

Strengthening Zimbabwe's GBIF node through collaboration with GBIF Spain

CESP PROJECT. 5-6 MARCH 2020. BINDURA. ZIMBABWE



MINISTERIO
DE CIENCIA
E INNOVACIÓN



Gbif.es

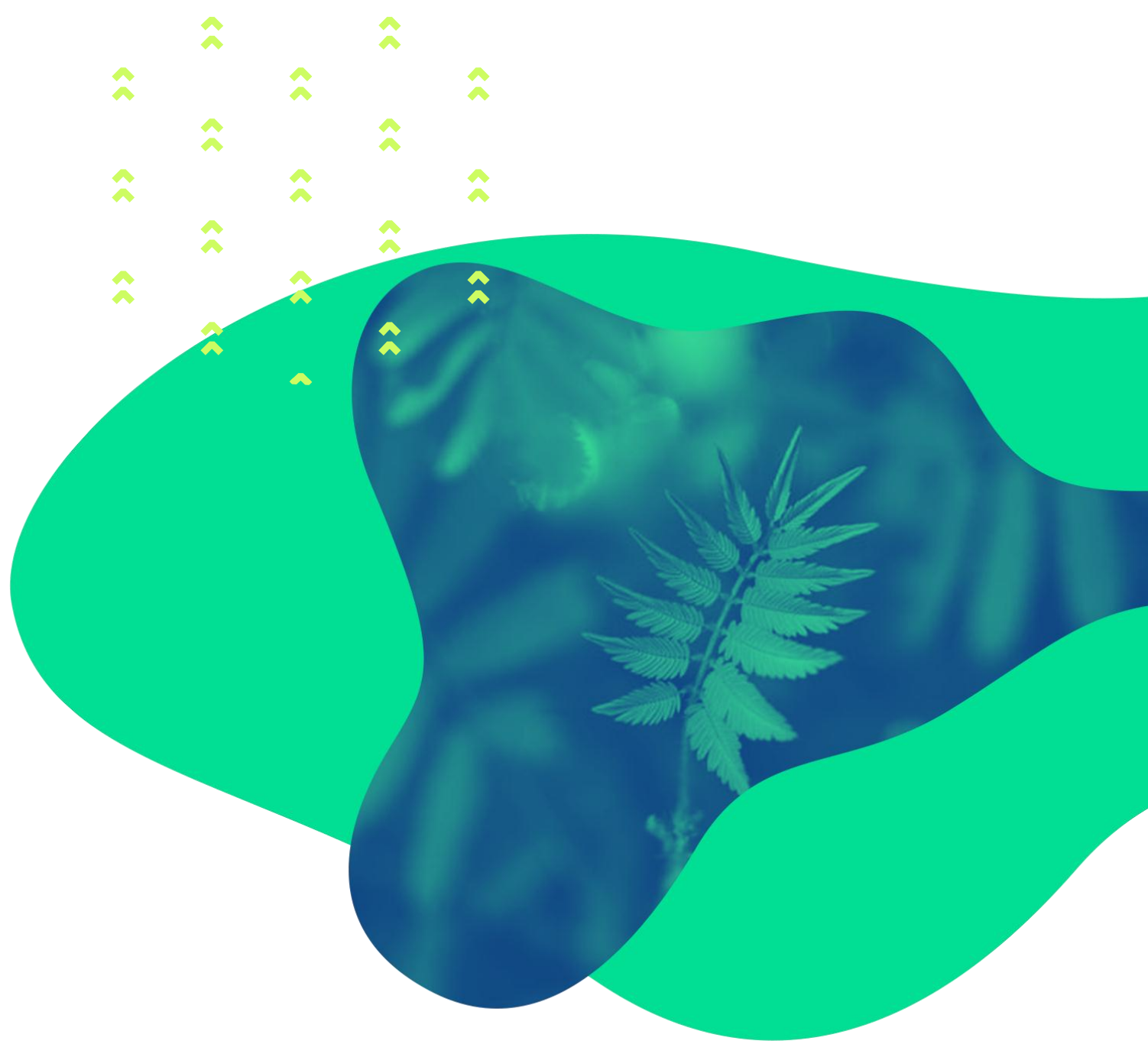


INTRODUCTION TO GBIF AND THE OPEN BIODIVERSITY INFORMATION

Strengthening Zimbabwe's GBIF node
through collaboration with GBIF Spain

Cristina Villaverde
villaverde@gbif.es

Gbif.es



Summary

1. What is GBIF?
2. The GBIF Global Network
3. GBIF Zimbabwe
3. Data types available through GBIF
4. Darwin Core Standard
5. DOIs and data citation



What is GBIF?

Global Biodiversity Information Facility

GBIF - the Global Biodiversity Information Facility - is an open-data **research infrastructure** funded by the world's governments that was officially established in 2001 through Memorandum of Understanding.

<https://www.gbif.org/what-is-gbif>



20 yrs
GBIF



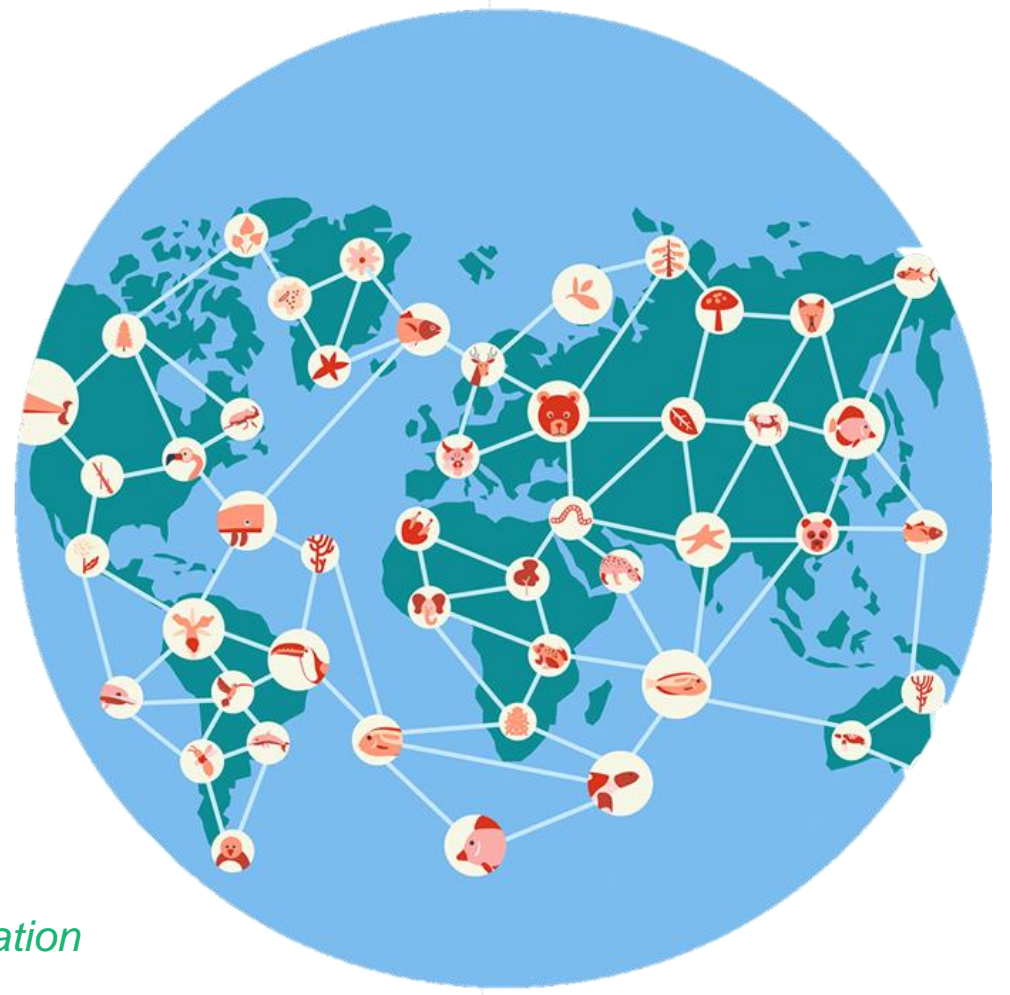
Gbif.Es

GBIF's mission:

Global Biodiversity Information Facility

Network of people and research infrastructure aimed at providing anyone, anywhere, free and open online access to global biodiversity data about all types of life on Earth to support **biodiversity science, environmental research and evidence based decision-making.**

