Hagedorn, A. Plank, A. Link, G. Rambold & D. Tietzel (2016). DiversityDescriptions information model (version 3.0.15). http://www.diversityworkbench.net
Notes	The models currently reside in MS SQL Server, so knowledge of some SQL Server ER-diagram conventions will be helpful. Besides the screen shots below, a Microsoft T-SQL -Script for the generation of the tables is provided.

dwBD Database Scheme

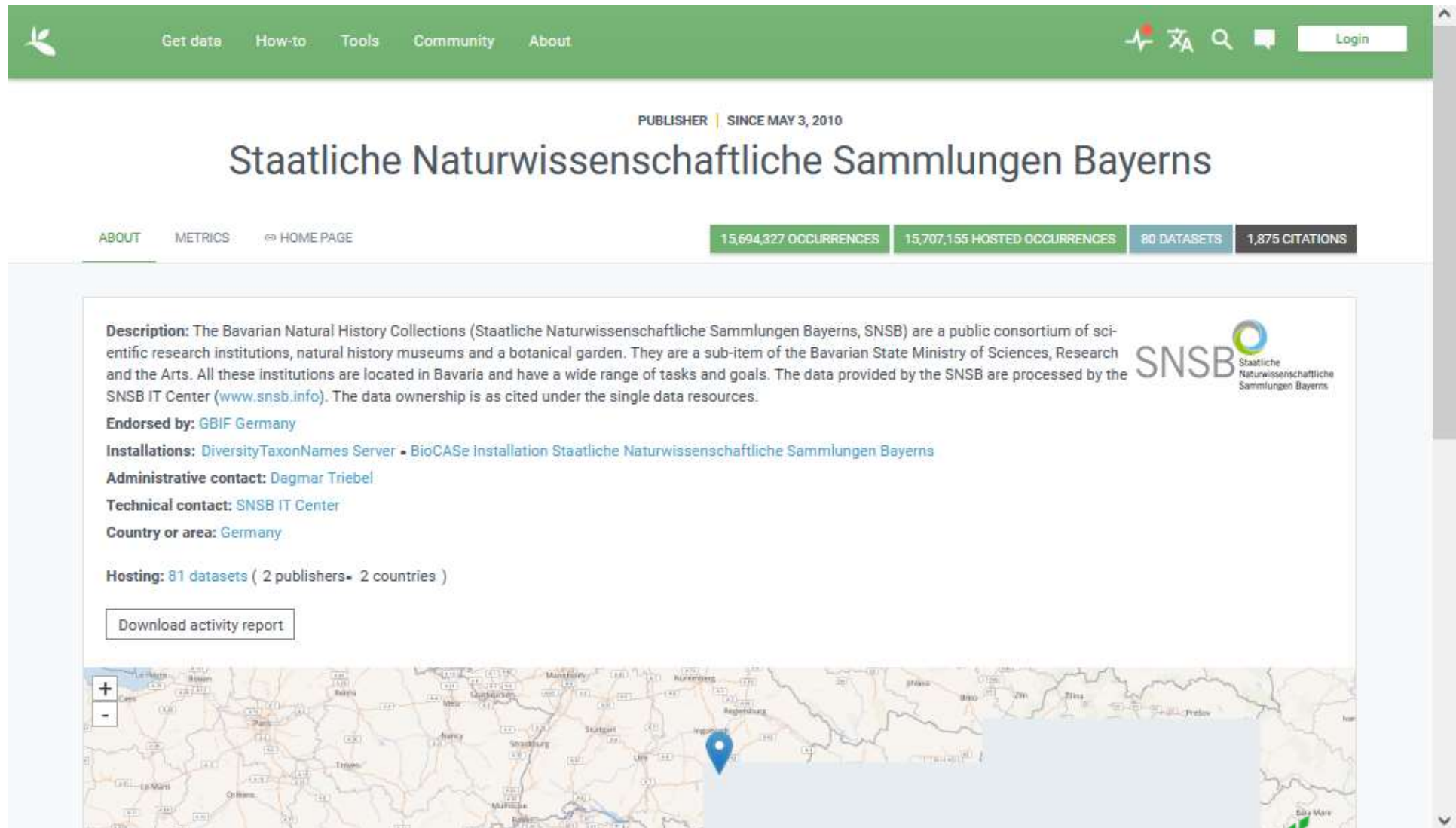
This information model is available as dwBD database scheme with each single data table and data column referenced as term or concept by its own stable and persistent URL.

