Versioned Archive and Review of Biotic Interactions and Taxon Names Found within globalbioticinteractions/beefunc hash://md5/398ade2d8a05f880b361e3a29595f417

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

2025-12-08

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/beefunc, has fingerprint hash://md5/398ade2d8a05f880b361e3a29595f417, is 3.40MiB in size and contains 5,111 interactions with 2 unique types of associations (e.g., pollinates) between 724 primary taxa (e.g., Andrena nigroaenea) and 624 associated taxa (e.g., Asteraceae). This report includes detailed summaries of interaction data, a taxonomic review from multiple catalogs, and an archived version of the dataset from which the reviews are derived.

Contents

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 :

> Aubouin, L., Genoud, D., Givord-Coupeau, B. et al. BeeFunc, a comprehensive trait database for French bees. Sci Data 12, 1302 (2025). https://doi.org/10.1038/s41597-025-05626-0 https://github.com/globalbioticinteractions/beefunc/archive/4c7fbd058ab97af75bb687861b1b1bf70af33d 2025-12-06T00:33:48.857Z hash://md5/398ade2d8a05f880b361e3a29595f417

For additional metadata related to this dataset, please visit https://github.com/globalbioticinteractions/beefunc 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	0.15.13
nomer	0.5.17
globinizer	0.4.0
mlr	6.0.0
jq	1.6
yq	4.25.3
pandoc	3.1.6.1
duckdb	1.3.1