GBIF success rests on strong national participation



Gbif.Es

DATA USE | 9 AUGUST 2019

Data from GBIF network bolsters biodiversity findings of IPCC special report

Increased data adds more than 31,000 insect species to global-scale assessment of impacts of climate change—then supports 2018 Special Report on Global Warming of 1.5°C

Data resources used via GBIF : 385,681,365 species occurrences



ipcc

INTERGOVERNMENTAL PANEL ON climate change

Global Warming of 1.5°C

An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty

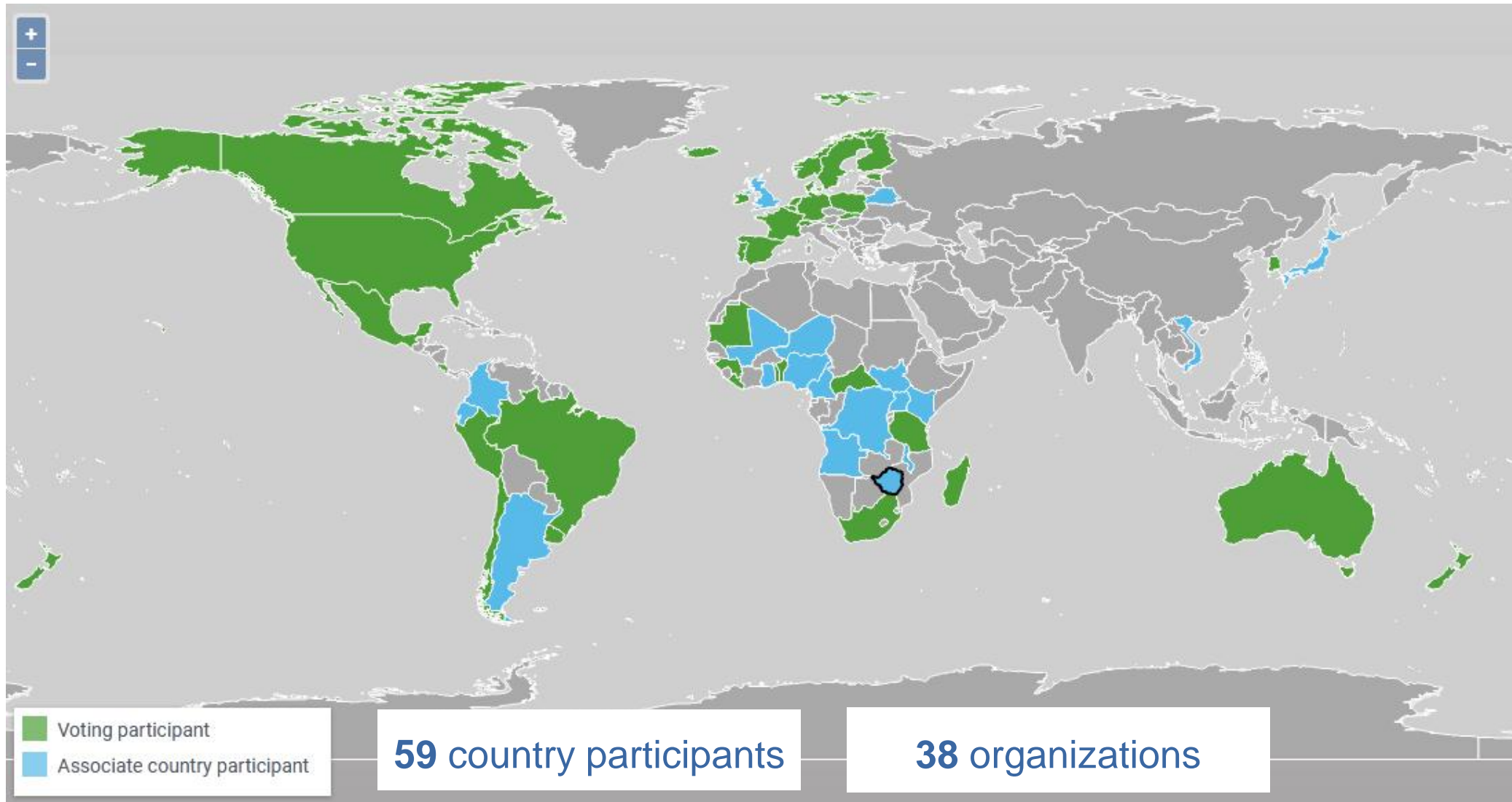
Summary for Policymakers

GBIF network
385 million records
5,432 datasets

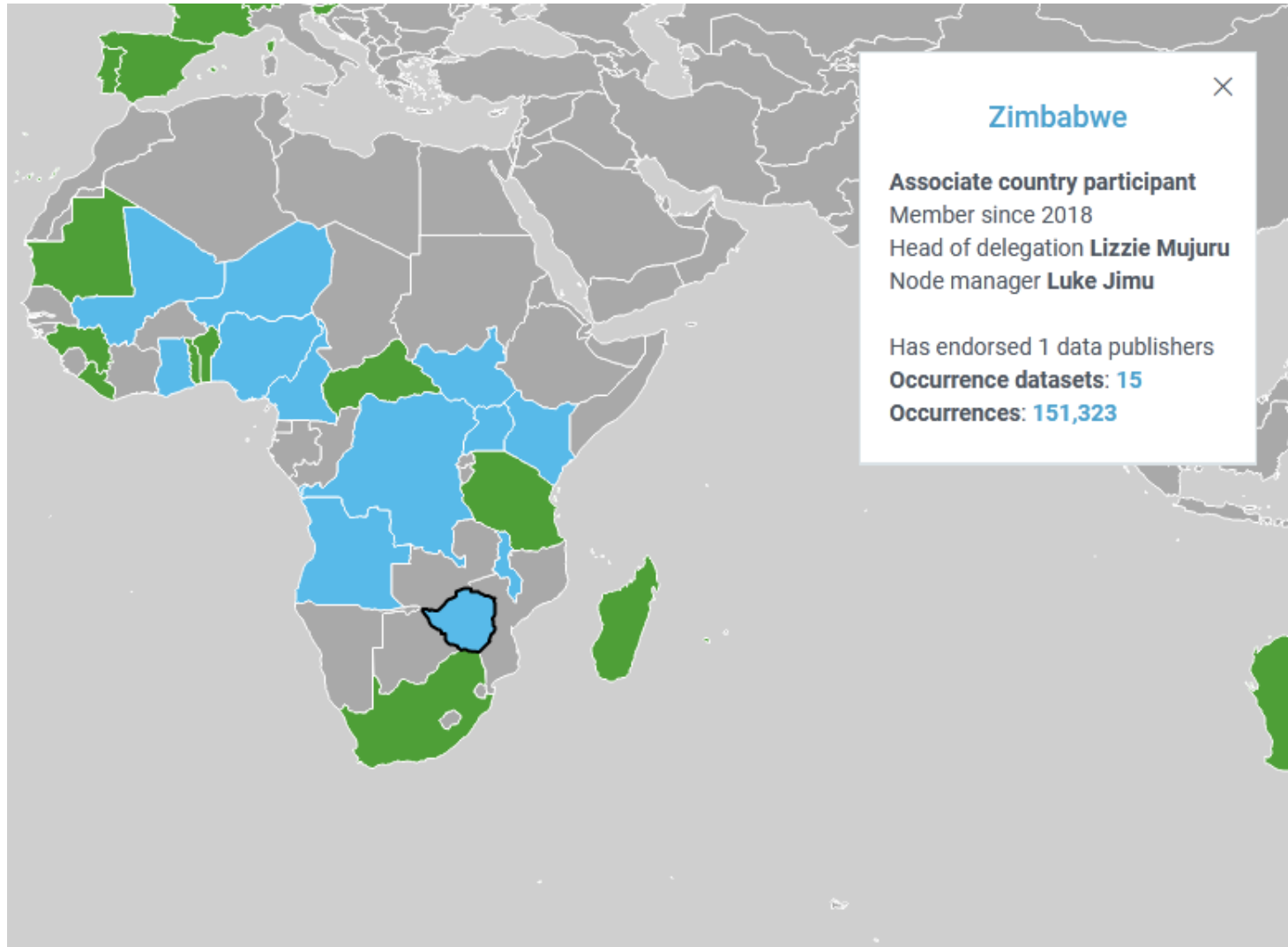
WG I WG II WG III



GBIF Global Participant network



GBIF in the African Region



21 country participants

4 organizations

161 publishers

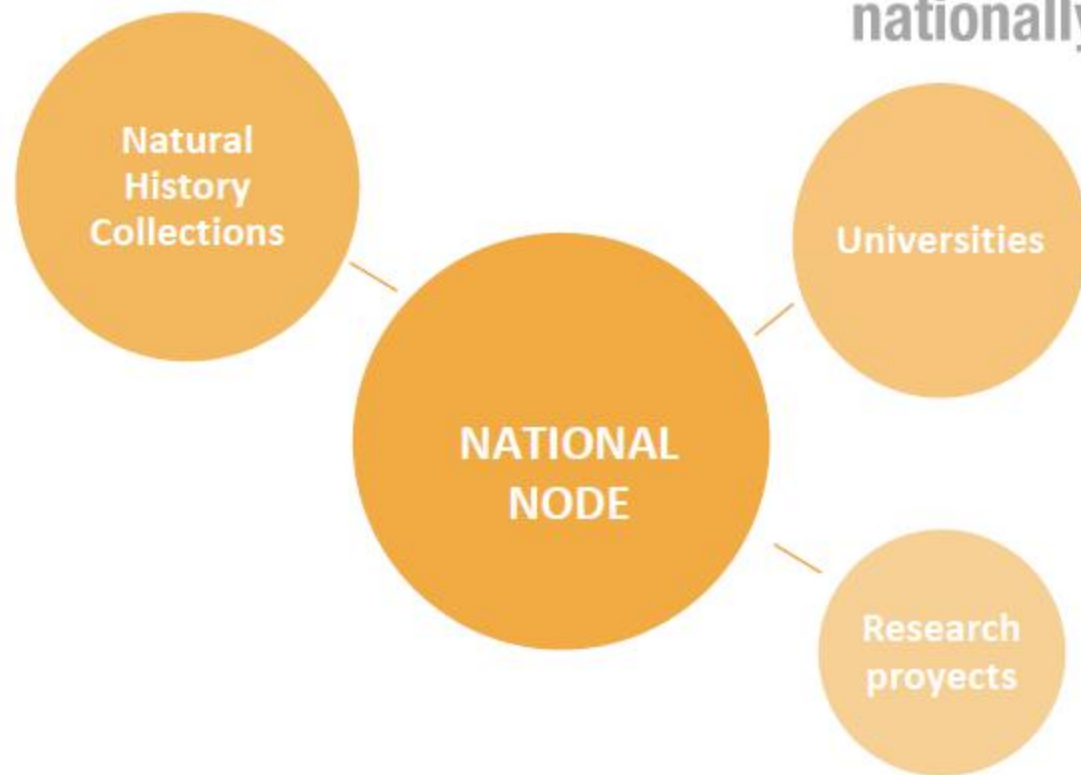
30,396,719 records

Region with highest participation



The GBIF Network

