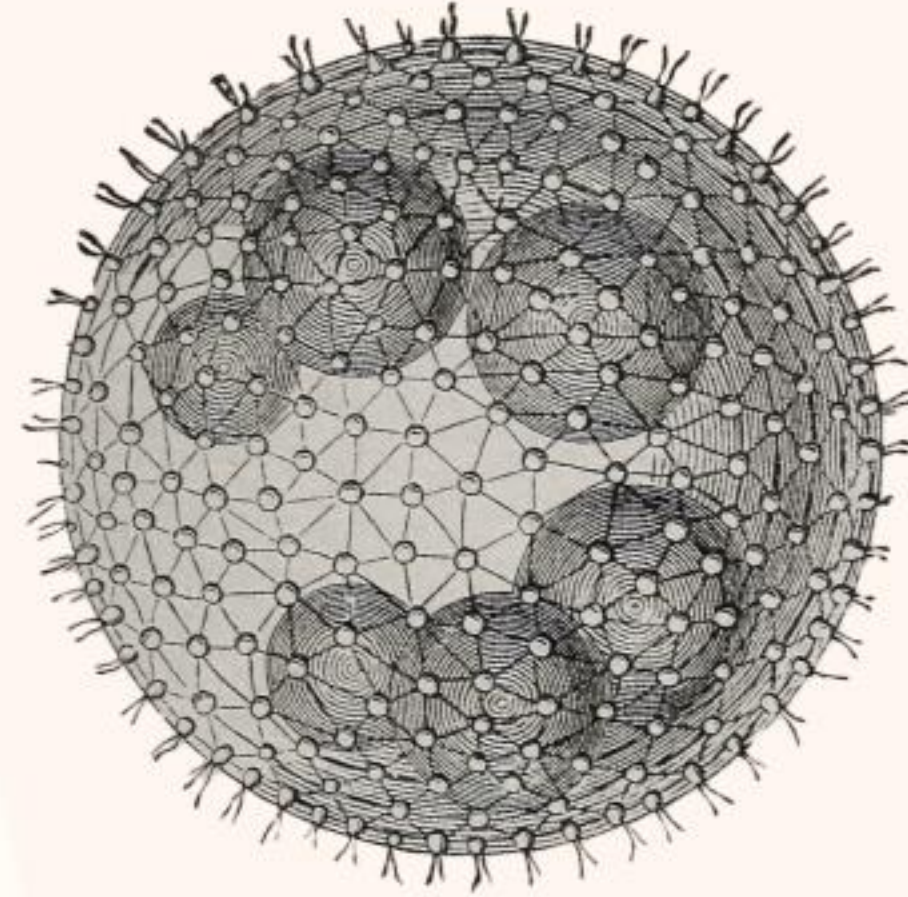


Data Use Club



# Accessing and downloading species information

 *Practical sessions*



# Accessing species information from GBIF

GBIF.org and GBIF Species API



*Ceratodon purpureus* (Hedw.) Brid. observed in Belgium by Frederik V. Holsbeeck (licensed under <http://creativecommons.org/licenses/by-nc/4.0/>)

# Checklists on GBIF

The screenshot shows the GBIF interface for a checklist dataset. At the top, there is a green header with a leaf icon and navigation icons. Below the header, the text reads 'CHECKLIST DATASET | REGISTERED OCTOBER 4, 2019' and 'Azores cetaceans updated checklist'. It is published by 'Universidade dos Açores' and 'Azevedo J • Barreiros J P'. A '59 RECORDS' button is visible. A navigation bar includes 'DATASET', 'TAXONOMY', 'PROJECT', 'METRICS', and 'DOWNLOAD'. A section titled 'BECAUSE YOU ARE TRUSTED CONTACT' contains a 'HISTORY' button and 'INGEST NOW' and 'LOGS' links. The main content area features a paragraph about the checklist, a 'Publication date' of October 8, 2019, 'Metadata last modified' on the same date, and 'Hosted by: Instituto Superior de Agronomia / Universidade de Lisboa'. The license is 'CC BY 4.0' with a DOI of 10.15468/dmrkx9. At the bottom, four circular progress indicators show: 59 Accepted names, 0 Synonyms, 94% Overlap with GBIF Backbone, and 94% Overlap with Catalogue of Life.

- Scientific names of organisms sharing a common theme or feature
- For example:
  - Taxonomy of a group: Sphagnopsida
  - Same geographic scope: Kenya
  - Theme: medicinal use

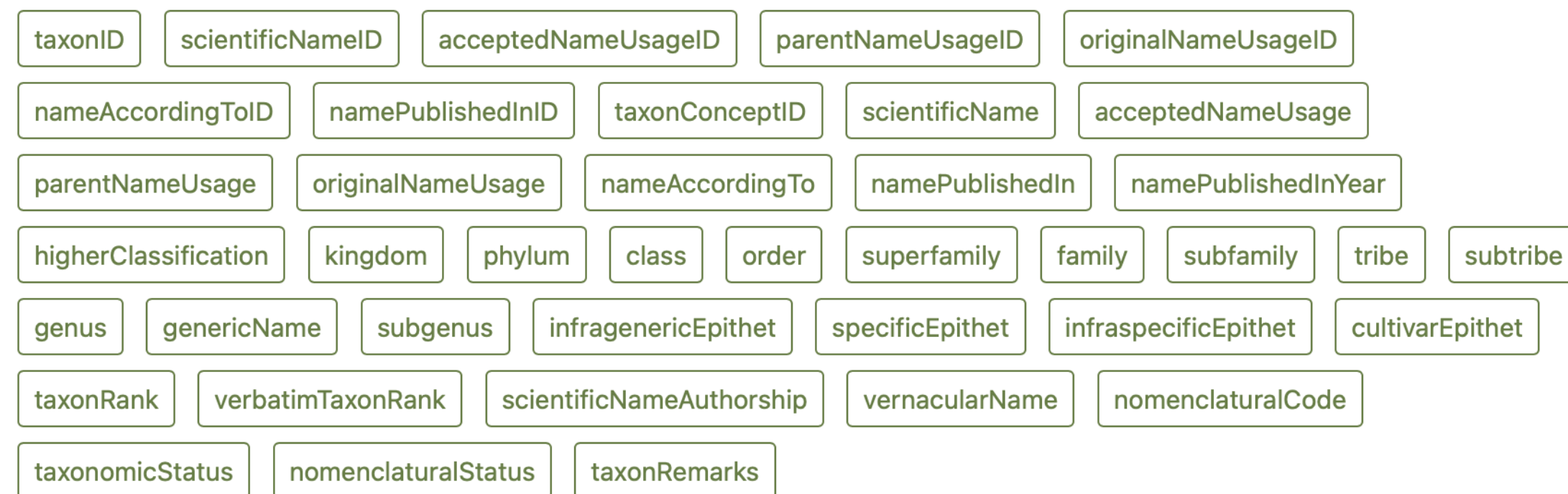


## Checklists on GBIF – structure



# Checklists on GBIF – structure – taxon core

## Taxon



Taxon <span style="float: right;">Class</span>	
Identifier	<a href="http://rs.tdwg.org/dwc/terms/Taxon">http://rs.tdwg.org/dwc/terms/Taxon</a>
Definition	A group of organisms (sensu <a href="http://purl.obolibrary.org/obo/OBI_0100026">http://purl.obolibrary.org/obo/OBI_0100026</a> ) considered by taxonomists to form a homogeneous unit.
Comments	
Examples	the genus <i>Truncorotaloides</i> as published by Brönnimann et al. in 1953 in the Journal of Paleontology Vol. 27(6) p. 817–820

<https://dwc.tdwg.org/terms/#taxon>

### On this page

- Record-level
- Occurrence
- Organism
- MaterialEntity
- MaterialSample
- Event
- Location
- GeologicalContext
- Identification
- Taxon
- MeasurementOrFact
- ResourceRelationship
- UseWithIRI
- LivingSpecimen
- PreservedSpecimen
- FossilSpecimen
- MaterialCitation
- HumanObservation
- MachineObservation
- Cite Darwin Core



