

Versioned Archive and Review of Biotic  
Interactions and Taxon Names Found within  
globalbioticinteractions/funfun  
hash://md5/f14538a049f49b18fa7cf9dfe76da463

by Nomer, Elton and Preston, three naive review bots  
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<https://globalbioticinteractions.org/contribute>  
<https://github.com/globalbioticinteractions/funfun/issues>

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**Abstract**

Life on Earth is sustained by complex interactions between organisms and their environment. These biotic interactions can be captured in datasets and published digitally. We present a review and archiving process for such an openly accessible digital interactions dataset of known origin and discuss its outcome. The dataset under review, named globalbioticinteractions/funfun, has fingerprint hash://md5/f14538a049f49b18fa7cf9dfe76da463, is 3.62MiB in size and contains 98 interactions with 2 unique types of associations (e.g., hasHost) between 24 primary taxa (e.g., *Pleurotus ostreatus*) and 20 associated taxa (e.g., Malvaceae). This report includes detailed summaries of interaction data, a taxonomic review from multiple catalogs, and an archived version of the dataset from which the reviews are derived.

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## Introduction

### Data Review and Archive

Data review and archiving can be a time-consuming process, especially when done manually. This review report aims to help facilitate both activities. It automates the archiving of datasets, including Darwin Core archives, and is a citable backup of a version of the dataset. Additionally, an automatic review of species interaction claims made in the dataset is generated and registered with Global Biotic Interactions (J. H. Poelen, Simons, and Mungall 2014).

This review includes summary statistics about, and observations about, the dataset under review :

Flores-Moreno, Habacuc, Treseder, Kathleen, K., , Cornwell, William, K., Maynard, Daniel S., Milo, Amy, M., Abarenkov, Kessy, Afkhami, Michelle, E., Aguilar-Trigueros, Carlos, A., Bates, Scott, Bhatnagar, Jennifer, M., Busby, Posy, E., Christian, Natalie, Crowther, Thomas W., Floudas, Dimitri, Gazis, Romina, Hibbett, David, Kennedy, Peter, F., Lindner, Daniel, L., Nilsson, R. Henrik, Powell, Jeff, Schildhauer, Mark, Schilling, Jonathan, Zanne, Amy, E. 2019. fungaltraits aka funfun: a dynamic functional trait database for the world’s fungi. Dataset: <https://github.com/traitecoevo/fungaltraits>. <https://github.com/globalbioticinteractions/funfun/archive/440daf8a9c7f128c4943b26fb27aa66410cd3cff2026-03-28T01:30:12.379Z> hash://md5/f14538a049f49b18fa7cf9dfe76da463

For additional metadata related to this dataset, please visit <https://github.com/globalbioticinteractions/funfun> and inspect associated metadata files including, but not limited to, *README.md*, *eml.xml*, and/or *globi.json*.

## Methods

The review is performed through programmatic scripts that leverage tools like Preston (Elliott et al. 2025), Elton (Kuhn, Poelen, and Leinweber 2025), Nomer (Salim and Poelen 2025), globinizer (J. Poelen, Seltmann, and Mietchen 2024) combined with third-party tools like grep, mlr, tail and head.

Table 1: Tools used in this review process

tool name	version
preston	0.11.1
elton	0.16.7
nomer	0.6.2
globinizer	0.4.0
mlr	6.0.0
jq	1.6
yq	4.25.3
pandoc	3.1.6.1
duckdb	1.3.1
mapserver	7.6.4

The review process can be described in the form of the script below <sup>1</sup>.

```
# get versioned copy of the dataset (size approx. 3.62MiB) under review
elton pull globalbioticinteractions/funfun

# generate review notes
elton review globalbioticinteractions/funfun\
  > review.tsv

# export indexed interaction records
elton interactions globalbioticinteractions/funfun\
  > interactions.tsv

# export names and align them with the Catalogue of Life using Nomer
elton names globalbioticinteractions/funfun\
  | nomer append col\
  > name-alignment.tsv
```

or visually, in a process diagram.

You can find a copy of the full review script at `check-data.sh`. See also GitHub and Codeberg.