How is GBIF organized nationally?



Nodes work closely with their communities to promote data mobilization and data use, but always the **providers retain control over their own data**

[Get data](#)[How-to](#)[Tools](#)[Community](#)[About](#)[Login](#)

Zimbabwe



An associate participant from Africa

Names of countries and areas are based on the [ISO 3166-1 standard](#)

[SUMMARY](#)[DATA ABOUT](#)[DATA PUBLISHING](#)[PARTICIPATION](#)[MORE...](#)[ACTIVITY REPORT](#)

DATA ABOUT ZIMBABWE

410,716

Occurrences

529

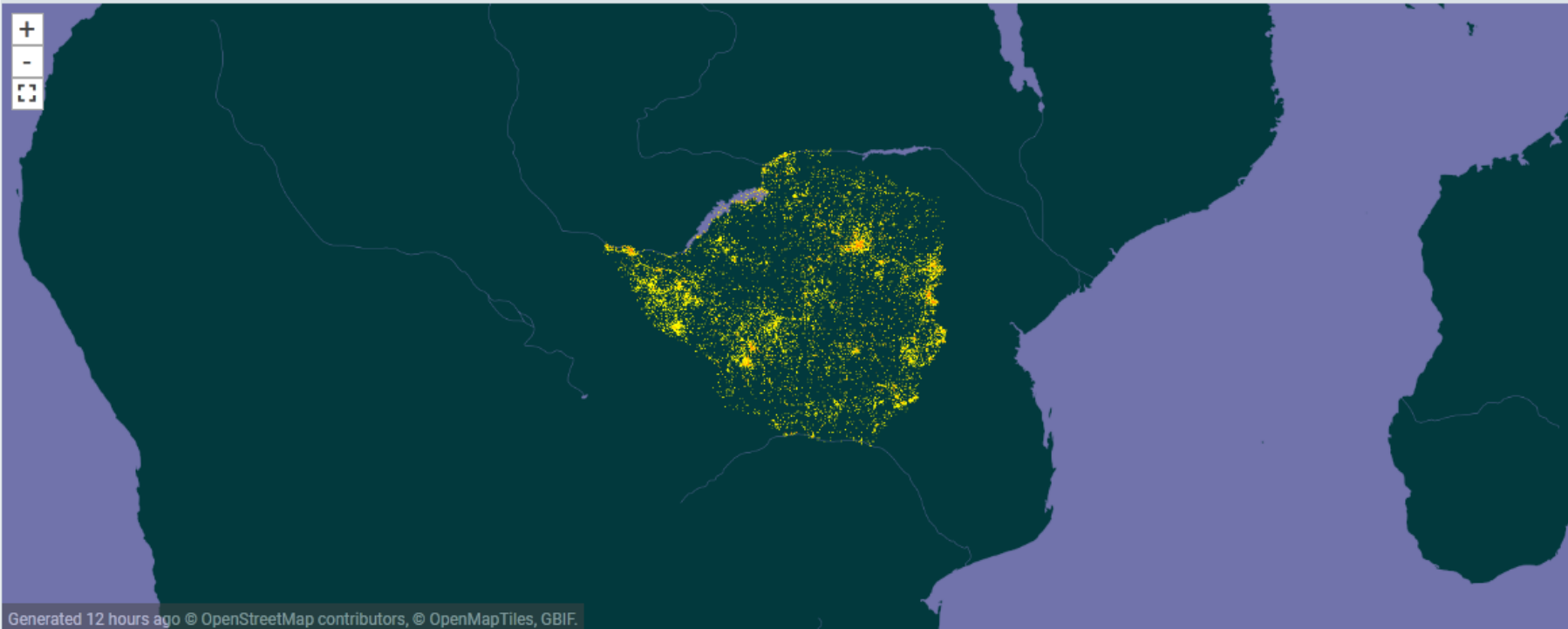
Datasets

35

Countries and areas contribute data

205

Publishers



Generated 12 hours ago © OpenStreetMap contributors, © OpenMapTiles, GBIF.

Any year

1800 - 2020



EXPLORE AREA



Zimbabwe



An associate participant from Africa
Names of countries and areas are based on the [ISO 3166-1 standard](#)

[SUMMARY](#)[DATA ABOUT](#)[DATA PUBLISHING](#)[PARTICIPATION](#)[MORE...](#)[ACTIVITY REPORT](#)

