

# NLBIF relatiedag - 8 maart 2022

*Niels Raes  
NLBIF Node Manager*

# PROGRAMMA

Tijd	Activiteit	Spreker
9:30 - 10:00	Registratie & koffie	
10:00 - 10:10	Welkom	Niels Raes Node manager
10:10 - 11:00	Ontwikkelingen NLBIF, GBIF resultaten, strategisch meerjarenplan en jaarlijkse werkprogramma	
11:00 - 11:30	Koffie	
11:30 - 12:00	QA/QC (quality assurance/quality control) van GBIF data en 'flags' en 'issues'. Wat veroorzaakt ze en hoe corrigeer je je data?	Jeroen Creuwels NLBIF datamanager
12:00 - 12:30	NLBIF-call 2022, nieuwe NLBIF commissie-leden en afscheid van terugtredende leden. NLBIF Challenge: Beleid koppelen aan biodiversiteitsdata	Niels Raes Node manager
12:30 - 13:30	Lunch	
13:30 - 13:50	GBIF Hosted Portals als krachtige oplossing voor online collectieontsluiting	Bram Langeveld, Natuurhistorisch Museum Rotterdam
13:50 - 14:10	Lange-termijn dynamiek van lichaamsgrootte bij vogels	Henk van der Jeugd, Vogeltrekstation NIOO-KNAW Wageningen
14:10 - 14:30	Natuurgegevens door de bril van een ecologisch adviesbureau	Chris Driessen, Regelink Ecologie & Landschap
14:30 - 15:00	Koffie	
15:00 - 15:20	Flora-gegevens van de Nederlands Caribische eilanden	André van Proosdij en John Janssen, WUR
15:20 - 15:40	Historische gegevens: hoe publiceer je die?	Lia Hemerik, WUR
15:40 - 16:15	ARISE: Plug & Play services voor biodiversiteitsdata	Elaine van Ommen Kloeke, Naturalis Biodiversity Center
	Afsluiting	Niels Raes
16:15 - 17:30	Borrel	

# NLBIF RELATIEDAG – 8 MAART 2022

- Ontwikkelingen NLBIF
- NLBIF & GBIF resultaten 2020 & 2021
- GBIF 20 jaar review
- GBIF strategisch meerjarenplan 2017-2021
- GBIF werkprogramma 2022
- GBIF strategisch meerjarenplan 2023-2027
- GBIF hosted portals



# ONTWIKKELINGEN NLBIF

- Sinds 1 januari 2021 is de Stichting “Nationale GBIF Kennisknooppunt” gefuseerd met de Stichting Naturalis Biodiversity Center.
  - Naturalis als ‘institutionele’ GBIF node is opgeheven.
  - Kennis en ‘resources’ worden gedeeld en worden ingebracht voor de uitvoering van het GBIF programma.
  - Hiermee is de impact van NLBIF verder te vergroot.
  - NLBIF kan hiermee de Nederlandse partners op het gebied van biodiversiteitsinformatie in hun kracht zetten en samen met hen een actieve bijdrage leveren aan de verdere ontwikkeling van GBIF.
  - De NLBIF begroting is ongewijzigd en € 225k (€ 226.400,-) blijft ongewijzigd beschikbaar voor de NLBIF-call.
  - Naturalis is uitgesloten van aanvragen voor de NLBIF-call.
  - NLBIF behoudt haar naam:  
**Netherlands Biodiversity Information Facility (NLBIF) – Naturalis Biodiversity Center**

# ONTWIKKELINGEN NLBIF

- NLBIF heeft sinds eind 2020 een communicatie medewerkster, te weten Amy van Nobelen.
- Sinds begin 2021 heeft NLBIF een kwartaal nieuwsbrief die via mailChimp verspreid wordt (avg) aan 634 ontvangers. Schrijf je in via de NLBIF website.

The image shows four versions of the NLBIF newsletter, each with a different date and content. The newsletters are presented as if they are overlapping or stacked.