# Checklists on GBIF – structure - possible extensions



## GBIF Backbone vs other checklists

- GBIF Backbone Taxonomy:
  - Specific checklist
  - Assembled from selected checklists
  - All names organized and matched to it
- Other checklists:
  - All names are matched to the Backbone
  - Source of additional information

Data Use Club

# Name matching and the GBIF Taxonomic Backbone

 *Practical sessions*

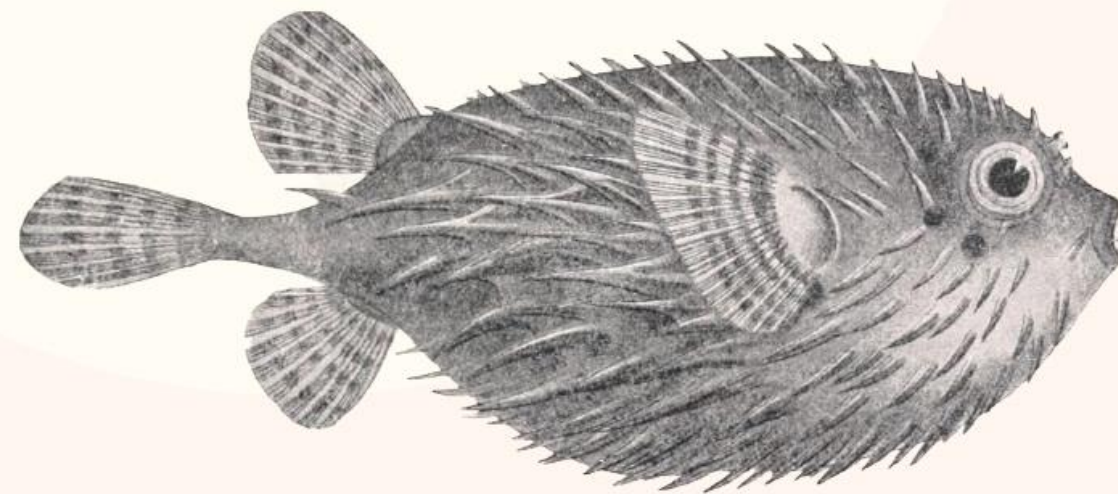


# GBIF API

Data Use Club

## Introduction to the API, rgbif and pygbif

 *Practical sessions*



- Access programmatically:  
occurrences, taxa, registry, maps,  
literature
- Limitation (everything except  
occurrence downloads):
  - Up to 10,000 records in total
  - 300 records per page





## GBIF Species API – functions and output

species/match

- Matches to scientific names
- GBIF Backbone taxonomy
- Returns taxonomy and **usageKey**



## GBIF Species API – functions and output

species/match

species/search

species/suggest

- Matches to scientific names, description and vernacular name
- Any GBIF checklist
- Additional filters: threat, habitat, etc.
- Returns taxonomy, key and nubKey



## GBIF Species API – functions and output

species/match

species/search

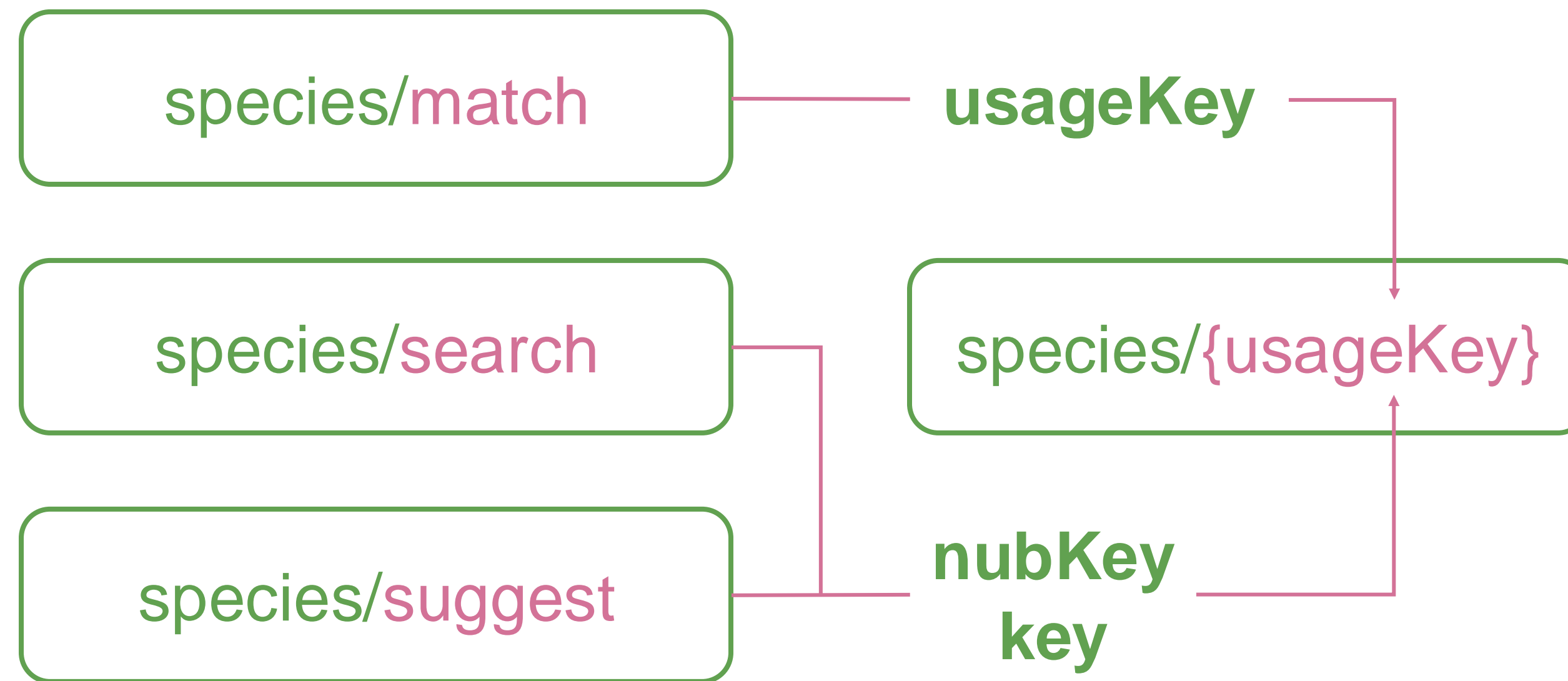
species/suggest

species/{usageKey}

- Specific taxon record
- From any checklist
- Vernacular names, synonyms, metrics, etc.



# GBIF Species API – functions and output



# GBIF Species API – functions and output

species/match

species/search

species/suggest

species/{usageKey}

parser/name



# Taxon page – backbone taxonomy

species/{usageKey}/

The screenshot displays the GBIF Backbone Taxonomy page for *Orcinus orca* (Linnaeus, 1758). The page is structured as follows:

- Classification:** A sidebar on the left lists the taxonomic hierarchy: Kingdom: Animalia, Phylum: Chordata, Class: Mammalia, Order: Cetacea, Family: Delphinidae, Genus: *Orcinus* Fitzinger, 1860, and Species: *Orcinus orca* (Linnaeus, 1758). Below the species name, a list of synonyms is provided, including *Delphinus duhameli* Lacépède, 1804, *Delphinus gladiator* Bonnaterre, 1789, *Delphinus grampus* Blainville, 1817, *Delphinus orca* Linnaeus, 1758, *Delphinus orca* subsp. *ensidoratus* Kerr, 1792, *Delphinus serra* Borowski, 1780, *Delphinus victorini* Grill, 1858, *Grampus orca* Iredale & Troughton, 1933, *Grampus rectipinna* Scheffer, 1942, *Grampus vectipinna* Branson, 1971, *Ophysia pacifica* Gray, 1870, *Orca africana* Gray, 1871, *Orca antarctica* Fischer, 1876, and *Orca ater* Cope, 1869.
- Species Information:** The main content area features a box with the species name *Orcinus orca* (Linnaeus, 1758), its publication details (Syst. Nat., 10th ed. vol.1 p.77), its inclusion in GBIF Backbone Taxonomy, and its basionym (*Delphinus orca* Linnaeus, 1758).
- Overview and Metrics:** Below the species information, there are tabs for OVERVIEW, TREATMENTS (4), and METRICS. The metrics section shows 22,846 OCCURRENCES and 3 INFRASPECIES.
- Gallery:** A section titled "3,570 OCCURRENCES WITH IMAGES" displays a gallery of five photographs of orcas. A "SEE GALLERY" button is located at the bottom right of the gallery.
- Georeferenced Records:** A world map shows 13,964 GEOREFERENCED RECORDS, represented by yellow dots indicating the global distribution of orcas. A scale bar indicates 5000 km, and a time filter is set to "Any year" from 1783 to 2024.