DATA FROM ZIMBABWE

151,323

Published occurrences

15

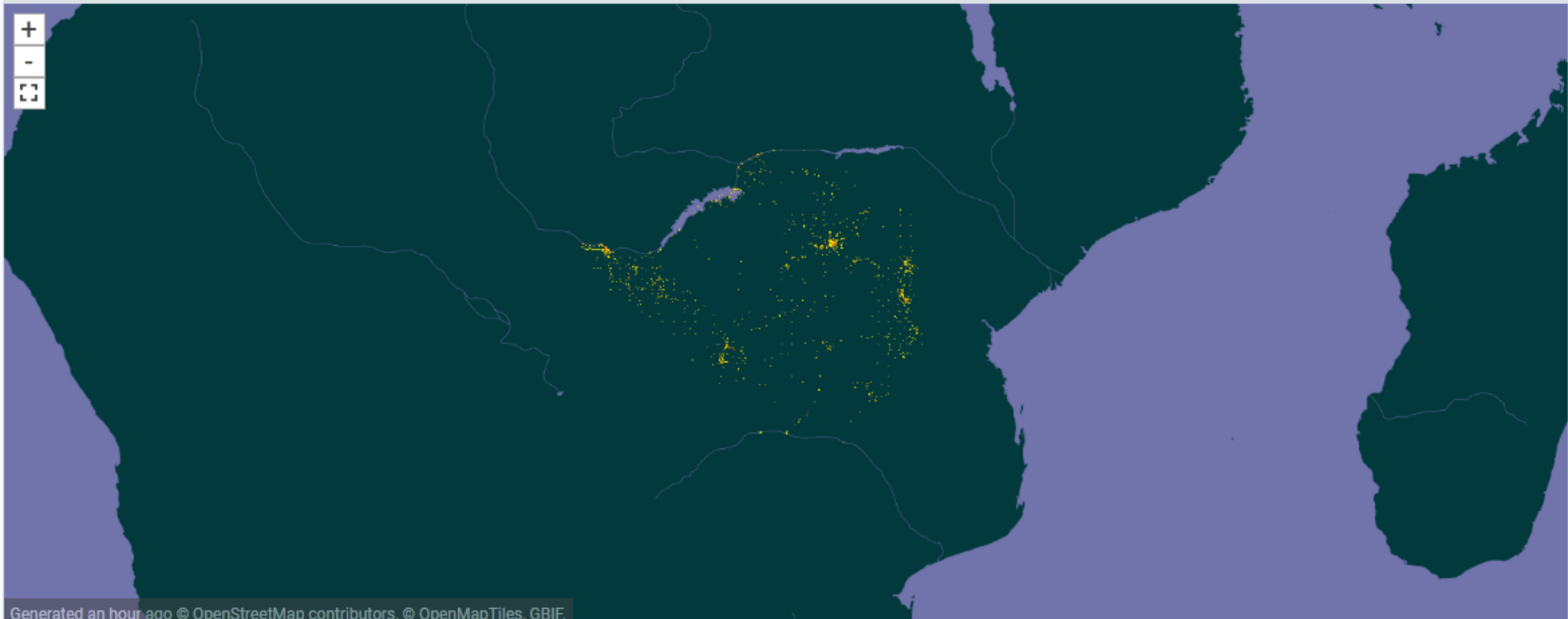
Published datasets

20

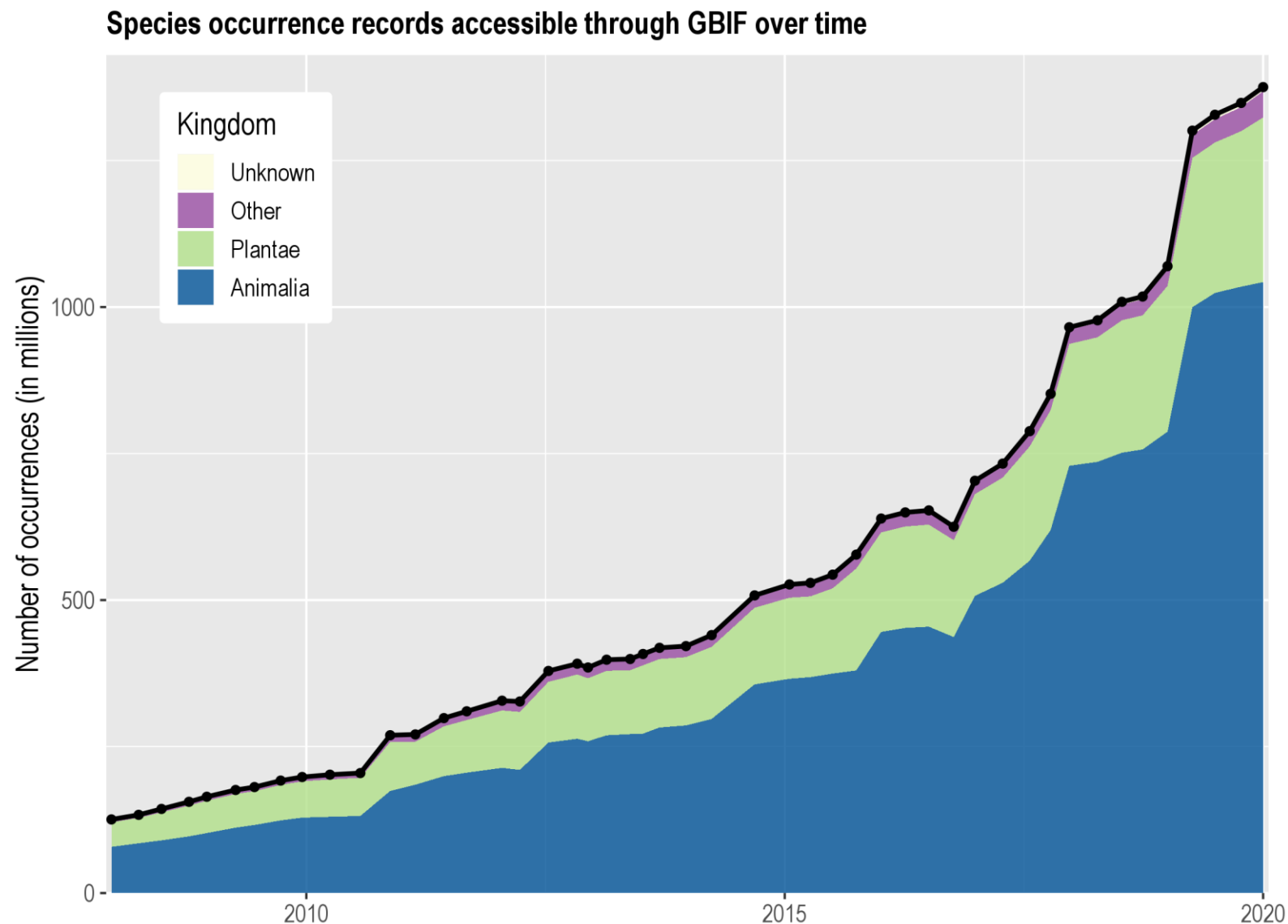
Countries and areas covered by
data from Zimbabwe

4

Publishers from Zimbabwe



Data published through GBIF



GBIF BY THE NUMBERS - INDICATORS

1 January 2020



1,375,355,798

**Species occurrence
records**



39.8 Billion

**Average records served
per month (2019)**



214,876

**Avg. monthly user
sessions (2019)**



~2 per day

**Peer review scientific papers
using GBIFdata (2018)**



1,556

Publishers



49,992

Datasets
(occurrence, checklists,
sampling-event data,
metadata)