---

<sup>1</sup>Note that you have to first get the data (e.g., via `elton pull globalbioticinteractions/funfun`) before being able to generate reviews (e.g., `elton review globalbioticinteractions/funfun`), extract interaction claims (e.g., `elton interactions globalbioticinteractions/funfun`), or list taxonomic names (e.g., `elton names globalbioticinteractions/funfun`)

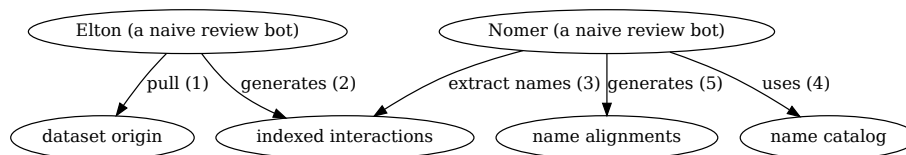


Figure 1: Review Process Overview

## Results

In the following sections, the results of the review are summarized <sup>2</sup>. Then, links to the detailed review reports are provided.

## Files

The following files are produced in this review:

filename	description
biblio.bib	list of bibliographic reference of this review
check-dataset.sh	data review workflow/process as expressed in a bash script
data.zip	a versioned archive of the data under review
HEAD	the digital signature of the data under review
index.docx	review in MS Word format
index.html	review in HTML format
index.md	review in Pandoc markdown format
index.pdf	review in PDF format
indexed-citations.csv.gz	list of distinct reference citations for reviewed species interaction claims in gzipped comma-separated values file format
indexed-citations.html.gz	list of distinct reference citations for reviewed species interactions claims in gzipped html file format
indexed-citations.tsv.gz	list of distinct reference citations for reviewed species interaction claims in gzipped tab-separated values format

<sup>2</sup>Disclaimer: The results in this review should be considered friendly, yet naive, notes from an unsophisticated robot. Please keep that in mind when considering the review results.

filename	description
indexed-interactions-col-family-col-family.svg	network diagram showing the taxon family to taxon family interaction claims in the dataset under review as interpreted by the Catalogue of Life via Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024)
indexed-interactions-col-kingdom-col-kingdom.svg	network diagram showing the taxon kingdom to taxon kingdom interaction claims in the dataset under review as interpreted by the Catalogue of Life via Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024)
indexed-interactions.csv.gz	species interaction claims indexed from the dataset under review in gzipped comma-separated values format
indexed-interactions.html.gz	species interaction claims indexed from the dataset under review in gzipped html format
indexed-interactions.tsv.gz	species interaction claims indexed from the dataset under review in gzipped tab-separated values format
indexed-interactions.parquet	species interaction claims indexed from the dataset under review in Apache Parquet format
indexed-interactions.png	species interaction claims indexed from the dataset under review plotted on a map
indexed-interactions.map	mapserver configuration to plot species interaction claims indexed from the dataset under review on a map
indexed-interactions.gpkg	species interaction claims indexed from the dataset under review in GeoPackage format
indexed-interactions-h3.gpkg	geospatially clustered h3 species interaction claims indexed from the dataset under review in GeoPackage format
indexed-interactions-sample.csv	list of species interaction claims indexed from the dataset under review in gzipped comma-separated values format

filename	description
indexed-interactions-sample.html	first 500 species interaction claims indexed from the dataset under review in html format
indexed-interactions-sample.tsv	first 500 species interaction claims indexed from the dataset under review in tab-separated values format
indexed-names.csv.gz	taxonomic names indexed from the dataset under review in gzipped comma-separated values format
indexed-names.html.gz	taxonomic names found in the dataset under review in gzipped html format
indexed-names.tsv.gz	taxonomic names found in the dataset under review in gzipped tab-separated values format
indexed-names.parquet	taxonomic names found in the dataset under review in Apache Parquet format
indexed-names-resolved-col.csv.gz	taxonomic names found in the dataset under review aligned with the Catalogue of Life as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-col.html.gz	taxonomic names found in the dataset under review aligned with the Catalogue of Life as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format
indexed-names-resolved-col.tsv.gz	taxonomic names found in the dataset under review aligned with the Catalogue of Life as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-col.parquet	taxonomic names found in the dataset under review aligned with the Catalogue of Life as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format