- Name and authorship
- Taxonomic status
- Reference publication
- Source
- Classification
- Child taxa



# Taxon page – occurrences aggregated

Classification

Kingdom: Animalia  
Phylum: Chordata  
Class: Mammalia  
Order: Cetacea  
Family: Delphinidae  
Genus: *Orcinus* Fitzinger, 1860

Species: *Orcinus orca* (Linnaeus, 1758)

- = *Delphinus duhameli* Lacépède, 1804
- = *Delphinus gladiator* Bonnaterre, 1789
- = *Delphinus grampus* Blainville, 1817
- = *Delphinus grampus* Desmarest, 1817
- = *Delphinus orca* Linnaeus, 1758
- = *Delphinus orca* subsp. *ensidoratus* Kerr, 1792
- = *Delphinus serra* Borowski, 1780
- = *Delphinus victorini* Grill, 1858
- = *Grampus orca* Iredale & Troughton, 1933
- = *Grampus rectipinna* Scheffer, 1942
- = *Grampus vectipinna* Branson, 1971
- = *Ophysia pacifica* Gray, 1870
- = *Orca africana* Gray, 1871
- = *Orca antarctica* Fischer, 1876
- = *Orca ater* Cope, 1869

SPECIES | ACCEPTED

## *Orcinus orca* (Linnaeus, 1758)

Published in: Syst. Nat., 10th ed. vol.1 p.77  
In: GBIF Backbone Taxonomy  
Epaular: In English Basionym: *Delphinus orca* Linnaeus, 1758

OVERVIEW 4 TREATMENTS METRICS 22,846 OCCURRENCES 3 INFRASPECIES

3,570 OCCURRENCES WITH IMAGES

13,964 GEOREFERENCED RECORDS

occurrence/search

map/occurrence/

- Metrics
- Gallery
- Map
- Type specimens
- Which occurrence datasets the name appears in



# Taxon pages – treatments

The screenshot displays the GBIF Backbone Taxonomy page for *Orcinus orca* (Linnaeus, 1758). The page is structured as follows:

- Navigation:** Top bar with links for Get data, How-to, Tools, Community, and About. A search bar and a Login button are also present.
- Classification:** A sidebar on the left shows the taxonomic hierarchy: Kingdom: Animalia, Phylum: Chordata, Class: Mammalia, Order: Cetacea, Family: Delphinidae, Genus: *Orcinus* Fitzinger, 1860.
- Species Information:** The main content area shows the species name *Orcinus orca* (Linnaeus, 1758) with the status "SPECIES | ACCEPTED". It includes publication details: "Published in: Syst. Nat., 10th ed. vol.1 p.77" and "In: GBIF Backbone Taxonomy". It also lists the epaulard "In English" and the basionym "*Delphinus orca* Linnaeus, 1758".
- Overview and Metrics:** A navigation bar below the species name shows "OVERVIEW", "4 TREATMENTS" (highlighted), and "METRICS". Metrics include "22,846 OCCURRENCES" and "3 INFRASPECIES".
- Treatments:** A list of treatments is shown, with the first one highlighted in an orange rounded rectangle:
  - Mammals of Korea: a review of their taxonomy, distribution and conservation status**  
In: Jo, Yeong-Seok, Baccus, John T., Koprowski, John L. (2018): Mammals of Korea: a review of their taxonomy, distribution and conservation status. Zootaxa 4522 (1): 1-216, DOI: 10.11646/zootaxa.4522.1.1  
Mediated through: Plazi.org taxonomic treatments database

The highlighted treatment includes a list of synonyms for *Orcinus orca* (Linnaeus, 1758) and a map showing the species' range in the East Sea and around Jeju Island. The map is titled "FIGURES" and shows the distribution area in orange.

- Digitization of publications published by PLAZI.org
- May contain images

<https://github.com/gbif/portal16/issues/1385>





# Taxon pages – IUCN Red List of Threatened Species

The screenshot displays the IUCN Red List of Threatened Species page for *Orcinus orca*. The page is structured as follows:

- Classification:** Kingdom: Animalia, Phylum: Chordata, Class: Mammalia, Order: Cetacea, Family: Delphinidae, Genus: *Orcinus* Fitzinger, 1860.
- Species:** *Orcinus orca* (Linnaeus, 1758). Synonyms listed include *Delphinus duhameli* Lacépède, 1804; *Delphinus gladiator* Bonnaterre, 1789; *Delphinus grampus* Blainville, 1817; *Delphinus grampus* Desmarest, 1817; *Delphinus orca* Linnaeus, 1758; *Delphinus orca* subsp. *ensidoratus* Kerr, 1792; *Delphinus serra* Borowski, 1780; *Delphinus victorini* Grill, 1858; *Grampus orca* Iredale & Troughton, 1933; *Grampus rectipinna* Scheffer, 1942; *Grampus vectipinna* Branson, 1971; *Ophysia pacifica* Gray, 1870; *Orca africana* Gray, 1871; *Orca antarctica* Fischer, 1876; and *Orca ater* Cope, 1869.
- Conservation:** STATUS: CITES - Appendix II. source: Order Cetacea.
- Discussion:** COMMENTS: Reviewed by Heyning and Dahlheim (1988, Mammalian Species, 304). source: Order Cetacea.
- Materials Examined:** TYPE LOCALITY: E North Atlantic ("Oceano Europaeo"). source: Order Cetacea.
- Synonymic List:** SYNONYMS: *ater*, *capensis*, *gladiator*, *rectipinna*. source: Order Cetacea.
- IUCN Status:** Data Deficient (DD). The IUCN Red List categories are shown as a row of buttons: NE, DD (selected), LC, NT, VU, EN, CR, EW, EX. A circular icon with 'DD' and 'DATA DEFICIENT' is also present.
- Vernacular Names:** Epaulard (In French, sources: Delphinidae + 2 more datasets), Orque (In French, sources: Belgian Species List + 1 more dataset), Épaulard (In French, sources: Catalogue of Life Checklist + 1 more dataset), Dorque (In French, source: World Register of Marine Species).

- The IUCN Red List of Threatened Species  
(<https://doi.org/10.15468/0qnb58>)
- IUCN Threat status

`/species/{usageKey}/iucnRedListCategory`



# Taxon pages – any checklist

The screenshot shows a taxon page for *Orcinus orca* (Linnaeus, 1758). The page is divided into several sections:

- Classification:** Kingdom: Animalia, Phylum: Chordata, Class: Mammalia, Order: Cetacea, Family: Delphinidae, Genus: *Orcinus* Fitzinger, 1860, Species: *Orcinus orca* (Linnaeus, 1758).
- CONSERVATION:** STATUS: CITES - Appendix II. source: Order Cetacea.
- DISCUSSION:** COMMENTS: Reviewed by Heyning and Dahlheim (1988, Mammalian Species, 304). source: Order Cetacea.
- MATERIALS EXAMINED:** TYPE LOCALITY: E North Atlantic ("Oceano Europaeo"). source: Order Cetacea.
- SYNONYMIC LIST:** SYNONYMS: *ater*, *capensis*, *gladiator*, *rectipinna*. source: Order Cetacea.
- IUCN STATUS:** Data Deficient (DD). Source: IUCN.
- VERNACULAR NAMES:** Epaulard In French (sources: Delphinidae + 2 more datasets), Orque In French (sources: Belgian Species List + 1 more dataset), Épaulard In French (sources: Catalogue of Life Checklist + 1 more dataset), Dorque In French (source: World Register of Marine Species).