The review process can be described in the form of the script below [1].

```
# get versioned copy of the dataset (size approx. 3.40MiB) under review
elton pull globalbioticinteractions/beefunc

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

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

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

or visually, in a process diagram.

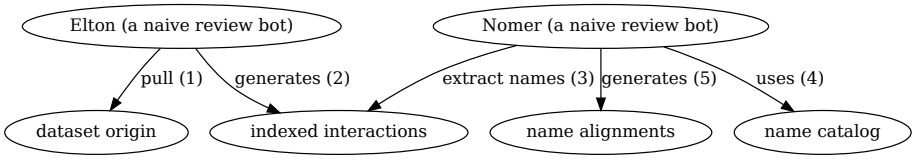

Figure 1: Review Process Overview

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

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

Results

In the following sections, the results of the review are summarized [2]. 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
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)

[2]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-kingdom-col-kingdom.svg	network diagram showing the taxon kingdom to taxon kingom 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-sample.csv	list of species interaction claims indexed from the dataset under review in gzipped comma-separated values format
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

filename	description
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
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

filename	description
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
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

filename	description
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
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

filename	description
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
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

filename	description
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
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

filename	description
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
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

filename	description
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
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)

filename	description
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

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/beefunc, has finger-

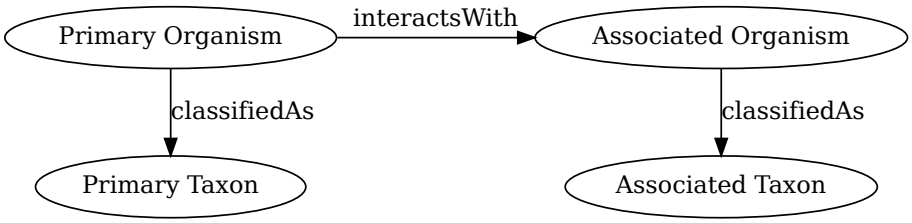

Figure 2: Biotic Interaction Data Model

print hash://md5/398ade2d8a05f880b361e3a29595f417, is 3.40MiB in size and contains 5,111 interactions with 2 unique types of associations (e.g., pollinates) between 724 primary taxa (e.g., Andrena nigroaenea) and 624 associated taxa (e.g., Asteraceae).

An exhaustive list of indexed interaction claims can be found in gzipped csv, tsv 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
Andrena pallitarsis	pollinates	Falcaria	Scheuchl E., Willner W. 2016. Taschenlexikon der Wildbienen Europas. Quelle & Meyer Verlag Wiebelsheim. 920pp.
Andrena nitidiuscula	pollinates	Falcaria	SwissBeeTeam. 2018. Atlas en ligne des abeilles sauvages de Suisse. InfoFauna. http://swisswildbee.ch.

sourceTaxonName	interactionTypeName	targetTaxonName	referenceCitation
Andrena nitidiuscula	pollinates	Falcaria	Scheuchl E., Willner W. 2016. Taschenlexikon der Wildbienen Europas. Quelle & Meyer Verlag Wiebelsheim. 920pp.
Andrena fulvicornis	pollinates	Falcaria	Schmid-Egger C., Doczkal D. 1995. Der taxonomische Status von Andrena fulvicornis Schenck, 1853 (Hymenoptera, Apidae). Entomofauna, 16: 1-12.

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

interactionTypeName	count
pollinates	3679
kleptoparasiteOf	1432

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

sourceTaxonName	count
Andrena nigroaenea	125
Nomada fulvicornis	96
Andrena nigriceps	72
Eucera rufa	68
Andrena lapponica	64
Nomada marshamella	56
Andrena synadelpha	54
Andrena simillima	54

sourceTaxonName	count
Andrena varians	52
Nomada stigma	45
Andrena coitana	42
Panurginus montanus	40
Andrena flavilabris	36
Nomada fabriciana	36
Nomada panzeri	36
Nomada striata	36
Andrena helvola	35
Nomada guttulata	35
Andrena fucata	34

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

targetTaxonName	count
Asteraceae	334
Fabaceae	246
Andrena	243
Lamiaceae	170
Brassicaceae	169
Rosaceae	138
Boraginaceae	115
Apiaceae	114
Salicaceae	89
Campanulaceae	83
Cistaceae	79
Ranunculaceae	72
Scrophulariaceae	57
Lasioglossum	55
Ericaceae	49
Plantaginaceae	47
Caryophyllaceae	45
Echium	43
Salix	39

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

sourceTaxonName	interactionTypeName	targetTaxonName	count
Nomada fulvicornis	kleptoparasiteOf	Andrena nigroaenea	12
Nomada fulvicornis	kleptoparasiteOf	Andrena nigrospina	12
Nomada fulvicornis	kleptoparasiteOf	Andrena agilissima	12
