Edaphobase

a new online soil-zoological data warehouse


http://portal.edaphobase.org/
Edaphobase: currently included taxa

- **Nematoda**
- **Lumbricidae**
- **Collembola**
- **Enchytraeidae**
- **Oribatida**
- **Myriapoda**
- **Gamasina**
- **Isopoda** (2014)
Key objectives of Edaphobase:

- Link soil-zoological data with sampling and habitat data
- Increase data accessibility and informational content
- Combine data from different research institutions
- Provide research tools for data analysis (ecological and bio-geographical investigations)
- Develop tools for prognoses of soil communities
- Provide standardised data for interoperability
Data acquisition

- **Literature**, from ~1960 onwards
  - published
  - reports
  - grey data sources
  - raw data (doi)

- **Project-based / Collection data**
  - universities and institutes
  - museums
  - ...

**Predefined lists** for input

**Standardisation**

**Original data** (verification)

**Filtered queries**

**Searchable fields**

**Annotations**

**Comparative analyses**
The data warehouse: > 230 parameters included

- **84 x Site data**
  - 18 x General
  - 28 x Soil
  - 10 x Vegetation
  - 14 x Weather
  - 14 x Climate

- **30 x Sampling**
  - 3 x General
  - 19 x Sampling
  - 8 x Extraction

- **100 x Object data**
  - 6 x General
  - 13 x Quantity
  - 10 x Preparation
  - 14 x Biology
  - 24 x Morphology
  - >30 x Laboratory

- **10 x Identification**
- **12 x Source**
Predefined lists

- Taxonomic backbone
- Soil parameters (Federal Institute for Geosciences & Natural Resources)
- ISO 23611 sampling and extraction
- German habitat types (Riecken et al. ²2003)
- Natural regions (Meyen et al. 1953-62)
- ...

(For full list & definitions see www.edaphobase.org)
Data input into Edaphobase (Import Tool)
Query example: Distribution of sister species

Burkhardt et al.,
Appl. Soil Ecol. 83, 3-12
Applications: German Red Lists, Lumbricidae etc.

Lehmitz et al.: Checklist of earthworms (Oligochaeta: Lumbricidae) from Germany (Zootaxa 3862, 221-245)
Spelda et al.: Rote Liste der in Deutschland gefährdeten Hundertfüßer (Myriapoda: Chilopoda) (in prep.)
Reip et al.: Rote Liste der in Deutschland gefährdeten Tausendfüßer (Myriapoda: Diplopoda) (in prep.)
Contingency tables (tables export via the web application)

### edaphobase Portal – Beta-Version

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<th>Value</th>
<th>Export as CSV</th>
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<table>
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<th>Deciduous and ...</th>
<th>Dry sand grain</th>
<th>Permanently and falls</th>
<th>Permanently and falls</th>
<th>Forest and moss</th>
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### Group by

- Available groupings
  - Taxon - Order
  - Taxon - Family
  - Abundance [U/m²]
  - pH - category

### Aggregations

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1 of 70 rows
Summary

- Literature, raw data and collection data are compiled
- Species-level taxonomy is linked with distributional and habitat parameter data
- Effective data management enables parameter standardisation for comparability
- Multi-source datasets enable supraregional meta-analyses
- EAV data model renders high flexibility, easily expandable
- Local versions available for end-users
Next Steps

- Available Data (time series, multiple taxa)
- Data quality: heterogeneous sources
- **Standardisation I** ↔ original data
- **Standardisation II** German ↔ International
- Easy usage; Up- & Downloads
- Additional analysis tools: niche space etc.
- Additional parameters: -omics, traits, ecotox,…
Thanks to:

Bavarian State Collection of Zoology, Fauna Europaea Secretariat, Federal Ministry of Education and Research, Federal Environment Agency (UBA) and the German Environmental Protection Agencies, Field Museum of Natural History Chicago, Georg-August-University Göttingen, Humboldt University Berlin, Julius-Kühn Institute Münster, Justus-Liebig University Giessen, Museum of Natural History Berlin, Thünen Institute Braunschweig, University Bremen UFT.

Botanic Garden and Botanical Museum Berlin, ECT Oekotoxikologie Flörsheim, gaiac Aachen, RWTH Aachen, SGN Frankfurt, SMN Görlitz, SMN Karlsruhe

Thank you for your attention!

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