- Any checklist containing name matched to the taxon:
  - Description from taxon description extension
  - Vernacular name from vernacular name extension

`/species/{usageKey}/vernacularNames`

`/species/{usageKey}/descriptions`



# Taxon pages – Wikidata

The screenshot shows the Wikidata page for *Orcinus orca*. The left sidebar displays the classification hierarchy: Kingdom: Animalia, Phylum: Chordata, Class: Mammalia, Order: Cetacea, Family: Delphinidae, Genus: *Orcinus* Fitzinger, 1860. The main content area is divided into two sections: 'CITATION (FOR CITING OCCURRENCES, PLEASE SEE GUIDELINES)' and 'TAXON IDENTIFIERS'. The citation text is: *Orcinus orca* (Linnaeus, 1758) in GBIF Secretariat (2023). GBIF Backbone Taxonomy. Checklist dataset <https://doi.org/10.15468/39omei> accessed via GBIF.org on 2024-05-08. The 'TAXON IDENTIFIERS' section contains a long list of identifiers from various databases, including Catalogue of Life, ITIS, NDL, NCBI, Freebase, MSW, Fossilworks, WoRMS, GBIF, Dyntaxa, CITES, IUCN, Catalogue of Life in Taiwan, EPPO, iNaturalist, TAXREF, NBN System Key, Nederlands Soortenregister, New Zealand Organisms Register, Bibliothèque nationale de France, ADW, Quora, GND, Encyclopædia Britannica Online, DORIS, Encyclopædia Universalis, Store norske leksikon, IRMNG, Canadian Encyclopedia, Tierstimmenarchiv, CONABIO, ECOS, CMS, SeaLifeBase, Great Russian Encyclopedia Online, Species at Risk, NOAA Fisheries, EUNIS, Klexikon, Belgian Species List, Gran Enciclopèdia Catalana, Australian Educational Vocabulary, Verspreidingsatlas.nl, MeSH, Brockhaus, French Wikidia, English Wikidia, Observation.org, eBiodiversity, YSO, KBpedia, Library of Congress, WordNet, BOLD Systems, NBIC, Queensland Biota, Dutch Caribbean Species Register, Australian Faunal Directory, National Library of Israel, NatureServe Explorer, Den Store Danske, spækhugger, BioLib, Encyclopedia of China, NL CR AUT, Golden, Fandom, ScienceDirect, agricultural-and-biological-sciences, NALT, CAB, AGROVOC, National Historical Museums of Sweden, MyBIS, BBC Things, BBC News, UMLS, Maryland Biodiversity Project, India Biodiversity Portal, E-Fauna BC, Naturbasen, OBIS, Encyclopedia of Life, GenBank, Great Russian Encyclopedia portal, kosatka-af9abd, Gran Enciclopèdia Catalana, Open Tree of Life, ASM Mammal Diversity Database, and Paleobiology Database. A source link to Wikidata:Q26843 is also present.

- Taxon identifiers

- <https://www.wikidata.org/>

- Directly queried from the wikidata API:

- <https://query.wikidata.org/>



# Taxon pages – Global Register of Introduced and Invasive Species checklists

- Introduction and invasive status
- Checklists published on GBIF by the Invasive Species Specialist Group ISSG
- One Checklist per country/area
- Combined with occurrences available on GBIF

The screenshot displays the GBIF portal interface for the species *Gyrodactylus proterorhini*. The classification sidebar on the left shows the taxonomic hierarchy: Kingdom Animalia, Phylum Platyhelminthes, Class Monogenea, Order Gyrodactylida, Family Gyrodactylidae, Genus *Gyrodactylus* von Nordmann, 1832, and Species *Gyrodactylus proterorhini* Ergens, 1967. A map of Europe shows the species' distribution with a yellow dot in Poland. A table below the map, titled 'RECORDED AS INTRODUCED IN 2 COUNTRIES OR ISLANDS', provides details on the species' introduction:

Recorded as introduced in	According to	Evidence of impact	Occurrences in GBIF
Belgium	Global Register of Introduced and Invasive Species - Belgium	No	6 occurrences
Poland	Global Register of Introduced and Invasive Species - Poland	No	0 occurrences

Below the table, a section titled 'NAME USAGES APPLIED TO OCCURRENCES IN GBIF' features a large green circle representing the species. The text 'Gyrodactylus proterorhini Ergens, 1967' is positioned below the circle. The 'No children' status is also visible in the sidebar.

<https://github.com/gbif/portal16/issues/883#issuecomment-784536216>





**Example**

How to access names of extinct species

*Corynactis californica* Carlgren, 1936 observed in United States of America by thetidepooler (licensed under <http://creativecommons.org/licenses/by-nc/4.0/>)



## Working with extinct species on GBIF



GBIF users are often interested in getting occurrences of only living species or “**no extinct**” species.

This seemingly straightforward request is often difficult to fulfill in practice.



## isExtinct

GBIF has a species search term called **isExtinct**.

This term is not visible on the web UI, but it is available when using the **API** or `rgbif/pygbif`.

The API call to get all extinct taxa across any checklist on GBIF

<https://api.gbif.org/v1/species/search?rank=SPECIES&isExtinct=true>

Limited to the GBIF backbone

<https://api.gbif.org/v1/species/search?rank=SPECIES&isExtinct=true&datasetKey=d7dddbf4-2cf0-4f39-9b2a-bb099caae36c>



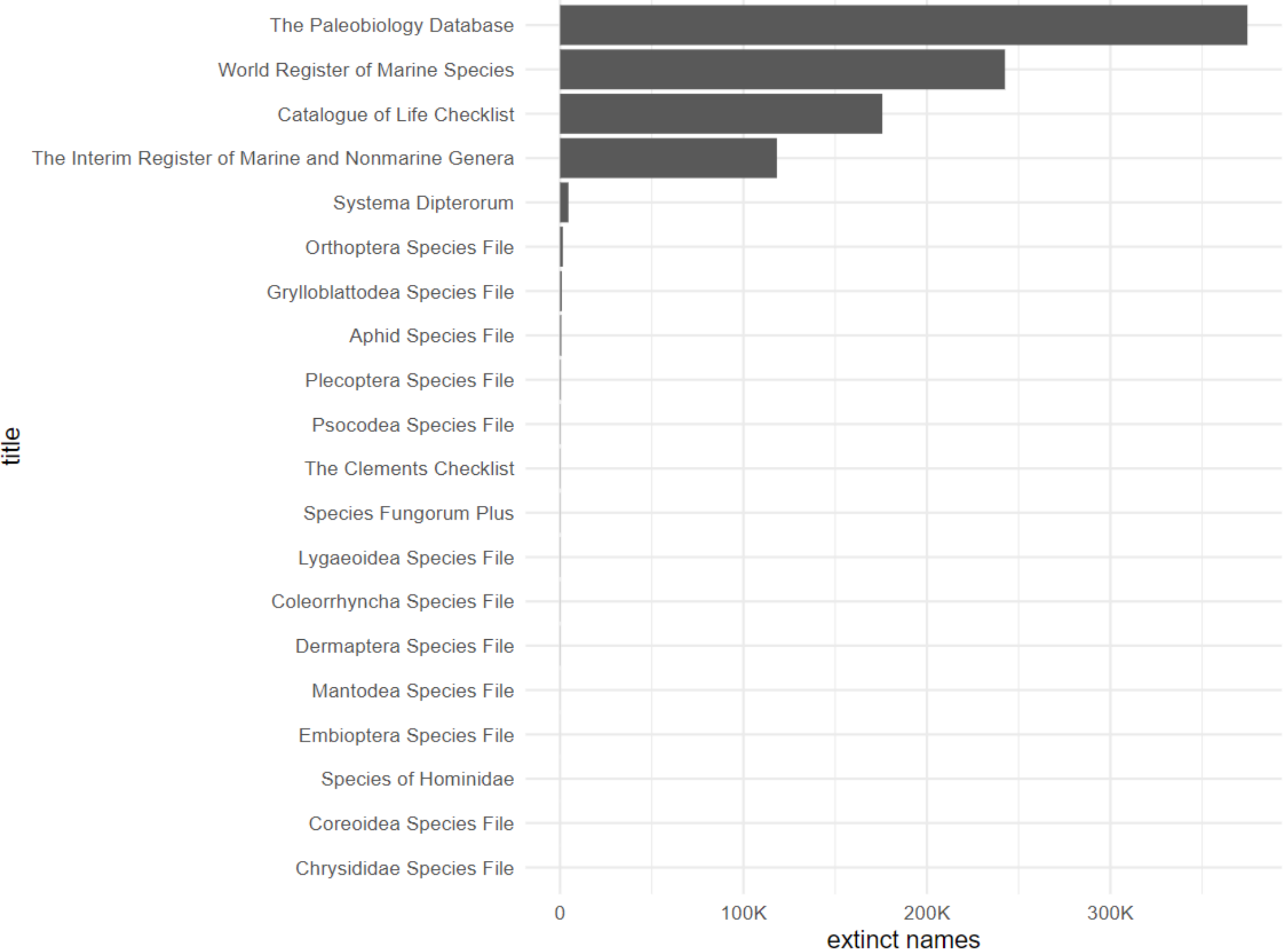
```
← → ↻ 🌐 api.gbif.org/v1/species/search?rank=SPECIES&isEx
1 // 20240513140832
2 // https://api.gbif.org/v1/species/search?rank=SPECIES&isExtinct=true
3
4 {
5   "offset": 0,
6   "limit": 20,
7   "endOfRecords": false,
8   "count": 963308,
9   "results": [
10    {
11     "key": 1003656,
12     "nameKey": 77152,
13     "datasetKey": "d7dddbf4-2cf0-4f39-9b2a-bb099caae36c",
14     "constituentKey": "7ddf754f-d193-4cc9-b351-99906754a03b",
15     "nubKey": 1003656,
16     "parentKey": 1003655,
17     "parent": "Acanthoclema",
18     "kingdom": "Animalia",
19     "phylum": "Bryozoa",
20     "order": "Cryptostomida",
21     "family": "Hyphasmoporidae",
22     "genus": "Acanthoclema",
23     "species": "Acanthoclema elegantula",
24     "kingdomKey": 1,
```