- 4 maart 2021:** Headline: "Nieuwsbrief". Content: "Beste lezer, Het jaar is nog maar net begonnen, maar binnen NLBIF zijn al volop ontwikkelingen gaande tijd dus voor een eerste update. In deze NLBIF-nieuwsbrief lees je het volgende: NLBIF ondergebracht bij Naturalis • De NLBIF-call 2021 staat open: vergeet je voorstel niet in te dienen • In the picture: Natuurmuseum Brabant • GBIF Young Researchers Award • GBIF Ebbe Nielsen Challenge • Handeling voor georeferencering • GBIF Science Review 2020 • Belang van data-integratie hard gemaakt". Includes a photo of a modern building interior.
- 15 juni 2021:** Headline: "Nieuwsbrief". Content: "Beste lezer, Samen wapenen we ons tegen de biodiversiteitscrisis door onze kennis en samen te versterken. Via NLBIF draagt ieder zijn steentje bij aan het behoud van biodiversiteit! Dankzij het bevorderen we toegang tot actuele informatie rondom biodiversiteit en kunnen we nationale bronnen van biodiversiteitsdata betrekken. Vele partners actief aan mee!" Includes a photo of a modern building interior.
- 12 oktober 2021:** Headline: "Nieuwsbrief". Content: "Beste lezer, Draag jij ook bij aan het behoud van biodiversiteit? Dankzij het bevorderen we toegang tot actuele informatie rondom biodiversiteit en kunnen we nationale bronnen van biodiversiteitsdata betrekken. Vele partners actief aan mee!" Includes a photo of a modern building interior.
- 14 december 2021:** Headline: "Nieuwsbrief". Content: "Beste lezer, Langzaamaan zien we het bewustzijn groeien voor het openbaar delen van biodiversiteitsdata. Of je nu als burger een bijdrage levert via het delen van waarnemingen, als beleidsmaker besluiten maakt op basis van wetenschappelijke data uit GBIF, of als natuurorganisatie je ontdekkingen deelt met de buitenwereld: ieder draagt bij aan kennis over biodiversiteit. En wat je beter kent, kun je ook beter beschermen. In het nieuwe jaar grijpen we dan ook graag de kans om jullie te bedanken. NLBIF wenst iedereen alvast een prettige uiteinde en een voorspoedig 2022!" Includes a photo of a modern building interior.

**Save the date: NLBIF relatiedag op 8 maart**  
Afgelopen jaar gooide de corona-maatregelen roet in ons eten, maar komend jaar hopen we het relatiedag door te kunnen laten gaan: de NLBIF-relatiedag. We nodigen u van harte uit voor de ontwikkelingen die de afgelopen twee jaar bij NLBIF, en onze partners hebben plaatsgevonden. Interesse om een bijdrage te leveren aan de dag, zoals een lezing of presentatie? Laat het gelegenheid om te netwerken en lezingen door is er ruimschoots mogelijkheid om te netwerken en te praten met collega's uit de Nederlandse biodiversiteitsgemeenschap. We hopen op een grote opkomst op 8 maart. Voel je dus vrij om deze uitnodiging door te sturen naar collega's en geïnteresseerden. Je kunt je inschrijven via onderstaand formulier. Zien we je daar?

**Inschrijfformulier NLBIF-relatiedag →**

**Netherlands Annual Ecology Meeting**  
Op donderdag 17 & vrijdag 18 februari 2022 zal de jaarlijkse 'Netherlands Annual Ecology Meeting' plaatsvinden. Dit jaar wordt de 15e editie gehouden. De conferentie is in het bijzonder gericht op mensen die werkzaam zijn op het gebied van ecologie en/of evolutie. Het even versterkt het netwerk van ecologen in Nederland, België en omliggende landen en geeft een overzicht van het werk dat door de mensen in het netwerk wordt verricht. NLBIF-node-manager Niels Raes en programmamanager van ARIS Elaine van Ommeren zullen op de conferentie een symposium organiseren met de titel 'Research