59

**Country
Participants**



39

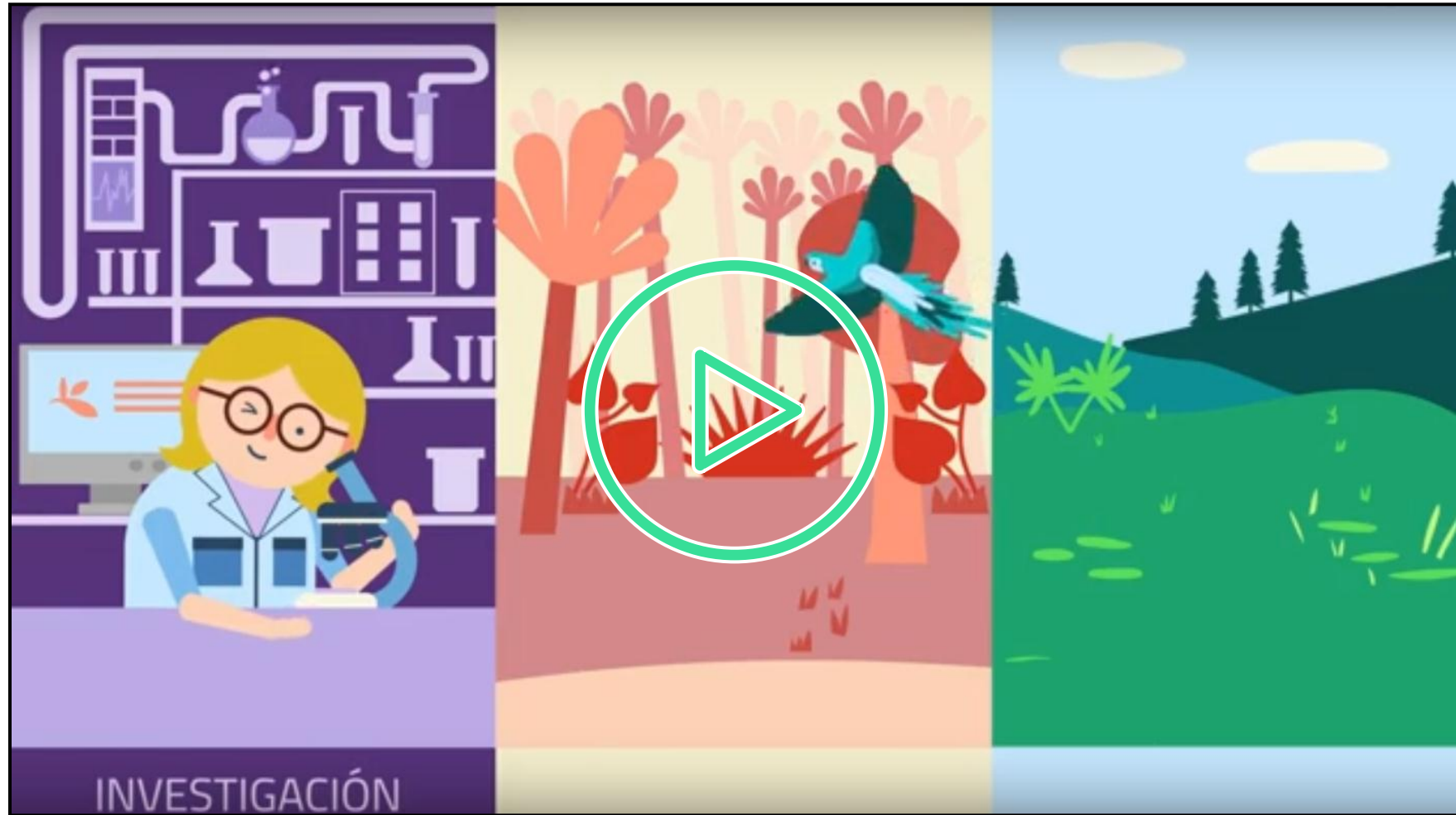
**Organizational
Participants**

Biodiversity data is not evenly distributed

Lack of data in Asia

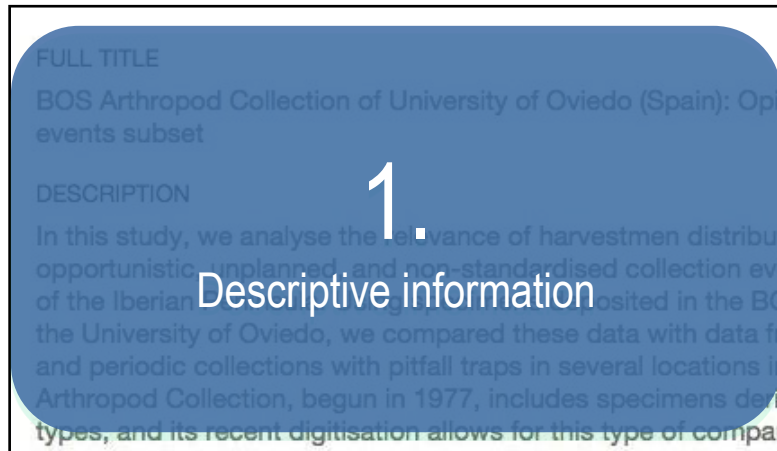
Lack of data in Africa

WHAT IS GBIF?



BIODIVERSITY DATA TYPES

Biodiversity Dataset Types Supported by GBIF



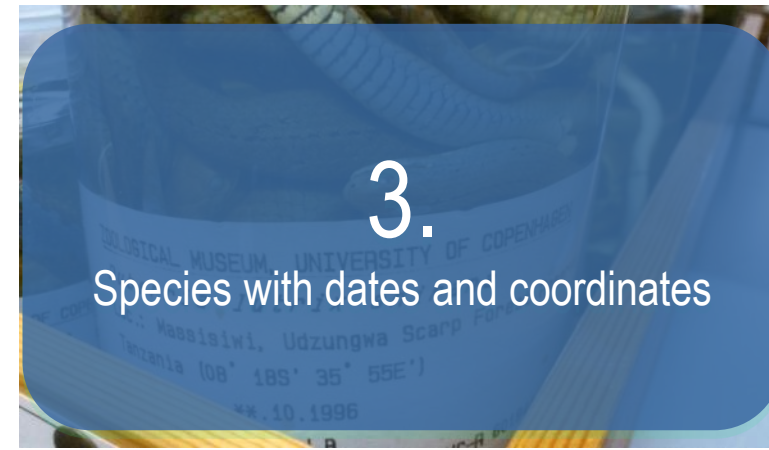
Descriptive information

Metadata dataset



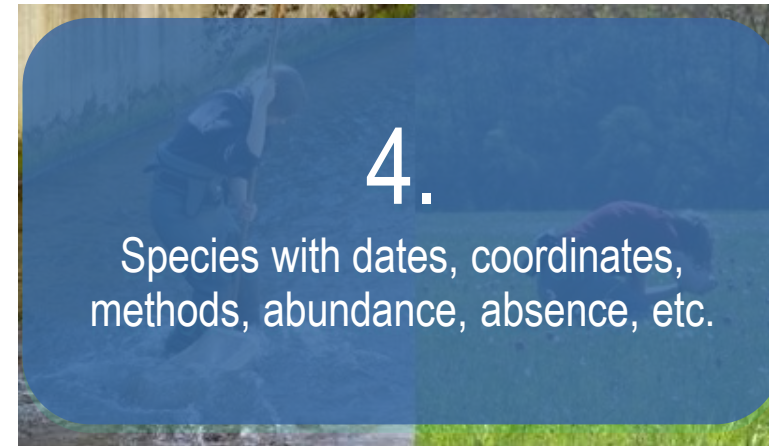
Species in countries and areas

Species checklists



Species with dates and coordinates

Occurrence-only data



Species with dates, coordinates, methods, abundance, absence, etc.

Sampling-event data

Metadata dataset

- Datasets describing undigitized resources like those in natural history and other collections.
- This ‘metadata-only’ class offers researchers a valuable tool for discovering and learning about evidence not yet available online and set priorities for future digitization.
- GBIF ensures that each metadata dataset is associated with a unique **Digital Object Identifier (DOI)** to streamline data users’ citation of these resources.
- [Browse metadata-only datasets.](#)

The screenshot shows the GBIF Metadata Dataset page for the dataset BID-AF2015-0004-NAC Superficie des aires protégées par région (ha).TOGO. The page has a green header with navigation links: Get data, How-to, Tools, Community, About, and a Login button. Below the header, the dataset title is prominently displayed, followed by the publisher information: Direction des Ressources Forestières (DRF), Jean-Marc GNAMA, Koudjo AKPENE, and Yao APLA. The page is divided into sections: DATASET, PROJECT, and DOWNLOAD. The DATASET section contains a description in French about protected areas in Togo and their importance for forest ecosystems. The PROJECT section provides metadata details: Project ID (BID-AF2015-0004-NAC), Metadata last modified (May 2, 2018), Hosted by (Université de Lomé), and License (CC BY). A DOI badge is visible with the DOI 10.15468/77ic0t. The bottom section, titled Description, repeats the French text from the DATASET section. A sidebar on the left lists navigation options: Description, Geographic scope, Contacts, Data description, GBIF registration, and Citation. The language is set to French.

Get data How-to Tools Community About Login

METADATA DATASET | REGISTERED APRIL 9, 2017

BID-AF2015-0004-NAC Superficie des aires protégées par région (ha).TOGO

Published by [Direction des Ressources Forestières \(DRF\)](#)
Jean-Marc GNAMA • Koudjo AKPENE • Yao APLA

[DATASET](#) [PROJECT](#) [DOWNLOAD](#)

Les aires protégées (forêts classées, parcs et réserves de faune) constituent au Togo un facteur très important de protection des écosystèmes forestiers. Leur importance spatiale (sans tenir compte du degré de protection) est très significative puisqu'elles couvrent théoriquement 14% du territoire togolais. Ce tableau présente leur répartition par région administrative en rapport avec la surface totale régionale et la densité de la population.

On pourra constater la grande variation qui les caractérise d'une région à l'autre, et qui peut se justifier pour la région maritime et non pas pour celle des plateaux ou beaucoup de bassins-versants ne sont pas protégés comme il se devrait.