filename	description
indexed-names-resolved-discoverlife.csv.gz	taxonomic names found in the dataset under review aligned with Discover Life bee species checklist as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-discoverlife.html.gz	taxonomic names found in the dataset under review aligned with Discover Life bee species checklist as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format
indexed-names-resolved-discoverlife.tsv.gz	taxonomic names found in the dataset under review aligned with Discover Life bee species checklist as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-discoverlife.parquet	taxonomic names found in the dataset under review aligned with Discover Life bee species checklist as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format
indexed-names-resolved-gbif.csv.gz	taxonomic names found in the dataset under review aligned with GBIF Backbone Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-gbif.html.gz	taxonomic names found in the dataset under review aligned with GBIF Backbone Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format

filename	description
indexed-names-resolved-gbif.tsv.gz	taxonomic names found in the dataset under review aligned with GBIF Backbone Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-gbif.parquet	taxonomic names found in the dataset under review aligned with GBIF Backbone Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format
indexed-names-resolved-itis.csv.gz	taxonomic names found in the dataset under review aligned with Integrated Taxonomic Information System (ITIS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-itis.html.gz	taxonomic names found in the dataset under review aligned with Integrated Taxonomic Information System (ITIS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format
indexed-names-resolved-itis.tsv.gz	taxonomic names found in the dataset under review aligned with Integrated Taxonomic Information System (ITIS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-itis.parquet	taxonomic names found in the dataset under review aligned with Integrated Taxonomic Information System (ITIS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format

filename	description
indexed-names-resolved-mdd.csv.gz	taxonomic names found in the dataset under review aligned with the Mammal Diversity Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-mdd.html.gz	taxonomic names found in the dataset under review aligned with Mammal Diversity Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format
indexed-names-resolved-mdd.tsv.gz	taxonomic names found in the dataset under review aligned with Mammal Diversity Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-mdd.parquet	taxonomic names found in the dataset under review aligned with Mammal Diversity Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format
indexed-names-resolved-ncbi.csv.gz	taxonomic names found in the dataset under review aligned with the NCBI Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-ncbi.html.gz	taxonomic names found in the dataset under review aligned with the NCBI Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format

filename	description
indexed-names-resolved-ncbi.tsv.gz	taxonomic names found in the dataset under review aligned with the NCBI Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-ncbi.parquet	taxonomic names found in the dataset under review aligned with the NCBI Taxonomy as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format
indexed-names-resolved-pbdb.csv.gz	taxonomic names found in the dataset under review aligned with the Paleobiology Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-pbdb.html.gz	taxonomic names found in the dataset under review aligned with Paleobiology Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format
indexed-names-resolved-pbdb.tsv.gz	taxonomic names found in the dataset under review aligned with Paleobiology Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-pbdb.parquet	taxonomic names found in the dataset under review aligned with Paleobiology Database as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format

filename	description
indexed-names-resolved-tpt.csv.gz	taxonomic names found in the dataset under review aligned with the Terrestrial Parasite Tracker (TPT) Taxonomic Resource as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-tpt.html.gz	taxonomic names found in the dataset under review aligned with the Terrestrial Parasite Tracker (TPT) Taxonomic Resource as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format
indexed-names-resolved-tpt.tsv.gz	taxonomic names found in the dataset under review aligned with the Terrestrial Parasite Tracker (TPT) Taxonomic Resource as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-tpt.parquet	taxonomic names found in the dataset under review aligned with the Terrestrial Parasite Tracker (TPT) Taxonomic Resource as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format
indexed-names-resolved-wfo.csv.gz	taxonomic names found in the dataset under review aligned with the World of Flora Online as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-wfo.html.gz	taxonomic names found in the dataset under review aligned with the World of Flora Online as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format

filename	description
indexed-names-resolved-wfo.tsv.gz	taxonomic names found in the dataset under review aligned with the World of Flora Online as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-wfo.parquet	taxonomic names found in the dataset under review aligned with the World of Flora Online as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format
indexed-names-resolved-worms.csv.gz	taxonomic names found in the dataset under review aligned with the World Register of Marine Species (WoRMS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped comma-separated values format
indexed-names-resolved-worms.html.gz	taxonomic names found in the dataset under review aligned with the World Register of Marine Species (WoRMS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped html format
indexed-names-resolved-worms.tsv.gz	taxonomic names found in the dataset under review aligned with the World Register of Marine Species (WoRMS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in gzipped tab-separated values format
indexed-names-resolved-worms.parquet	taxonomic names found in the dataset under review aligned with the World Register of Marine Species (WoRMS) as accessed through the Nomer Corpus of Taxonomic Resources (J. H. (ed. ). Poelen 2024) in Apache Parquet format
indexed-names-sample.csv	first 500 taxonomic names found in the dataset under review in comma-separated values format