**nlbif** biodiversity information facility

# ONTWIKKELINGEN NLBIF

- NLBIF heeft sinds eind 2020 een communicatie medewerkster, te weten Amy van Nobelen.
- Sinds begin 2021 heeft NLBIF een kwartaal nieuwsbrief die via mailChimp verspreid wordt (avg) aan 634 ontvangers. Schrijf je in via de NLBIF website.
- De NLBIF website is geüpdate en heeft een landingspagina voor de verschillende doelgroepen gekregen.
- Het Apache Log4j veiligheidslek had ook effect op de GBIF IPT servers waardoor deze allemaal geupdate moesten worden. Veel data publishers hebben besloten om hun dataset onder te brengen op de NLBIF IPT. Deze wordt altijd direct van de laaste veilige IPT versie voorzien.
- De NLBIF IPT [<http://ipt.nlbif.nl>] heeft 113 datasets die gedeeld worden met GBIF (1/3/2022).

# ONTWIKKELINGEN NLBIF

- Een IPT heeft als belangrijkste functie om biodiversiteitsdata te kunnen delen met GBIF. De publisher en gebruikersfunctionaliteit liggen bij GBIF.org

The screenshot shows the nlbif IPT interface. At the top, there's a header with the nlbif logo, the text "sharing biodiversity data", and "Integrated Publishing Toolkit (IPT)". Below the header, a navigation bar includes links for Home, Manage Resources, Administration, and About. On the right side of the header, there are icons for a user profile, a mail icon, and an email address: nlbif@naturalis.nl.

The main content area is titled "Hosted resources available through this IPT". It features a table with the following columns: Logo, Name, Organization, Type, Subtype, Records, Last modified, Last publication, and Next publication. A "Filter:" input field is located above the table. The table lists nine resources:

Logo	Name	Organization	Type	Subtype	Records	Last modified	Last publication	Next publication
	Alterra (NL) - Microarthropods inventory in Heathland	Alterra, Wageningen UR	Occurrence	Observation	324	2022-02-15	2022-02-15	--
	Alterra (NL) - Microarthropods inventory in military zone Leusderheide	Alterra, Wageningen UR	Occurrence	Observation	717	2022-02-15	2022-02-15	--
	Amphibian collection of Natuur museum Brabant, Tilburg	Naturumuseum Brabant	Occurrence	Specimen	70	2021-04-23	2021-04-23	--
	Antispilina ludwigi (Heliozelidae) specimen data	Naturalis	Occurrence	--	135	2021-04-27	2021-04-27	--
	Asplanta new genus (Heliozelidae) specimen data	Naturalis	Occurrence	Specimen	350	2020-07-17	2020-07-17	--
	Batum Raptor Count (BRC) - Autumn migration data	Batum Raptor Count	Sampling event	--	725	2020-06-17	2020-06-16	--
	Bee species and numbers caught by coloured pan traps across 20 landscapes in 2012, The Netherlands	Nature Conservation and Plant Ecology Group, Wageningen UR	Sampling event	--	232	2020-04-14	2020-04-14	--
	Bird collection Natuur museum Brabant, Tilburg	Naturumuseum Brabant	Occurrence	Specimen	4588	2020-12-28	2020-12-28	--
	Bohemannia auriciliella (Nepticulidae) specimen data	Naturalis	Occurrence	--	37	2021-02-16	2021-02-16	--
	City of Amsterdam (NL) - Fyke Fishing Piet Ruiter	City of Amsterdam	Occurrence	Observation	8928	2020-04-14	2020-04-14	--

<http://ipt.nlbif.nl/>

# Natural History Museum Rotterdam - Specimens

Published by [Natural History Museum Rotterdam](#)

Sliker F J A + van der Es H + Andeweg R + Langeveld B W

[DATASET](#)[METRICS](#)[ACTIVITY](#)[DOWNLOAD](#)

361,482 OCCURRENCES

336 CITATIONS

Specimen database of the Natural History Museum Rotterdam. The total collection is estimated to hold 400.000 specimens, of which over 85% are digitized at the specimen level and contained in this dataset. Arthropods (56%; mostly European) and molluscs (30%; worldwide recent specimens, fossil specimens from North-West Europe) make up the bulk of the collection. Chordates make up 9% of the collection and include a significant amount of fossil terrestrial and marine vertebrates from the Netherlands... [More](#)