Project ID: BID-AF2015-0004-NAC
Metadata last modified: May 2, 2018
Hosted by: Université de Lomé
License: CC BY

How to cite **DOI** 10.15468/77ic0t

French

Description

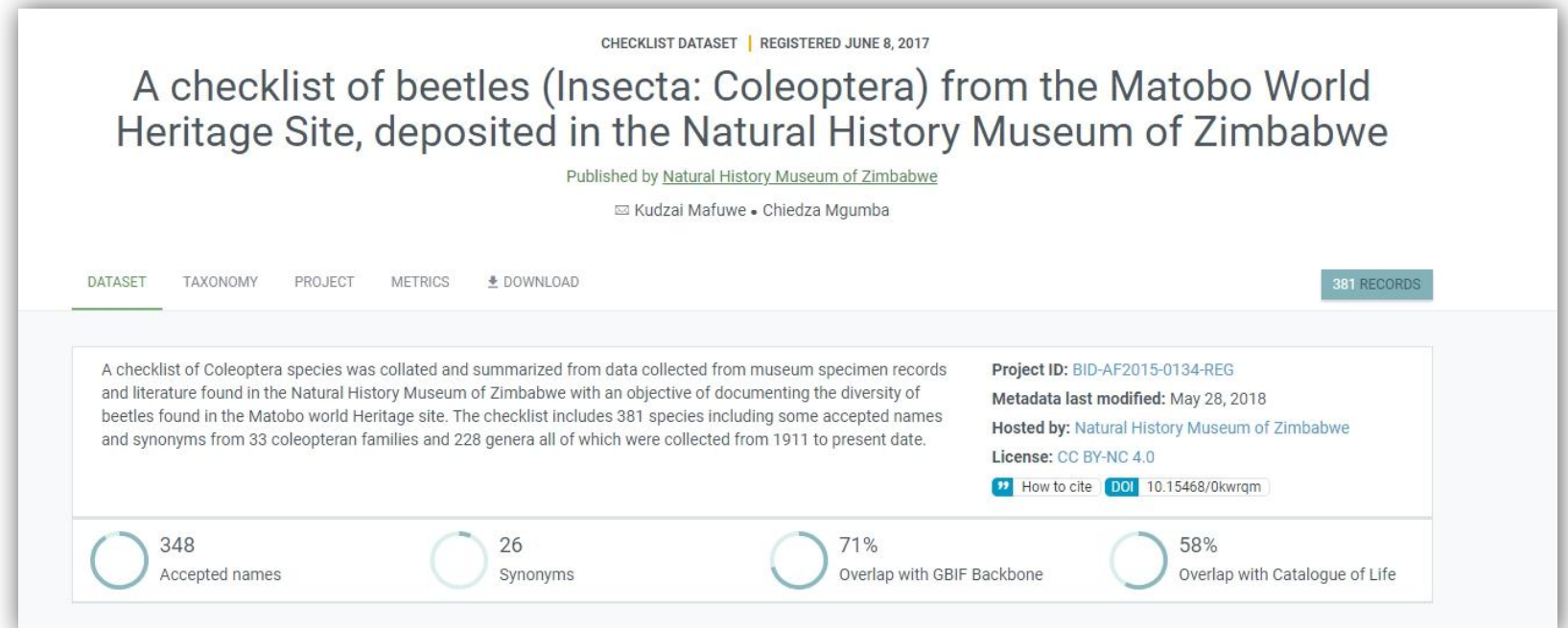
Les aires protégées (forêts classées, parcs et réserves de faune) constituent au Togo un facteur très important de protection des écosystèmes forestiers. Leur importance spatiale (sans tenir compte du degré de protection) est très significative puisqu'elles couvrent théoriquement 14% du territoire togolais. Ce tableau présente leur répartition par région administrative en rapport avec la surface totale régionale et la densité de la population.

On pourra constater la grande variation qui les caractérise d'une région à l'autre, et qui peut se justifier pour la région maritime et non pas pour celle des plateaux ou beaucoup de bassins-versants ne sont pas protégés comme il se devrait.

Description
Geographic scope
Contacts
Data description
GBIF registration
Citation

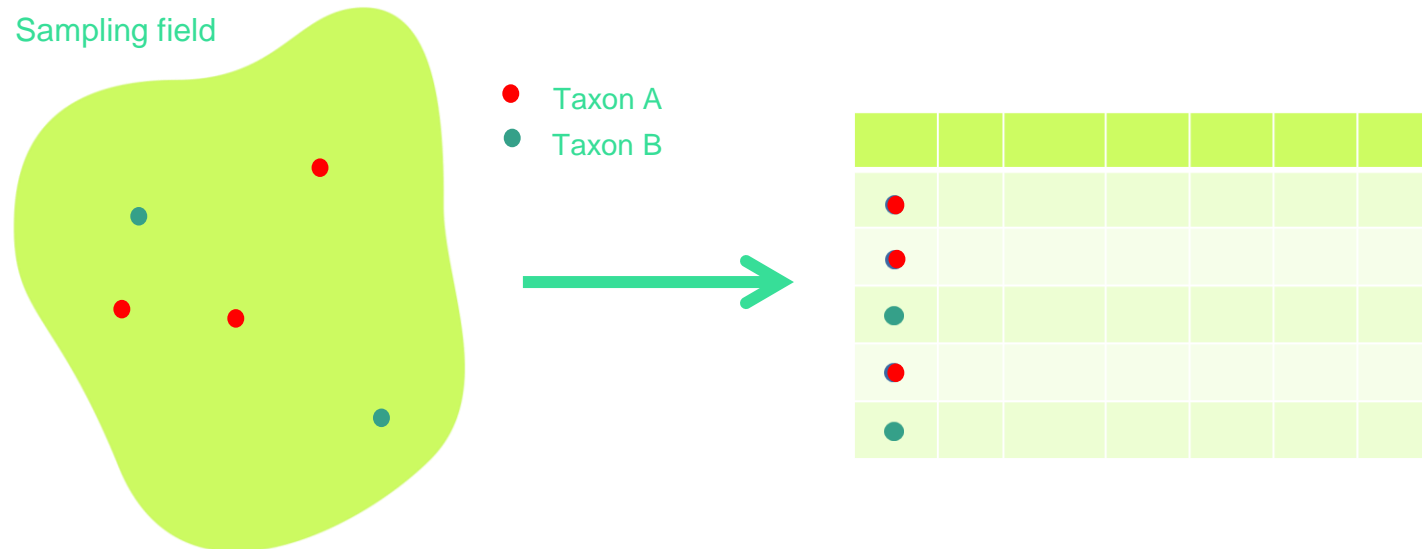
Species checklists

- List of named organisms or taxa. Can include additional details like local species names or specimen citations. Information categorized along taxonomic, geographic, and thematic lines, or some combination of the three.
- Examples: red list of threatened species, reference list of a country/region, etc.
- [Browse checklists](#)



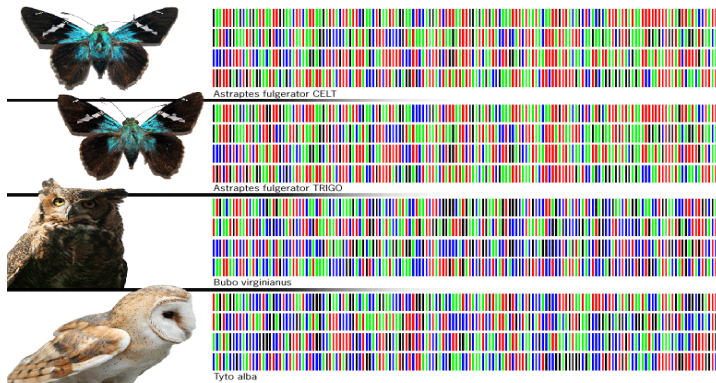
Occurrence-only data

- Information about the location of individual organisms in time and space.
- The core of data published through GBIF.org
- Examples can range from specimens and fossils in natural history collections, observations by field researchers and citizen scientists, and data gathered from camera traps or remote-sensing satellites.
- [Browse occurrence datasets](#)