Navigation and utility toolbar with icons for: Pause, 00:00:00 timer, Select Area, Audio, Record Pointer, and a star icon.





# Number of isExtinct names in GBIF backbone





🔍 Datasets

🔧 Tools

☰ COL

Metadata

Browse

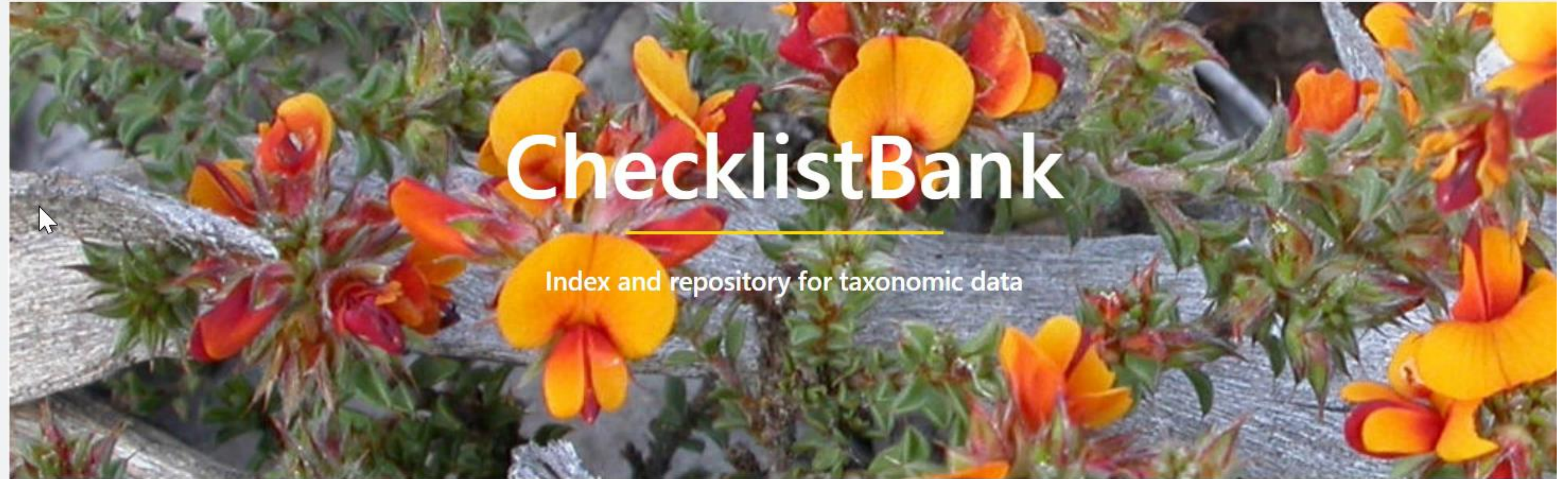
Search

Download

References

Sources

Releases



Species in Catalogue of Life

2,158,135

Name Usages in ChecklistBank

306,446,084

Datasets in ChecklistBank

52,146

Latest COL Checklist

2024-04-26

The [Catalogue of Life \(COL\)](#) aims to support the publication and curation of checklists and to provide a platform for their consistent discovery, use and citation. GBIF has for some time maintained a checklist index and supported the network of repositories for its community to share checklist data. COL and GBIF have united their capabilities to make ChecklistBank a

Latest datasets added

- [First record of \*Corydalis diasi\* Navás, 1915 \(Megaloptera: Corydalidae\) from Rio de Janeiro state, Brazil \(May 14th 2024\)](#)



# Checklistbank API

Export all extinct names from COL

<http://api.checklistbank.org/dataset/3LR/export.txt?extinct=true>

Only from a certain group “Trilobites taxonID=TRL”

<http://api.checklistbank.org/dataset/3LR/export.txt?taxonID=TRL&extinct=true>





The most complete authoritative list of the world's species - maintained by hundreds of global taxonomists - [Learn more](#)



**Fungi**

154,534 species in COL



APRIL 26, 2024

### MONTHLY RELEASE APRIL 2024

Monthly release April 2024 of the Catalogue of Life Checklist

MARCH 25, 2024

### MONTHLY RELEASE MARCH 2024

Monthly release March 2024 of the Catalogue of Life Checklist

FEBRUARY 22, 2024

### MONTHLY RELEASE FEBRUARY 2024

Monthly release February 2024 of the Catalogue of Life Checklist

COL Version: 2024-04-26

[Advanced search](#)



Info



Include extinct

- ▼ unranked: [Biota](#)
  - ▶ kingdom: [Animalia](#)
  - ▶ kingdom: [Archaea](#)





Get data

How-to

Tools

Community

About



Login



Occurrences



SEARCH OCCURRENCES | 2,936,000,437 RESULTS

Search all fields



TABLE

GALLERY

MAP

TAXONOMY

METRICS

DOWNLOAD

Simple filters

All filters

Occurrence status



Present

Licence



Scientific name



Basis of record



Year



Month



Location



Administrative areas (gadm.org)



Country or area



Scientific name

Country or area

Coordinates

Event date

Occurrence status

*Mareca strepera* (Linnaeus, 1758)

France

48.9N, 2.8E

2024 Jan 07

Present

*Ondatra zibethicus* (Linnaeus, 1766)

Netherlands (Kingdom of...)

51.5N, 6.1E

2024 Jan 18

Present

*Prunella modularis* (Linnaeus, 1758)

Germany

49.2N, 7.2E

2024 Jan 11

Present

*Pyrrhula pyrrhula* (Linnaeus, 1758)

Russian Federation

54.9N, 73.5E

2024 Jan 03

Present

*Cyclamen hederifolium* Aiton

United Kingdom of Great ...