filename	description
indexed-names-sample.html	first 500 taxonomic names found in the dataset under review in html format
indexed-names-sample.tsv	first 500 taxonomic names found in the dataset under review in tab-separated values format
interaction.svg	diagram summarizing the data model used to index species interaction claims
nanopub-sample.trig	first 500 species interaction claims as expressed in the nanopub format (Kuhn and Dumontier 2014)
nanopub.trig.gz	species interaction claims as expressed in the nanopub format (Kuhn and Dumontier 2014)
process.svg	diagram summarizing the data review processing workflow
prov.nq	origin of the dataset under review as expressed in rdf/nquads
review.csv.gz	review notes associated with the dataset under review in gzipped comma-separated values format
review.html.gz	review notes associated with the dataset under review in gzipped html format
review.tsv.gz	review notes associated with the dataset under review in gzipped tab-separated values format
review-sample.csv	first 500 review notes associated with the dataset under review in comma-separated values format
review-sample.html	first 500 review notes associated with the dataset under review in html format
review-sample.tsv	first 500 review notes associated with the dataset under review in tab-separated values format
review.svg	a review badge generated as part of the dataset review process
zenodo.json	metadata of this review expressed in Zenodo record metadata

## Archived Dataset

Note that *data.zip* file in this archive contains the complete, unmodified archived dataset under review.

## Biotic Interactions

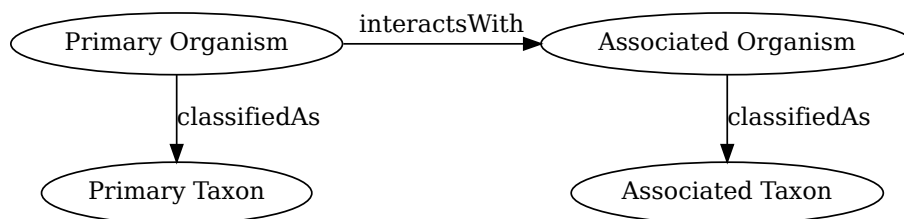


Figure 2: Biotic Interaction Data Model

In this review, biotic interactions (or biotic associations) are modeled as a primary (aka subject, source) organism interacting with an associate (aka object, target) organism. The dataset under review classified the primary/associate organisms with specific taxa. The primary and associate organisms The kind of interaction is documented as an interaction type.

The dataset under review, named `globalbioticinteractions/funfun`, has fingerprint hash://md5/f14538a049f49b18fa7cf9dfe76da463, is 3.62MiB in size and contains 98 interactions with 2 unique types of associations (e.g., `hasHost`) between 24 primary taxa (e.g., *Pleurotus ostreatus*) and 20 associated taxa (e.g., *Malvaceae*).

An exhaustive list of indexed interaction claims can be found in gzipped `csv`, `tsv`, `geopackage` and `parquet` archives. To facilitate discovery, a preview of claims available in the gzipped `html` page at `indexed-interactions.html.gz` are shown below.

The exhaustive list was used to create the following data summaries below.

Table 3: Sample of Indexed Interaction Claims

sourceTaxonName	interactionTypeName	targetTaxonName	referenceCitation
Rhizopus stolonifer	hasHost	Anacardiaceae	Anderson T (2008). 'Assessment of DNA contents of soil fungi.' Landbauforschung Volkenrode, 58(1/2), pp. 19.
Rhizopus stolonifer	hasHost	Fabaceae	Anderson T (2008). 'Assessment of DNA contents of soil fungi.' Landbauforschung Volkenrode, 58(1/2), pp. 19.
Thanatephorus cucumeris	hasHost	Fabaceae	Anderson T (2008). 'Assessment of DNA contents of soil fungi.' Landbauforschung Volkenrode, 58(1/2), pp. 19.
Trichoderma harzianum	hasHost	Asteraceae	Anderson T (2008). 'Assessment of DNA contents of soil fungi.' Landbauforschung Volkenrode, 58(1/2), pp. 19.