**Het  
Naturhistorisch**

Publication date: February 2, 2022

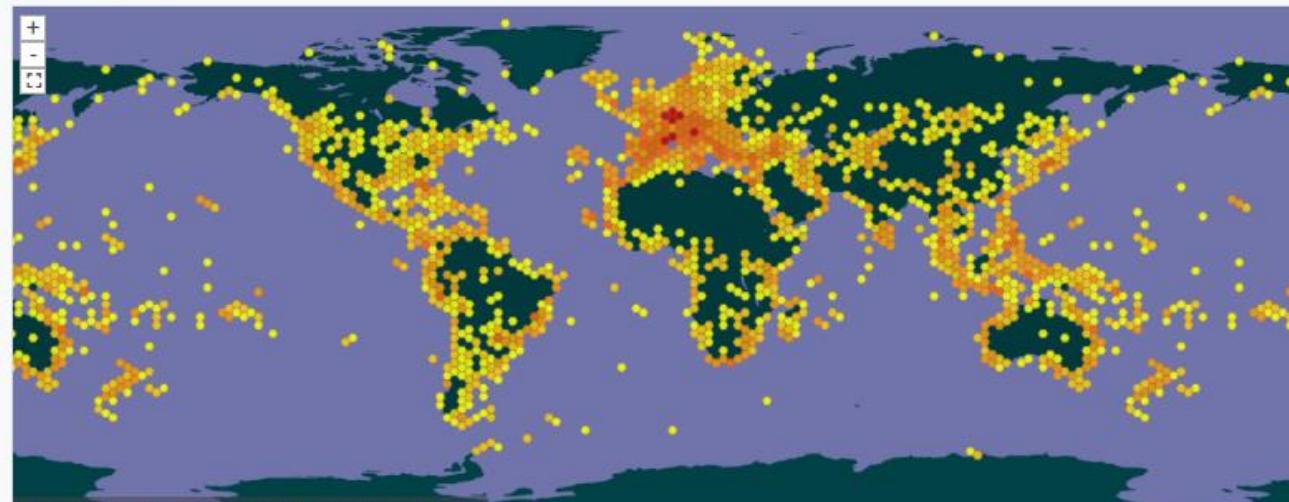
Metadata last modified: February 2, 2022

Hosted by: [Netherlands Biodiversity Information Facility \(NLBIF\)](#)

Licence: CC BY-NC 4.0

[How to cite](#) [DOI](#) 10.15468/kwqasay 361,482 Occurrences 99.9% With taxon match 90% With coordinates 88% With year

324,475 GEOREFERENCED RECORDS



22,705 OCCURRENCES WITH IMAGES

[SEE GALLERY](#)