Nomada fulvicornis	kleptoparasiteOf	Andrena nitida	12
Nomada fulvicornis	kleptoparasiteOf	Andrena pilipes	12
Nomada fulvicornis	kleptoparasiteOf	Andrena thoracica	12
Nomada fulvicornis	kleptoparasiteOf	Andrena tibialis	12
Nomada stigma	kleptoparasiteOf	Andrena decipiens	9
Nomada stigma	kleptoparasiteOf	Andrena ferrugineicrus	9
Nomada stigma	kleptoparasiteOf	Andrena flavilabris	9
Nomada stigma	kleptoparasiteOf	Andrena labialis	9
Nomada stigma	kleptoparasiteOf	Andrena	9
Nomada mutabilis	kleptoparasiteOf	Andrena chrysopyga	8
Nomada marshamella	kleptoparasiteOf	Andrena nigroaenea	8
Nomada mutabilis	kleptoparasiteOf	Andrena	8
Nomada marshamella	kleptoparasiteOf	Andrena	8
Nomada roberjeotiana	kleptoparasiteOf	Andrena denticulata	8
Nomada roberjeotiana	kleptoparasiteOf	Andrena fuscipes	8
Nomada marshamella	kleptoparasiteOf	Andrena ferox	8

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.

Figure 3: Interactions on taxonomic kingdom rank as interpreted by the Catalogue of Life download svg

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

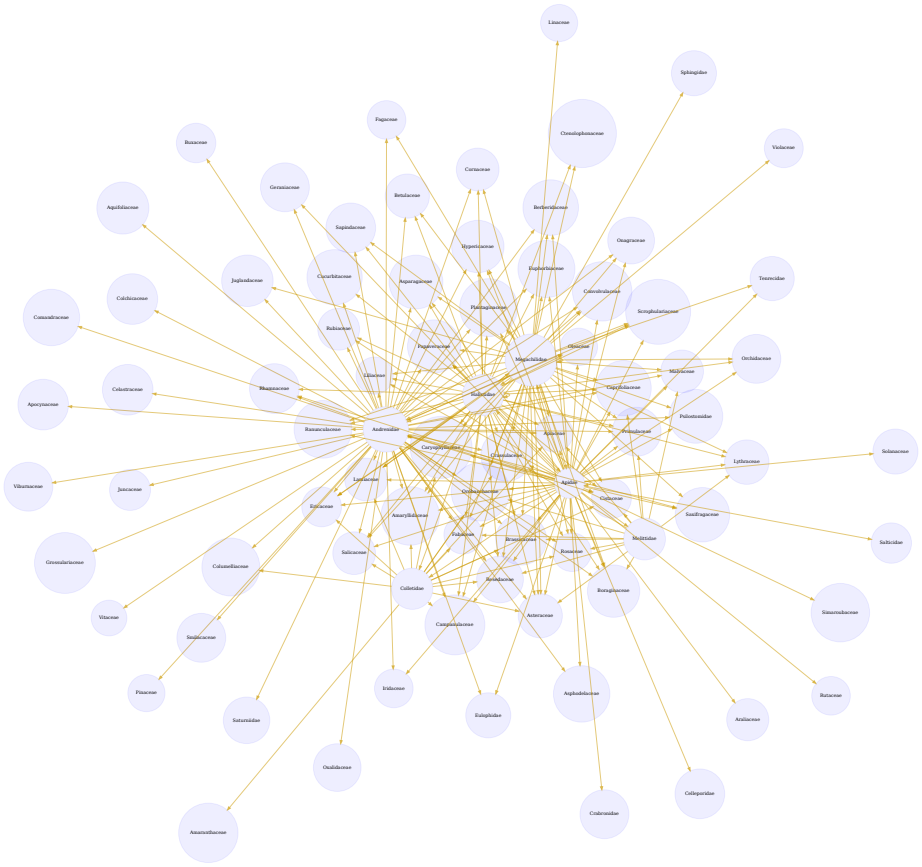

Figure 4: Interactions on the taxonomic family rank as interpreted by the Catalogue of Life. download svg

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
Aceraceae	SYNONYM_OF	col	Sapindaceae
Aceraceae	SYNONYM_OF	col	Hippocastanoideae
Acer	HAS_ACCEPTED_NAME	col	Acer
Acer platanoides	HAS_ACCEPTED_NAME	col	Acer platanoides

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	22
col	family	67
col	genus	206
col	species	818
col	subfamily	7
col	subgenus	1
col	subspecies	12
discoverlife	NA	361
discoverlife	species	753
gbif	NA	3
gbif	family	69
gbif	genus	207
gbif	species	833
gbif	subspecies	18
gbif	variety	2
itis	NA	43
itis	family	69

resolvedCatalogName	resolvedRank	count
itis	genus	198
itis	species	803
itis	subspecies	1
mdd	NA	1114
ncbi	NA	192
ncbi	family	66
ncbi	genus	204
ncbi	species	649
ncbi	subfamily	1
ncbi	subgenus	5
ncbi	subspecies	1
pbdb	NA	963
pbdb	family	68
pbdb	genus	81
pbdb	species	2
tpt	NA	1113
tpt	genus	1
wfo	NA	781
wfo	family	66
wfo	genus	188
wfo	species	79
wfo	subspecies	3
worms	NA	921
worms	family	54
worms	genus	116
worms	species	23
worms	subspecies	2

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	SYNONYM_OF	177
col	HAS_ACCEPTED_NAME	1068
col	NONE	22
discoverlife	NONE	359
discoverlife	HAS_ACCEPTED_NAME	727

resolvedCatalogName	relationName	count
discoverlife	SYNONYM_OF	165
discoverlife	HOMONYM_OF	51
gbif	HAS_ACCEPTED_NAME	1207
gbif	SYNONYM_OF	240
gbif	NONE	3
itis	SYNONYM_OF	74
itis	HAS_ACCEPTED_NAME	1040
itis	NONE	43
mdd	NONE	1114
ncbi	SAME_AS	910
ncbi	SYNONYM_OF	28
ncbi	NONE	192
pbdb	SYNONYM_OF	8
pbdb	HAS_ACCEPTED_NAME	149
pbdb	NONE	963
tpt	NONE	1113
tpt	HAS_ACCEPTED_NAME	1
wfo	NONE	781
wfo	HAS_ACCEPTED_NAME	317
wfo	SYNONYM_OF	45
wfo	HAS_UNCHECKED_NAME	29
worms	NONE	921
worms	HAS_ACCEPTED_NAME	205
worms	SYNONYM_OF	21

Table 11: List of Available Name Alignment Reports

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

catalog name	alignment results
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
2025-12-08T10:25:29Z	summary	https://github.com/globalbioticinteractions/beefunc/ar
2025-12-08T10:25:29Z	summary	5111 interaction(s)
2025-12-08T10:25:29Z	summary	0 note(s)
2025-12-08T10:25:29Z	summary	5111 info(s)

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

: Most frequently occurring review notes, if any.

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 5: Picture of a GloBI Review Badge [3]

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.

[3] Up-to-date status of the GloBI Review Badge can be retrieved from the GloBI Review Depot

GloBI Index Badge

If the dataset under review has been registered with GloBI, and has been succesfully 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 6: Picture of a GloBI Index Badge [4]

If you'd like to keep track of reviews or index status of the dataset under review, please visit GloBI's dataset index [5] 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 indication of the open-ness[6] 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 procesing 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.

[4] Up-to-date status of the GloBI Index Badge can be retrieved from GloBI's API

[5] At time of writing (2025-12-08) the version of the GloBI dataset index was available at https://globalbioticinteractions.org/datasets

[6] 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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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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