Table 4: Most Frequently Mentioned Interaction Types (up to 20 most frequent)

interactionTypeName	count
hasHost	83
pathogenOf	15

Table 5: Most Frequently Mentioned Primary Taxa (up to 20 most frequent)

sourceTaxonName	count
Pleurotus ostreatus	28
Trichoderma harzianum	15
Aureobasidium pullulans	10
Schizophyllum commune	5
Ilyonectria radicola	5
Rhizopus stolonifer	4
Thanatephorus cucumeris	4
Lunulospora curvula	4
Gibberella zeae	3
Kluyveromyces marxianus	3
Mucor racemosus	2
Neofusicoccum mangiferae	2
Ochrocladosporium elatum	2
Gibberella fujikuroi	1
Macrophomina phaseolina	1
Trichoderma koningii	1
Epicoccum nigrum	1
Nigrospora oryzae	1
Melanospora zamiae	1

Table 6: Most Frequently Mentioned Associate Taxa (up to 20 most frequent)

targetTaxonName	count
Malvaceae	32
Asteraceae	22
Fabaceae	9
Myrtaceae	7
Compositae	5
Anacardiaceae	4
Boraginaceae	3
Poaceae	2
broad host range	2
Orchidaceae	2
Homo sapiens	1
Lamiaceae	1
Homo sapiens; Lamiaceae	1
Sapotaceae	1
Arecaceae	1

targetTaxonName	count
Combretaceae	1
Euphorbiaceae	1
Marattiaceae	1
Rubiaceae	1

Table 7: Most Frequent Interactions between Primary and Associate Taxa (up to 20 most frequent)

sourceTaxonName	interactionTypeName	targetTaxonName	count
Pleurotus ostreatus	hasHost	Malvaceae	28
Aureobasidium pullulans	pathogenOf	Asteraceae	10
Trichoderma harzianum	hasHost	Asteraceae	5
Trichoderma harzianum	hasHost	Compositae	5
Trichoderma harzianum	hasHost	Myrtaceae	5
Ilyonectria radiciala	hasHost	Asteraceae	5
Thanatephorus cucumeris	hasHost	Fabaceae	4
Gibberella zeae	hasHost	Malvaceae	3
Kluyveromyces marxianus	hasHost	Boraginaceae	3
Rhizopus stolonifer	hasHost	Anacardiaceae	2
Rhizopus stolonifer	hasHost	Fabaceae	2
Schizophyllum commune	pathogenOf	Myrtaceae	2
Mucor racemosus	hasHost	Poaceae	2
Neofusicoccum mangiferae	hasHost	Anacardiaceae	2
Gibberella fujikuroi	hasHost	Malvaceae	1
Macrophomina phaseolina	hasHost	Fabaceae	1
Schizophyllum commune	pathogenOf	Homo sapiens	1
Schizophyllum commune	pathogenOf	Lamiaceae	1
Schizophyllum commune	pathogenOf	Homo sapiens; Lamiaceae	1

### Interaction Networks

The figures below provide a graph view on the dataset under review. The first shows a summary network on the kingdom level, and the second shows how interactions on the family level. It is important to note that both network graphs were first aligned taxonomically using the Catalogue of Life. Please refer to the original (or verbatim) taxonomic names for a more original view on the interaction data.

You can download the indexed dataset under review at [indexed-interactions.csv.gz](#). A tab-separated file can be found at [indexed-interactions.tsv.gz](#)



## Geospatial Distribution

If geospatial information was extracted from the dataset under review, the map below will show their distribution. These maps were generated using MapServer (McKenna et al. 2025) tools configured via map configuration indexed-interactions.map :

```
MAP
  SIZE 1600 800
  EXTENT -180 -90 180 90
  PROJECTION
    "init=epsg:4326"
  END
  LAYER # MODIS WMS map from NASA
    NAME "modis_nasa"
    TYPE RASTER
    OFFSITE 0 0 0
    STATUS ON
    CONNECTIONTYPE WMS
    CONNECTION "https://gibs.earthdata.nasa.gov/wms/epsg4326/best/wms.cgi?"

  METADATA
    "wms_srs" "EPSG:4326"
    "wms_name" "OSM_Land_Water_Map"
    "wms_server_version" "1.1.1"
    "wms_format" "image/jpeg"
  END
  CLASS
    STYLE
      COLOR 232 232 232
      OUTLINECOLOR 32 32 32
    END
  END
  LAYER
    NAME "indexed-interactions"
    TYPE POLYGON
    STATUS ON
    CONNECTIONTYPE OGR
    CONNECTION "indexed-interactions-h3.gpkg"
    DATA "indexed-interactions-h3"
    CLASS
      STYLE
        COLORRANGE 253.0 231.0 37.0 32.0 164.0 134.0
        DATARANGE NULL NULL
        RANGEITEM "log_number_of_records"
```

```

        OUTLINECOLOR 0 0 0
      END
    END
  END
END