50.9N, 0.2W

2024 Jan 13

Present

*Aegithalos caudatus* (Linnaeus, 1758)

Russian Federation

55.4N, 38.4E

2024 Jan 21

Present

*Pyrrhula pyrrhula* (Linnaeus, 1758)

Russian Federation

55.4N, 38.5E

2024 Jan 21

Present

*Corvus cornix* Linnaeus, 1758

Russian Federation

55.4N, 38.5E

2024 Jan 21

Present

*Pica pica* (Linnaeus, 1758)

Russian Federation

55.4N, 38.5E

2024 Jan 21

Present

[https://www.abif.org/occurrence/search?occurrence\\_status=present&q=](https://www.abif.org/occurrence/search?occurrence_status=present&q=)



# Accessing species information from Checklistbank

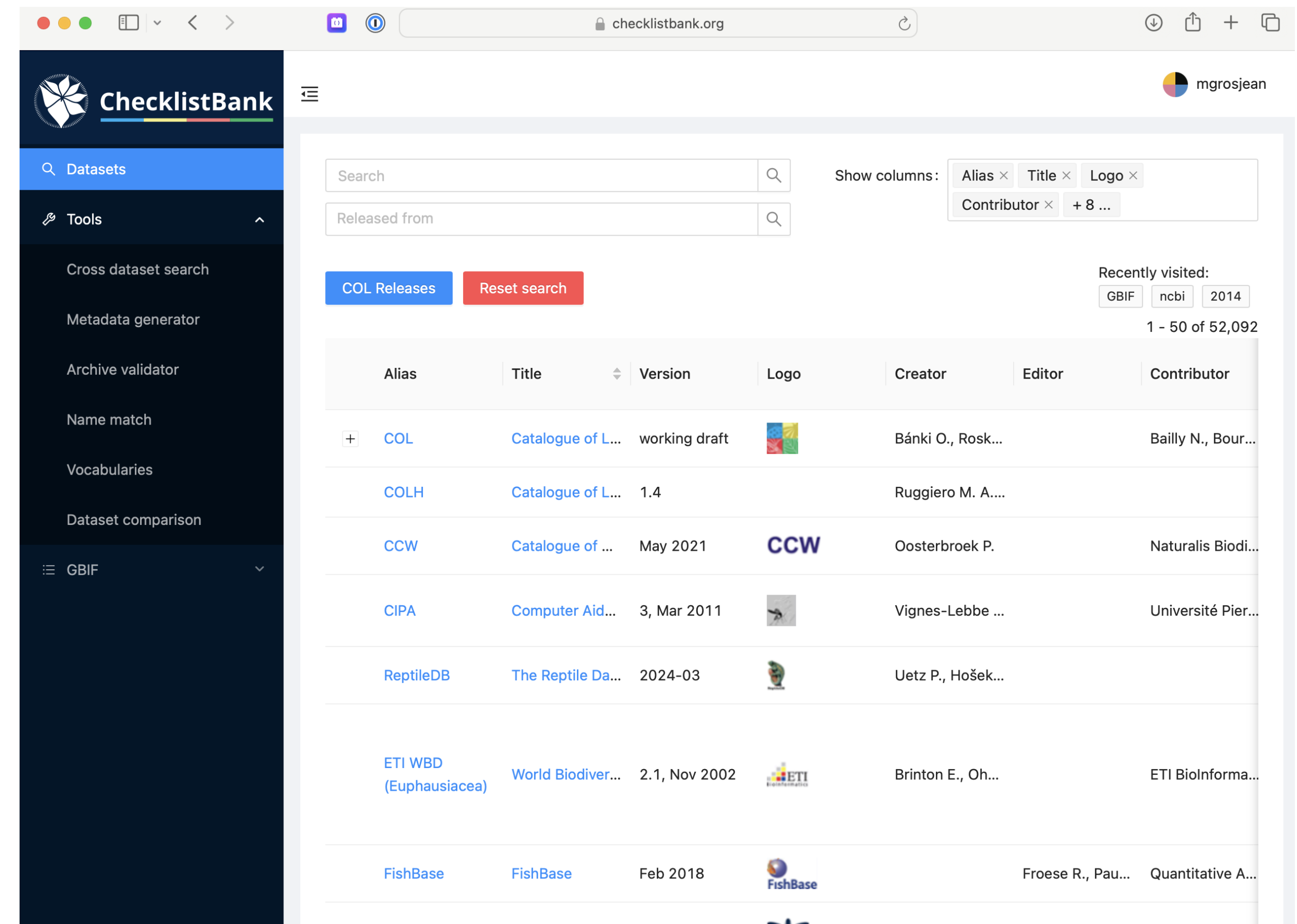
Checklistbank.org and Checklistbank API

*Anthracoerythron archeri* (Berk.) Pegler observed in Australia by cathmobbs (licensed under <http://creativecommons.org/licenses/by-nc/4.0/>)



# What is Checklistbank

- Platform for checklists to:
  - Publish, edit, build
  - Find, access
- Contains all checklists in GBIF and more
- Developed by GBIF and the Catalogue of Life
- Same login as GBIF



The screenshot shows the ChecklistBank website interface. The browser address bar displays 'checklistbank.org'. The user is logged in as 'mgrosjean'. The left sidebar contains navigation options: 'Datasets', 'Tools' (with a sub-menu including 'Cross dataset search', 'Metadata generator', 'Archive validator', 'Name match', 'Vocabularies', and 'Dataset comparison'), and 'GBIF'. The main content area features a search bar, a 'Released from' filter, and a 'Show columns' dropdown menu. Below the search filters are buttons for 'COL Releases' and 'Reset search'. A 'Recently visited' section shows 'GBIF', 'ncbi', and '2014'. The main display is a table of datasets with columns for Alias, Title, Version, Logo, Creator, Editor, and Contributor. The table lists several datasets, including 'COL', 'COLH', 'CCW', 'CIPA', 'ReptileDB', 'ETI WBD (Euphausiacea)', and 'FishBase'.

Alias	Title	Version	Logo	Creator	Editor	Contributor
+ COL	Catalogue of L...	working draft		Bánki O., Rosk...		Bailly N., Bour...
COLH	Catalogue of L...	1.4		Ruggiero M. A...		
CCW	Catalogue of ...	May 2021		Oosterbroek P.		Naturalis Biodi...
CIPA	Computer Aid...	3, Mar 2011		Vignes-Lebbe ...		Université Pier...
ReptileDB	The Reptile Da...	2024-03		Uetz P., Hošek...		
ETI WBD (Euphausiacea)	World Biodiver...	2.1, Nov 2002		Brinton E., Oh...		ETI BioInforma...
FishBase	FishBase	Feb 2018			Froese R., Pau...	Quantitative A...



# Checklistbank API



## COL ChecklistBank API 71f5420 2024-05-10 OAS3

/openapi

This is the Catalogue of Life ChecklistBank API that drives all of [CoL ChecklistBank](#). The API is still in active development and not finalized, small changes are still expected to take place before the release of version 1.0. For questions, suggestions and discussion please subscribe to our [API mailing list](#), which we also use to inform about planned downtimes and breaking API changes. Alternatively you are welcome to [file a bug report or feature request](#) in our github repository.

[Contact the developer](#)

Servers

Authorize

default		^
GET	/	∨
GET	/dataset	∨
POST	/dataset	∨
GET	/dataset/{key}	∨
PUT	/dataset/{key}	∨

- <https://api.checklistbank.org>
- Centers around checklist datasets
- Functions include:
  - Name matching
  - Search
  - Access attributes like vernacular names, distribution, description, etc.

<https://github.com/CatalogueOfLife/backend/blob/master/API.md>





# Checklistbank functions – searching – cross dataset

</nameusage/search>

The screenshot shows the ChecklistBank search interface. On the left, a dark sidebar contains navigation options: Datasets, Tools, Cross dataset search (highlighted with a red circle '1'), Metadata generator, Archive validator, Name match, Vocabularies, and Dataset comparison. The main content area features a search bar, a 'Dataset' dropdown, and various filters: Fuzzy (off), Extinct (on), Matching (Words selected), Restrict to (Any selected), Issues, Ranks (Species (6,042,131)), Status, Sector Mode, and Source dataset. A red circle '2' highlights the search filters. Below the filters, a table displays search results for the species *Aafrita biladalshama*.