ER Diagrams

Overview over all entities and relations used in the database model



SNSB as GBIF data publisher



The screenshot shows the GBIF publisher page for Staatliche Naturwissenschaftliche Sammlungen Bayerns (SNSB). The page features a green navigation bar with links for 'Get data', 'How-to', 'Tools', 'Community', and 'About', along with a search icon and a 'Login' button. Below the navigation bar, the publisher name 'Staatliche Naturwissenschaftliche Sammlungen Bayerns' is displayed, along with the text 'PUBLISHER | SINCE MAY 3, 2010'. A statistics bar shows '15,694,327 OCCURRENCES', '15,707,155 HOSTED OCCURRENCES', '80 DATASETS', and '1,875 CITATIONS'. The main content area includes a description of SNSB as a public consortium of scientific research institutions, natural history museums, and a botanical garden. It also lists contact information for administrative and technical contacts, the country (Germany), and hosting details (81 datasets, 2 publishers, 2 countries). A 'Download activity report' button is visible. At the bottom, there is a map of Germany with a blue location pin over the SNSB area.

Description: The Bavarian Natural History Collections (Staatliche Naturwissenschaftliche Sammlungen Bayerns, SNSB) are a public consortium of scientific research institutions, natural history museums and a botanical garden. They are a sub-item of the Bavarian State Ministry of Sciences, Research and the Arts. All these institutions are located in Bavaria and have a wide range of tasks and goals. The data provided by the SNSB are processed by the SNSB IT Center (www.snsb.info). The data ownership is as cited under the single data resources.

Endorsed by: [GBIF Germany](#)

Installations: [DiversityTaxonNames Server](#) • [BioCASE installation Staatliche Naturwissenschaftliche Sammlungen Bayerns](#)

Administrative contact: [Dagmar Triebel](#)

Technical contact: [SNSB IT Center](#)

Country or area: [Germany](#)

Hosting: [81 datasets](#) ([2 publishers](#) • [2 countries](#))

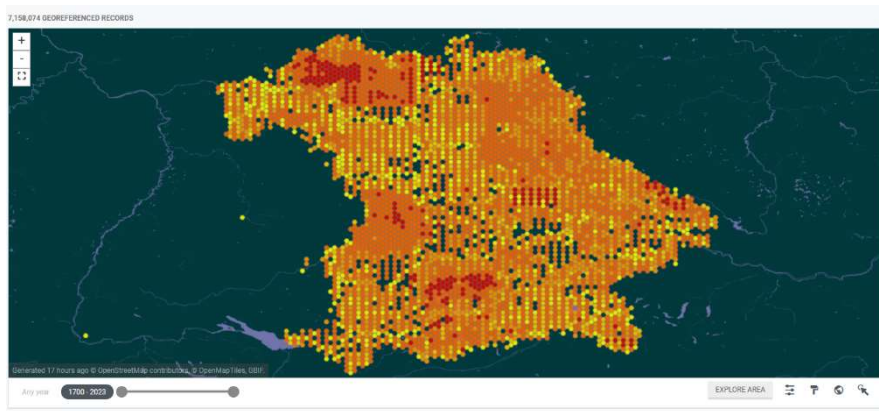
[Download activity report](#)

Two examples for monitoring datasets in GBIF

The image displays two examples of GBIF dataset pages. The left page is for the dataset 'Occurrence Data of Vascular Plants collected in Bavaria', registered on May 2, 2016. It shows 7,183,903 occurrences, with 100% having a taxon match and NaN% having coordinates. The right page is for 'Floristic records from survey studies of the Bayerisches Landesamt für Umwelt', registered on October 15, 2018. It shows 7,549,013 occurrences, with 100% having a taxon match, 99.9% having coordinates, and 99.9% having a year. Both pages include a map of Bavaria with georeferenced records and a summary of metrics.