```

Hexagonal grid cells indicate that interactions claims are available for selected geospatial area: light yellow means relatively fewer claims, dark green relatively more claims.

Figure 5: Hexagonal grid cells indicate that interactions claims are available for selected geospatial area: light yellow means relatively fewer claims, dark green relatively more claims.

Associated data can be found in the geopackage files at indexed-interactions.gpkg for point data and indexed-interactions-h3.gpkg for data clustered in geospatial h3 hexagonals.

Learn more about the structure of this download at GloBI website, by opening a GitHub issue, or by sending an email.

Another way to discover the dataset under review is by searching for it on the GloBI website.

## Taxonomic Alignment

As part of the review, all names are aligned against various name catalogs (e.g., col, ncbi, discoverlife, gbif, itis, wfo, mdd, tpt, pbdb, and worms). These alignments can help review name usage or aid in selecting of a suitable taxonomic name resource.

Table 8: Sample of Name Alignments

providedName	relationName	resolvedCatalogName	resolvedName
Anacardiaceae	HAS_ACCEPTED_NAME	col	Anacardiaceae
Arecaceae	HAS_ACCEPTED_NAME	col	Arecaceae
Asteraceae	HAS_ACCEPTED_NAME	col	Asteraceae
Boraginaceae	HAS_ACCEPTED_NAME	col	Boraginaceae

Table 9: Distribution of Taxonomic Ranks of Aligned Names by Catalog. Names that were not aligned with a catalog are counted as NAs. So, the total number of unaligned names for a catalog will be listed in their NA row.

resolvedCatalogName	resolvedRank	count
col	NA	1
col	family	17
col	genus	1
col	species	24
discoverlife	NA	43
gbif	NA	1
gbif	family	17
gbif	genus	1
gbif	species	24
itis	NA	24
itis	family	17
itis	genus	1
itis	species	1
mdd	NA	43
ncbi	NA	2
ncbi	family	16
ncbi	genus	1
ncbi	species	24
pbdb	NA	25
pbdb	family	17
pbdb	species	1
tpt	NA	42
tpt	species	1
wfo	NA	26
wfo	family	17
worms	NA	10
worms	family	16
worms	genus	1
worms	species	15
worms	subfamily	1

Table 10: Name relationship types per catalog. Name relationship type “NONE” means that a name was not recognized by the associated catalog. “SAME\_AS” indicates either a “HAS\_ACCEPTED\_NAME” or “SYNONYM\_OF” name relationship type. We recognize that “SYNONYM\_OF” encompasses many types of nomenclatural synonymies (ICZN 1999) (e.g., junior synonym, senior synonyms).

resolvedCatalogName	relationName	count
col	HAS_ACCEPTED_NAME	39
col	NONE	1
col	SYNONYM_OF	5
discoverlife	NONE	44
gbif	HAS_ACCEPTED_NAME	42
gbif	NONE	1
gbif	SYNONYM_OF	7
itis	HAS_ACCEPTED_NAME	19
itis	NONE	24
itis	SYNONYM_OF	1
mdd	NONE	42
mdd	HAS_ACCEPTED_NAME	2
ncbi	SAME_AS	37
ncbi	NONE	2
ncbi	SYNONYM_OF	5
pbdb	HAS_ACCEPTED_NAME	18
pbdb	NONE	25
pbdb	SYNONYM_OF	1
tpt	NONE	42
tpt	HAS_ACCEPTED_NAME	2
wfo	HAS_ACCEPTED_NAME	16
wfo	NONE	27
wfo	SYNONYM_OF	1
worms	HAS_ACCEPTED_NAME	33
worms	NONE	10
worms	SYNONYM_OF	2