Dataset	Scientific Name	Status	Rank	Parents
+ Catalogue of Life Checklist (2023-12-15)	* <i>Aafrita biladalshama</i> Szwedo & Azar, 2013	accepted	species	Perforissidae > Aafrita
+ Catalogue of Life Checklist (2023-11-24)	* <i>Aafrita biladalshama</i> Szwedo & Azar, 2013	accepted	species	Perforissidae > Aafrita
+ Catalogue of Life Checklist (Annual Checklist 2022)	* <i>Aafrita biladalshama</i> Szwedo & Azar, 2013	accepted	species	Perforissidae > Aafrita
+ Catalogue of Life Checklist (2024-04-26)	* <i>Aafrita biladalshama</i> Szwedo & Azar, 2013	accepted	species	Perforissidae > Aafrita
+ Catalogue of Life Checklist (2022-10-20)	* <i>Aafrita biladalshama</i> Szwedo & Azar, 2013	accepted	species	Perforissidae > Aafrita
+ Catalogue of Life Checklist (2024-05-09)	* <i>Aafrita biladalshama</i> Szwedo & Azar, 2013	accepted	species	Perforissidae > Aafrita
+ Hemiptera management	* <i>Aafrita biladalshama</i>	accepted	species	Fulgoroidea > Aafrita

1. Cross dataset search

2. Build query

Full tutorial: <https://docs.gbif.org/course-checklistbank-tutorial/en/cross-dataset-search.html>



# Checklistbank functions – searching – single dataset

Search: Animalia

Issues: Please select

Ranks: Species (103,496) ×

Status: Please select

Extinct:  Fuzzy:  Matching:  Exact  Words  Partial Restrict to:  Scientific name  Authorship  Any

Sector Mode: Please select

Source dataset: Please select

Advanced v

1 - 50 of 103,496

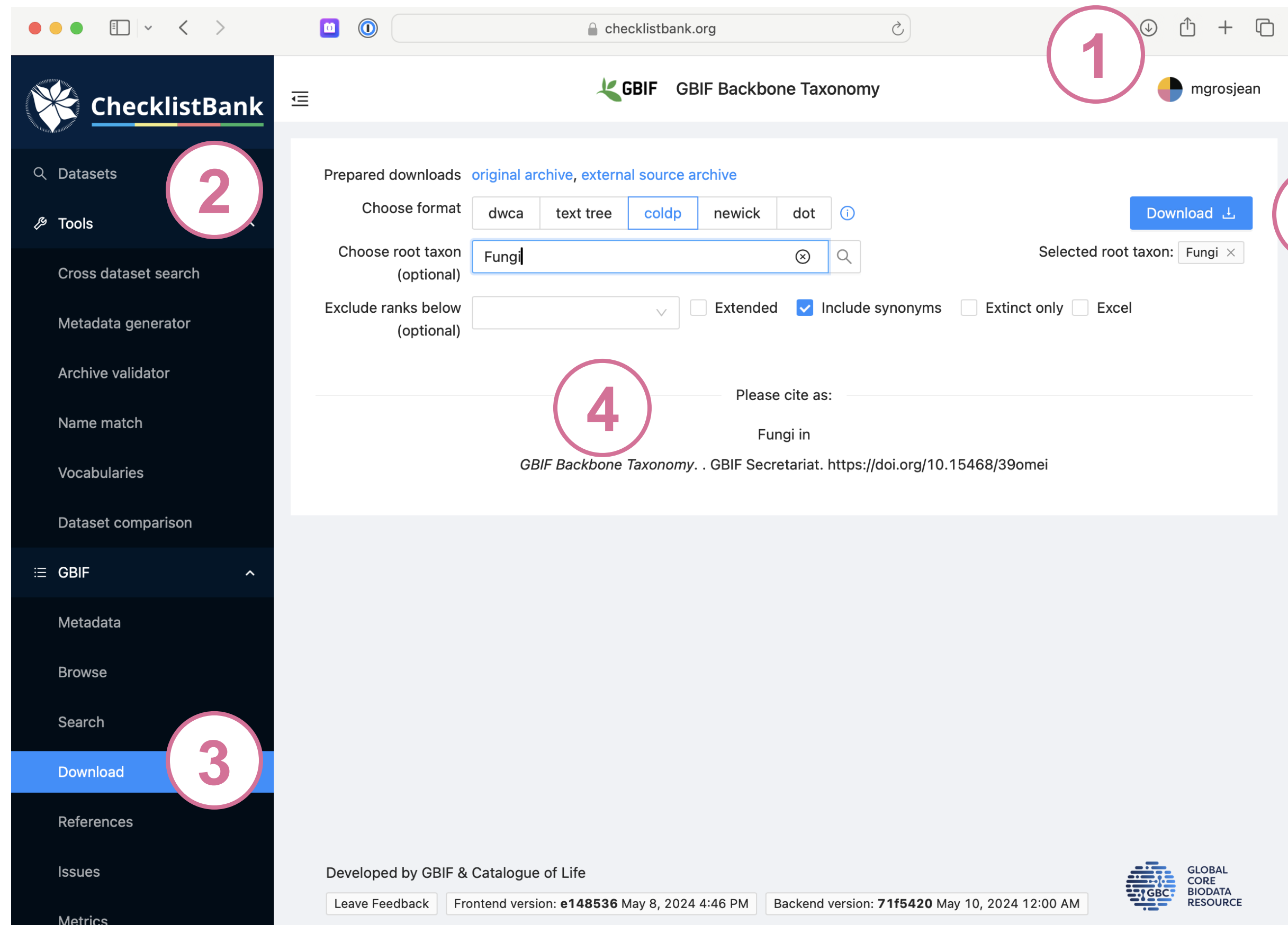
	Scientific Name	Status	Rank	Parents
+	<a href="#">*Aafrita biladalshama</a> Szwedo & Azar, 2013	accepted	species	<a href="#">Perforissidae</a> > <a href="#">Aafrita</a>
+	<a href="#">*Aahithis erraticus</a> (Schallreuter, 1985)	accepted	species	<a href="#">Tetradellidae</a> > <a href="#">Aahithis</a>
+	<a href="#">*Aahithis vanspronsenae</a> Schallreuter, 1988	accepted	species	<a href="#">Tetradellidae</a> > <a href="#">Aahithis</a>
+	<a href="#">*Aaleniella (Danocythere) gracilis</a> Christensen & Kilenyi, 1970	accepted	species	<a href="#">Aaleniella</a> > <a href="#">Aaleniella (Danocythere)</a>
+	<a href="#">*Aaleniella (Danocythere) inornata</a> (Kilenyi, 1969)	accepted	species	<a href="#">Aaleniella</a> > <a href="#">Aaleniella (Danocythere)</a>
+	<a href="#">*Aaleniella compressa</a> Plumhoff, 1963	accepted	species	<a href="#">Eucytheridae</a> > <a href="#">Aaleniella</a>
+	<a href="#">*Aptochiton pustulosus</a> R. D. Hoare & Karasawa, 2008	accepted	species	<a href="#">Gryphochitonidae</a> > <a href="#">Aptochiton</a>

`/dataset/{key}/nameusage/search/`

1. Select Dataset: Catalogue of Life
2. Build query: extinct animal species



# Checklistbank functions - downloading



The screenshot shows the ChecklistBank website interface. The browser address bar is `checklistbank.org`. The page title is "GBIF Backbone Taxonomy". The user is logged in as "mgrosjean". The sidebar on the left has a "Download" button highlighted. The main content area shows download options: "Choose format" (dwca, text tree, coldp, newick, dot), "Choose root taxon" (Fungi), and "Exclude ranks below" (optional). A "Download" button is visible. Below the download options, there is a "Please cite as:" section with the text "Fungi in GBIF Backbone Taxonomy. . GBIF Secretariat. <https://doi.org/10.15468/39omei>".