Flora of Bavaria: Two dynamic datasets (GBIF occurrence records “plot”-based)

BFL



<https://www.gbif.org/dataset/64dabd3c-4f34-4520-b9dd-d227a0bf1582>

7.183.903 records

„Hotspots“

- specialists
- mapping for local flora projects



LfU

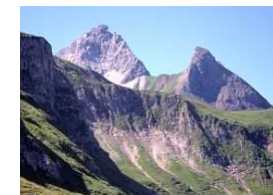


<https://www.gbif.org/dataset/8ea4250e-0ff0-44f8-812e-bffc3b9ba2a4>

7.549.013 records

„Hotspots“

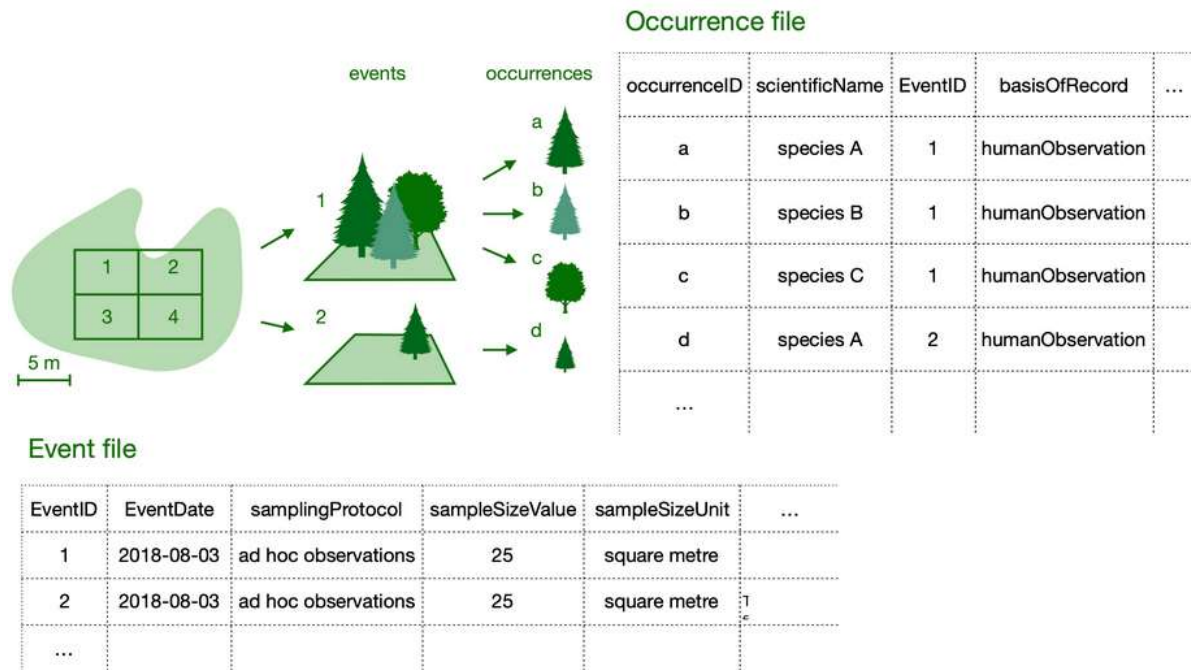
- biotopes (e.g. „Alpenbiotopkartierung“)



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GBIF Classes of datasets

- Resource datasets (metadata-only datasets)
- Checklists
- Occurrence datasets
- **Sampling events datasets**



<https://data-blog.gbif.org/post/choose-dataset-type/>



Thank you for your
attention!