Table 11: List of Available Name Alignment Reports

catalog name	alignment results
col	associated names alignments report in zipped html, csv, and tsv)
ncbi	associated names alignments report in zipped html, csv, and tsv)

catalog name	alignment results
discoverlife	associated names alignments report in gzipped html, csv, and tsv)
gbif	associated names alignments report in gzipped html, csv, and tsv)
itis	associated names alignments report in gzipped html, csv, and tsv)
wfo	associated names alignments report in gzipped html, csv, and tsv)
mdd	associated names alignments report in gzipped html, csv, and tsv)
tpt	associated names alignments report in gzipped html, csv, and tsv)
pbdb	associated names alignments report in gzipped html, csv, and tsv)
worms	associated names alignments report in gzipped html, csv, and tsv)

## Additional Reviews

Elton, Nomer, and other tools may have difficulties interpreting existing species interaction datasets. Or, they may misbehave, or otherwise show unexpected behavior. As part of the review process, detailed review notes are kept that document possibly misbehaving, or confused, review bots. An sample of review notes associated with this review can be found below.

Table 12: First few lines in the review notes.

reviewDate	reviewCommentType	reviewComment
2026-03-30T22:29:10Z	note	source taxon name missing
2026-03-30T22:29:10Z	note	source taxon name missing
2026-03-30T22:29:10Z	note	source taxon name missing
2026-03-30T22:29:10Z	note	source taxon name missing

In addition, you can find the most frequently occurring notes in the table below.

Table 13: Most frequently occurring review notes, if any.

reviewComment	count
source taxon name missing	15

For additional information on review notes, please have a look at the first 500 Review Notes in html format or the download full gzipped csv or tsv archives.

## GloBI Review Badge

As part of the review, a review badge is generated. This review badge can be included in webpages to indicate the review status of the dataset under review.



Figure 6: Picture of a GloBI Review Badge <sup>3</sup>

Note that if the badge is green, no review notes were generated. If the badge is yellow, the review bots may need some help with interpreting the species interaction data.

## GloBI Index Badge

If the dataset under review has been registered with GloBI, and has been successfully indexed by GloBI, the GloBI Index Status Badge will turn green. This means that the dataset under review was indexed by GloBI and is available through GloBI services and derived data products.



Figure 7: Picture of a GloBI Index Badge <sup>4</sup>

If you'd like to keep track of reviews or index status of the dataset under review, please visit GloBI's dataset index <sup>5</sup> for badge examples.

## Discussion

This review and archive provides a means of creating citable versions of datasets that change frequently. This may be useful for dataset managers, including natural history collection data managers, as a backup archive of a shared Darwin Core archive. It also serves as a means of creating a trackable citation for the dataset in an automated way, while also including some information about the contents of the dataset.

This review aims to provide a perspective on the dataset to aid in understanding of species interaction claims discovered. However, it is important to note that this review does *not* assess the quality of the dataset. Instead, it serves as an

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<sup>3</sup>Up-to-date status of the GloBI Review Badge can be retrieved from the GloBI Review Depot

<sup>4</sup>Up-to-date status of the GloBI Index Badge can be retrieved from GloBI's API

<sup>5</sup>At time of writing (2026-03-31) the version of the GloBI dataset index was available at <https://globalbioticinteractions.org/datasets>

indication of the open-ness<sup>6</sup> and FAIRness (Wilkinson et al. 2016; Trekels et al. 2023) of the dataset: to perform this review, the data was likely openly available, **F**indable, **A**ccessible, **I**nteroperable and **R**eusable. The current Open-FAIR assessment is qualitative, and a more quantitative approach can be implemented with specified measurement units.

This report also showcases the reuse of machine-actionable (meta)data, something highly recommended by the FAIR Data Principles (Wilkinson et al. 2016). Making (meta)data machine-actionable enables more precise processing by computers, enabling even naive review bots like Nomer and Elton to interpret the data effectively. This capability is crucial for not just automating the generation of reports, but also for facilitating seamless data exchanges, promoting interoperability.

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## Author contributions

Nomer was responsible for name alignments. Elton carried out dataset extraction, and generated the review notes. Preston tracked, versioned, and packaged, the dataset under review.

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<sup>6</sup>According to <http://opendefinition.org/>: “Open data is data that can be freely used, reused and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike.”

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