POST

`/dataset/{key}/export`

1. Log into Checklistbank
2. Look for dataset
3. Go to download tab
4. Choose package/subset
5. Download



# Checklistbank functions – browse tree

The screenshot shows the ChecklistBank interface. On the left is a dark sidebar with navigation options: Datasets, Tools, COL24.4, Metadata, Browse (highlighted), Search, Download, References, Sectors, Sources, Decisions, Issues, and Metrics. The main content area features the 'Catalogue of Life Checklist' logo, a search bar containing 'Acavomonidae Tikhonenkov, Janouškovec, Mylnik', and a 'Show placeholder ranks' toggle. Below the search bar is a hierarchical tree structure:

- unranked: *Biota* • Multiple providers
  - kingdom: *Animalia* • 1,525,728 est. spp. (1 estimate) • Multiple providers
  - kingdom: *Archaea* • 502 est. spp. (1 estimate) • ITIS
  - kingdom: *Bacteria Cavalier-Smith, 2002* • 10,358 est. spp. (1 estimate) • ITIS
  - kingdom: *Chromista* • 25,000 est. spp. (1 estimate) • Multiple providers
    - phylum: *Acavomonidia Tikhonenkov, Janouškovec, Mylnikov, Mikhailov, Simdyanov, Aleoshin & Keeling, 2014* • IRMNG
      - class: *Acavomonea Tikhonenkov, Janouškovec, Mylnikov, Mikhailov, Simdyanov, Aleoshin & Keeling, 2014* • IRMNG
        - order: *Acavomonida Tikhonenkov, Janouškovec, Mylnikov, Mikhailov, Simdyanov, Aleoshin & Keeling, 2014* • IRMNG
          - family: *Acavomonidae Tikhonenkov, Janouškovec, Mylnikov, Mikhailov, Simdyanov, Aleoshin & Keeling, 2014* • IRMNG
            - genus: *Acavomonas Tikhonenkov, Janouškovec, Mylnikov, Mikhailov, Simdyanov, Aleoshin & Keeling, 2014* • IRMNG

Other phyla listed include *Bigyra*, *Cercozoa*, *Ciliophora*, *Cryptista Cavalier-Smith, 1989*, *Foraminifera d'Orbigny, 1826*, *Haptophyta D.J. Hibberd ex B. Edvardsen & W. Eikrem in Edvardsen et al., 2000*, *Heliozoa*, *Miozoa*, and *Ochromyxa*.

Get the tree root taxa

`dataset/{key}/tree`

Get children

`dataset/{key}/tree/{id}/children`

Get parents

`dataset/{key}/tree/{id}`



# Checklistbank functions – name matching

The screenshot shows the ChecklistBank web application interface. The browser address bar displays 'checklistbank.org'. The page features a dark blue sidebar with navigation options: Datasets, Tools (with a sub-menu containing Cross dataset search, Metadata generator, Archive validator, Name match (highlighted), Vocabularies, and Dataset comparison), and GBIF. The main content area is titled '1 Input data' and includes a progress indicator with steps: 1 Input data, 2 Target data, 3 Matching, and 4 Review result. A note states: 'If your list contains more than 5000 names, you should [submit it here](#) for asynchronous processing.' Below this, there is a 'Simple data entry' section with a large text input field and instructions: 'Paste or write names - one name pr row. Names may include the author string.' At the bottom of the input section, there are two expandable options: '> Upload CSV' and '> Choose dataset in ChecklistBank'. The footer contains the text 'Developed by GBIF & Catalogue of Life', a 'Leave Feedback' button, version information ('Frontend version: e148536 May 8, 2024 4:46 PM' and 'Backend version: 71f5420 May 10, 2024 12:00 AM'), and the logo for the Global Core Biodata Resource (GBCR).

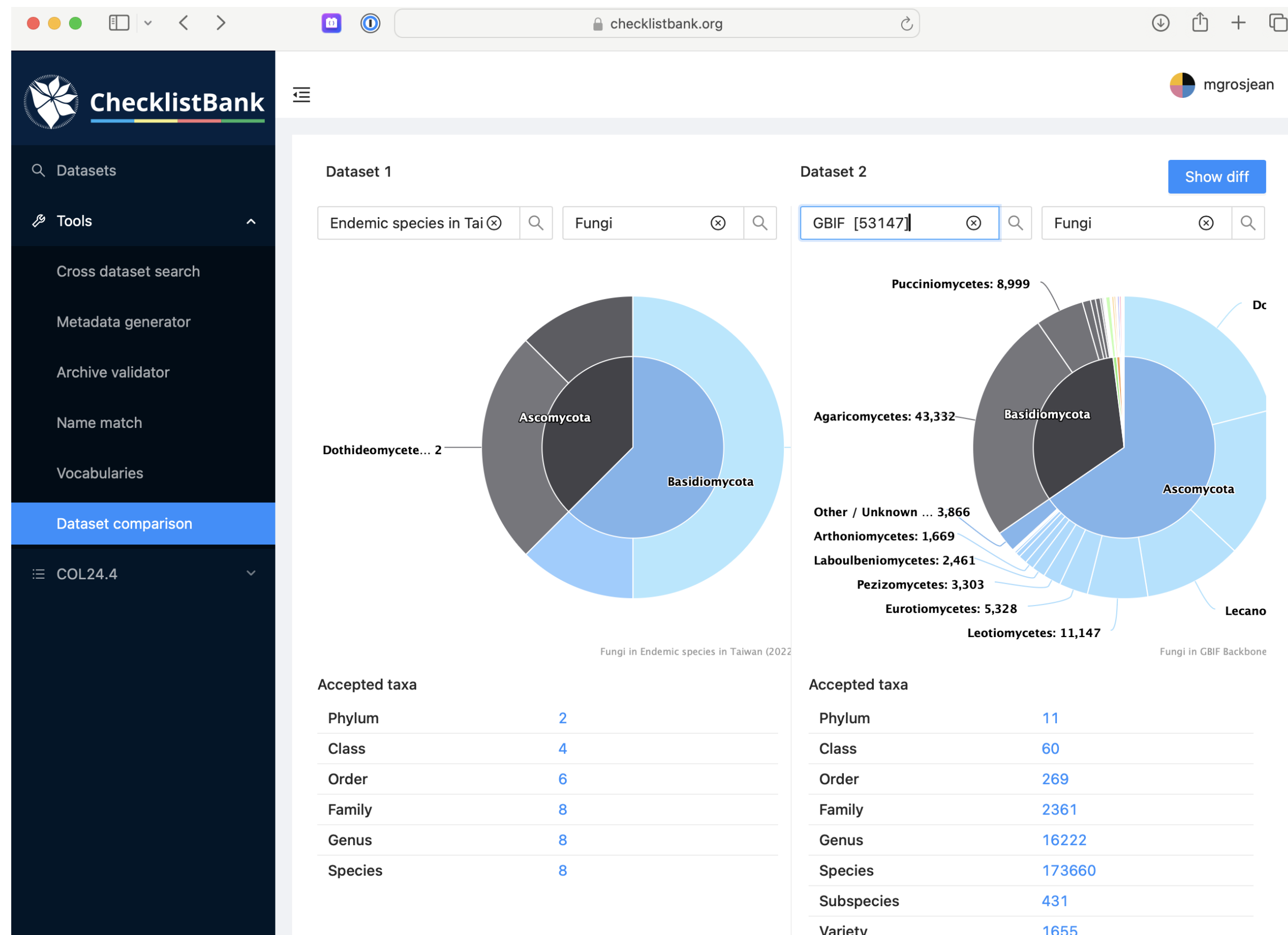
POST

`/dataset/{key}/match/nameusage/job`

- Match large number of names to any checklist
- Allows you to download output



# Checklistbank functions – checklist comparison



`/dataset/{key}/diff/{key2}`

- Compare two checklists in detail
- Full tutorial:  
<https://docs.gbif.org/course-checklistbank-tutorial/en/dataset-comparison.html>



## Checklistbank functions – API– others

Access taxon attributes

`/dataset/{key}/taxon/{id}/`

distribution

source

children

interaction

synonym

tree

media

treatment

vernacular

property

relation

classification

All in one

`taxon/{id}/info`

Search dataset per extension

`dataset?`  
`rowType=gbif:Distribution`



# Next session: 19 September 2024

[datause@gbif.org](mailto:datause@gbif.org)

Data Use Club

## Cloud computing services

 *Practical sessions*