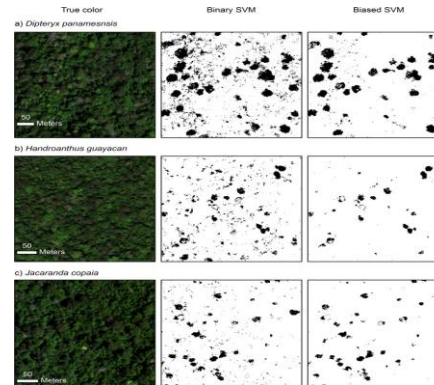


Streams of Species Occurrence Data

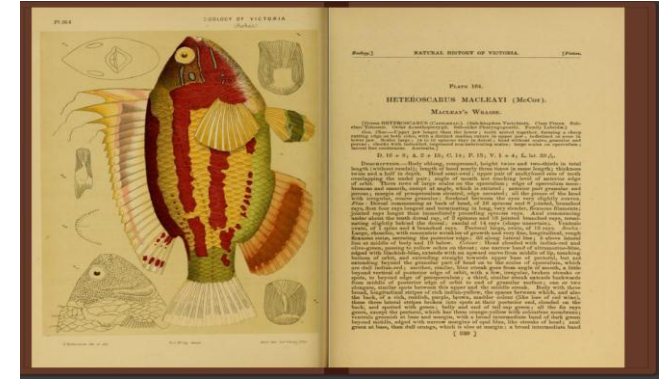
Sequences



Remote-sensing



Literature



Specimens



Citizen science



Animal tracking

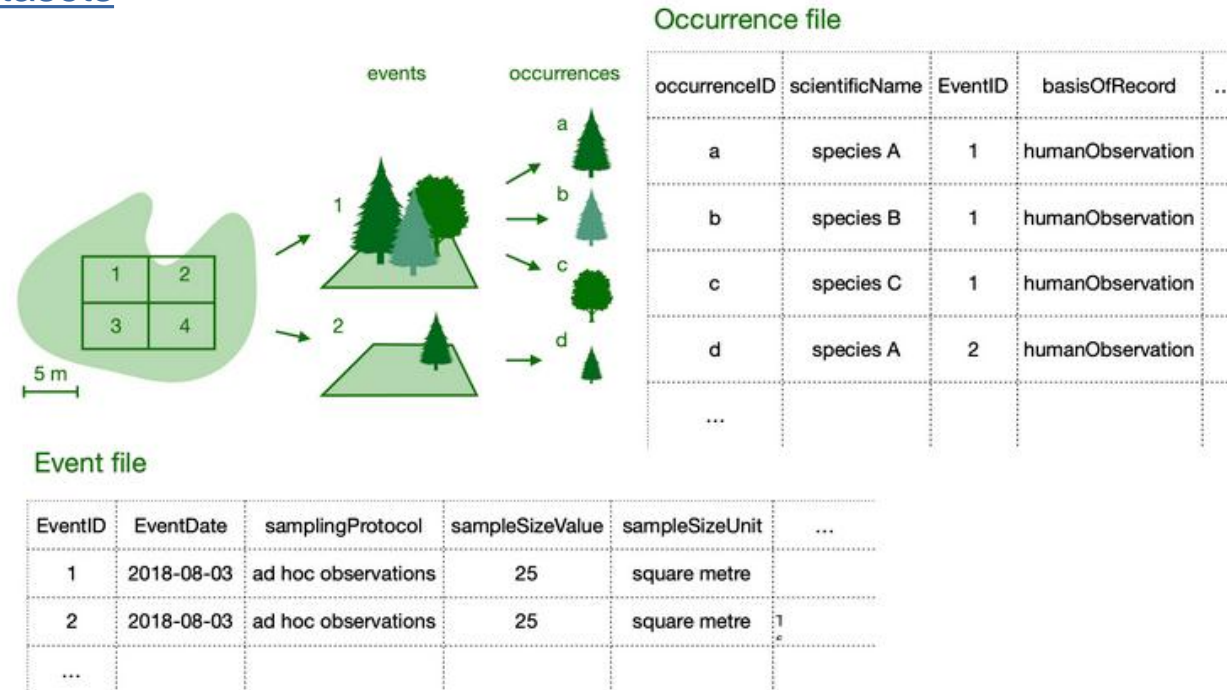
Streams of Species Occurrence Data

Example: specimens information from the Natural History Museum of Zimbabwe



Sampling-event data

- Datasets with greater detail, indicating the methods, events and relative abundance of species recorded in a sample.
- Examples: vegetation transects, bird censuses and freshwater or marine sampling.
- [Browse sampling-event datasets](#)



All data available at GBIF is under a common **standard**

What is a standard?

Context of biodiversity

A set of **terms** and **definitions** intended to facilitate the sharing of information about biological diversity by providing **identifiers**, **labels**, and **definitions** to increase the accuracy, integrity, and consistency of a dataset and **make it easy for use**.

Using a common standard is a must for bringing together the hundreds of millions of primary biodiversity records in the GBIF index, that comes from thousand of different datasets from hundreds of institutions around the world

A portrait of Charles Darwin, an elderly man with a long white beard and hair, wearing a dark suit and a white cravat. The portrait is overlaid with a semi-transparent green filter. The text "Darwin Core standard" is centered over the portrait in a white, sans-serif font.

Darwin Core standard

What is the Darwin Core standard?

Darwin Core (DwC) is a **common language** for sharing biodiversity data from varied and variable sources.

Darwin Core (DwC) plays a fundamental role in the sharing, use and reuse of open-access biodiversity data.

- **Information about the DwC** <http://rs.tdwg.org/dwc/>
- **CORE 169** [terms or fields](#) (DwC Simple)
- **EXTENSIONS- 23** packages (DwC Extended)

Developed by
[Biodiversity Information Standards](#) (TDWG)

Darwin Core Standard

The vast majority of species occurrence records available through GBIF.org are published using the Darwin Core Archive format.

OCCURRENCE DATASET | REGISTERED SEPTEMBER 7, 2018

Occurrence data set of Non-Timber Forest Products species for medicinal purposes in Zimbabwe’s biodiversity hotspots

Published by [Bindura University Of Science Education](#)

✉ Luke Jimu • Anthony Mapaura • Admore Mureva • Lizzie Mujuru • Justice Muvengwi • Innocent Nyakudya • Innocent Nyakudya • Antony Mapaura

DATASET

PROJECT

METRICS

ACTIVITY

⬇️ DOWNLOAD

4,439 OCCURRENCES

4 CITATIONS

GBIF annotated archive Recommended

Source archive Darwin Core Archive

GBIF annotated metadata EML

The data in this resource is published using the Darwin Core Archive (DwC-A), which is a standardized format for sharing biodiversity data. The core data table contains occurrence data set. The date on medicinal plants is published by Bindura University of Science Education (BUSE), Department of Natural Resources, which is the national node for GBIF (Global Biodiversity Information Facility) in Zimbabwe. BUSE and National Herbarium and Botanic garden will be ... [More](#)

Project ID: [BID-AF2017-0237-NAC](#)

Metadata last modified: January 29, 2019

Data last changed: January 29, 2019

Hosted by: [GBIF Secretariat](#)

License: [CC BY-NC 4.0](#)

[How to cite](#) [DOI](#) [10.15468/m2s30i](#)

4,439 Occurrences

100% With taxon match

100% With coordinates

99.9% With year

ACCESSING DATA

Where can we access to this information? GBIF.ORG Data Portal

<https://www.gbif.org/>



Get data

Share

Tools

Inside GBIF

Admin



GBIF | Global Biodiversity Information Facility

Free and open access to biodiversity data

OCCURRENCES

SPECIES

DATASETS

PUBLISHERS

RESOURCES

Search



WHAT IS GBIF?

ABOUT GBIF DENMARK

Greater flamingo (*Phoenicopterus roseus*) observed in Divjaka-Karavasta National Park, Albania by Liridon Shala. Photo via iNaturalist (CC BY-NC 4.0)

Occurrence records

1,308,043,278

Datasets

44,998

Publishing institutions

1,408

Peer-reviewed papers using data

3,707



News



Data use



News



News

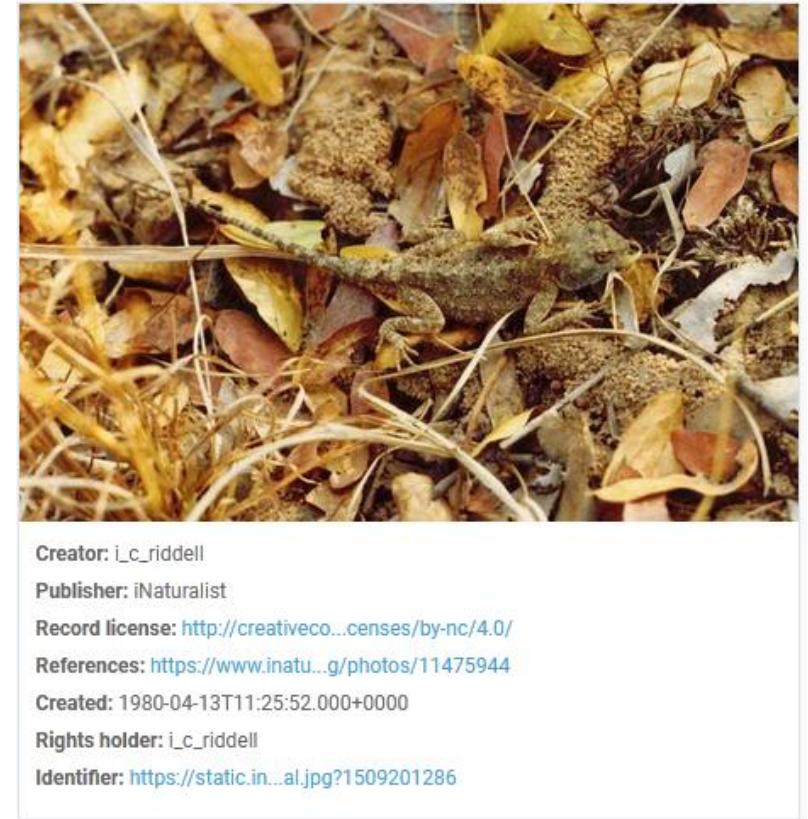
Where can we access to this information? GBIF.ORG Data Portal

<https://www.gbif.org/>

Typically, users request data on specific taxa, periods in time and/or geography. Examples:

- [Bluewhales](#) (69 datasets)
- [Birds in Japan](#) (78 datasets)
- [Reptiles in Africa between 1950 and 1980](#) (88 datasets)

How to cite use of data spanning 88 datasets?



Where can we access to this information? GBIF.ORG Data Portal

<https://www.gbif.org/>

Each download request is stored at gbif.org and is assigned a **DOI** (Digital Object Identifier) resolving to a landing page:

- Date and size of download
- Filters used in query
- Link to re-download
- Details of contributing datasets

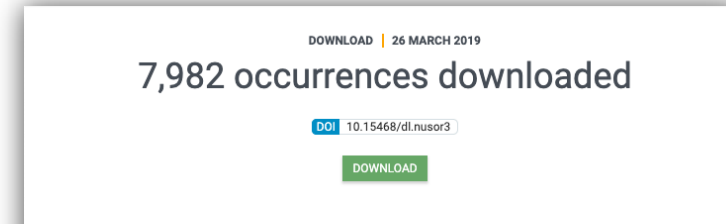
The screenshot shows the GBIF Data Portal interface for a specific download request. At the top, it indicates '7,982 occurrences downloaded' and provides the DOI '10.15468/dl.nusor3' in a red-bordered box, with a 'DOWNLOAD' button below it. The page also shows the date '26 MARCH 2019'. Below this, a section titled 'Citation' provides details about the download, including the license 'CC BY-NC 4.0' and the file size '294 KB CSV'. A section titled 'Involved datasets' lists 69 datasets. At the bottom, a table lists the contributing datasets and the number of occurrences for each.

Dataset	Occurrences
DFO Maritimes Region Cetacean Sightings	227
Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN). Mammalogy Na...	1
iNaturalist Research-grade Observations	207
SBMNH Vertebrate Zoology	8

Where can we access to this information? GBIF.ORG Data Portal


<https://www.gbif.org/>

Each download request is stored at gbif.org and is assigned a **DOI** (Digital Object Identifier) resolving



Users who download individual datasets or search results and use them in research or policy agree to cite them using a DOI

- Link to re-download
- Details of contributing datasets
- Relationships modeled in metadata



A screenshot of a GBIF search results page. It shows a table of contributing datasets. The table has two columns: the dataset name and the number of records. The datasets listed are DFO Maritimes Region Cetacean Sightings (227), Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN), Mammalogy Na... (1), iNaturalist Research-grade Observations (207), and SBMNH Vertebrate Zoology (8).

Dataset	Records
DFO Maritimes Region Cetacean Sightings	227
Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN), Mammalogy Na...	1
iNaturalist Research-grade Observations	207
SBMNH Vertebrate Zoology	8

Where can we access to this information? GBIF.ORG Data Portal

<https://www.gbif.org/>

Using **DOIs** enables:

- To track the use of data in literature
- Scientific transparency and reproducibility
- To properly cite the original sources of information
- Reward data-publishing institutions and individuals



#citeTheDOI

<https://www.gbif.org/>



Where can we access to this information? GBIF.ORG Data Portal

<https://www.gbif.org/>

OCCURRENCE DATASET | REGISTERED MARCH 19, 2018

Making the zoology collection at the Natural History Museum of Zimbabwe accessible through GBIF by end of 2017 (BID-AF2015-0117-SMA)

Published by [Natural History Museum of Zimbabwe](#)

✉ Tsitsi Maponga • Kith Mkhwananzi • Melusi Sibanda • Praxedes Rukuni • Moira FitzPatrick

DATASET | METRICS | ACTIVITY | DOWNLOAD

10,965 OCCURRENCES | 5 CITATIONS

A checklist of 11000, mammalian specimen records was published on GBIF. The resulting occurrence dataset provides 10965 (not 11000, due to duplication of accession numbers) records of when and where the specimens were collected. However the data may not be complete in some areas as there are no records for some of the variables. Taxonomic, collection methods and other attributes of this data are documented fully on the checklist. Please refer to our checklist publication on GBIF for this data.

Project ID: [BID-AF2015-0117-SMA](#)
Metadata last modified: May 10, 2018
Data last changed: May 8, 2018
Hosted by: [Natural History Museum of Zimbabwe](#)
License: [CC BY 4.0](#)

How to cite DOI [10.15468/mmhmlb](#)

10,965 Occurrences

100% With taxon match

0% With coordinates

96% With year

Where can we access to this information? GBIF.ORG Data Portal

<https://www.gbif.org/>

SEARCH RESOURCES | 5 RESULTS

LITERATURE

Read more about literature, how it's discovered and linked to GBIF-mediated data.

Complementary bat (Mammalia: Chiroptera) survey techniques uncover two new country records for Nigeria

Literature

Tanshi, I. Ogbeibu, A. Bates, P. (2019) Journal of Threatened Taxa
Knowledge of the bat fauna in Nigeria is limited due to use of outdated collection techniques, and infrequent sampling effort. To advance knowledge of bat diversity in the country, a survey of bats from three localities:—Emu, Okomu National Park (ONP), and Ososo—in southern Nigeria was conducted us...

Bats • Casinycteris campomaanensis • Chaerephon aloysiisabaudiae • Guinean Forest of western Africa

Journal article Open access Peer-reviewed

Data referenced in study DOI 10.15468/dl.slnh4r

The Mammals of Angola

Literature

Beja, P. Vaz Pinto, P. Verissimo, L. Bersacola, E. Fabiano, E. Palmeirim, J. (2019) Biodiversity of Angola
Scientific investigations on the mammals of Angola started over 150 years ago, but information remains scarce and scattered, with only one recent published account. Here we provide a synthesis of the mammals of Angola based on a thorough survey of primary and grey literature, as well as recent unpub...

Africa • Angolan escarpment • Conservation • Endemism • History of mammalogy • Threatened species

Book section

Data referenced in study DOI 10.15468/dl.eo4odv

Museum and Herbarium Collections for Biodiversity Research in Angola

Literature

Figueira, R. Lages, F. (2019) Biodiversity of Angola
The importance of museum and herbarium collections is especially great in biodiverse countries such as Angola, an importance as great as the challenges facing the effective and sustained management of such facilities. The interface that Angola represents between tropical humid climates and semi-dese...

Bioinformatics • Catalogue of life • Checklists • Conservation • Expeditions • GBIF

Book section Open access Peer-reviewed

Data referenced in study DOI 10.15468/dl.urk4kx

A global test of ecoregions

Literature

Gbif.es

Thank you!

villaverde@gbif.es



MINISTERIO
DE CIENCIA
E INNOVACIÓN



Gbif.es