# Natural History Museum Rotterdam - Specimens

Published by Natural History Museum Rotterdam

Slieker F J A • van der Es H • Andeweg R • Langeveld B W

DATASET METRICS ACTIVITY DOWNLOAD

361,482 OCCURRENCES 326 CITATIONS

## OCCURRENCE METRICS

361,482 Occurrences

99.9% With taxon match

90% With coordinates

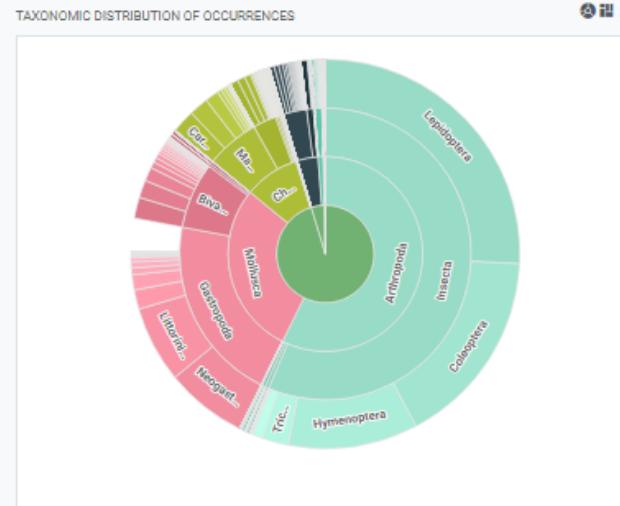
88% With year

## TAXONOMIC DISTRIBUTION OF OCCURRENCES

## Explore Major groups

- Animalia 344,617
- Plantae 16,044
- Fungi 820
- incertae sedis 1

## TAXONOMIC DISTRIBUTION OF OCCURRENCES



## OCCURRENCES PER ISSUES AND FLAGS

Issues and flags	Count
Taxon match higherrank	15,106
Taxon match fuzzy	985
Geodetic datum assumed WGS84	153
Country coordinate mismatch	95
Recorded date invalid	16
Country derived from coordinates	10
Coordinate invalid	3
Occurrence status inferred from individual count	1
Recorded date mismatch	1
Other or unknown	45,013



## OCCURRENCES PER YEAR



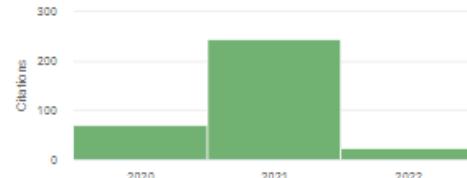
# Natural History Museum Rotterdam - Specimens

Published by [Natural History Museum Rotterdam](#)

Slieker F J A • van der Es H • Andeweg R • Langeveld B W

DATASET METRICS ACTIVITY [DOWNLOAD](#) 361,492 OCCURRENCES 336 CITATIONS

## CITATIONS



336

citations

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

**75,980 download events**

1 OCCURRENCE FROM THIS DATASET

DOI: [10.15468/dl.cc3t7q](https://doi.org/10.15468/dl.cc3t7q)

Date: 1 March 2022

Format: Simple

Occurrences: 1,577

Involved datasets: 87

And

Scientific name

Leccinum molle (Bon) Bon • Lepiota erminea (Fr.) P.Kumm. • Lepista rickenii Singer

Geometry

```
POLYGON((-9.36035 44.71551,-10.59082 42.81152,-11.82129 36.80928,-7.69043 36.17336,-3.38379
35.88905,3.12012 38.13456,9.18457 38.20366,11.7334 37.16032,12.78809 34.74161,17.09473 33.79741,23.15918 34.23451,30.10254
32.62087,33.2666 32.99024,35.72754 35.03,33.00293 35.53223,28.69629 35.17381,28.34473 36.31513,25.7959 37.50973,24.91699
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49.61071,37.0459 50.34546,35.72754 50.40152,33.79395 52.26816,31.66457 51.94426,31.4209 53.27835,32.56348 53.43572,30.98145
54.77535,30.89355 55.52863,28.43262 56.02295,27.20215 57.65716,27.37793 58.30949,27.90527 59.17593,29.66309 59.88894,27.6416
60.58697,31.50879 62.75473,28.78418 69.83962,30.89355 70.28912,29.22363 71.55274,21.75293 71.30079,14.28223 70.14036,11.38184
67.47492,4.87793 63.66576,-5.53711 71.52491,-10.63477 71.69129,-21.5332 67.74276,-28.56445 65.36684,-24.3457 61.35461,-9.36035
44.71551))
```

Has coordinate

true

Has geospatial issue

false

Year

After start of 1980

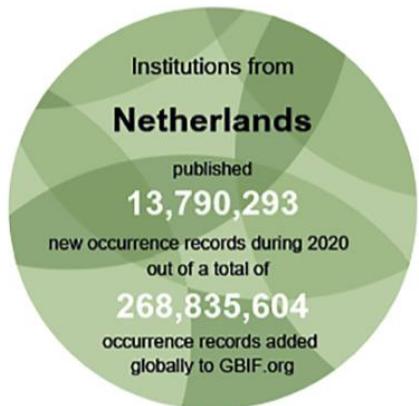
Year

Before end of 2021

[RERUN QUERY](#) [SHOW](#)

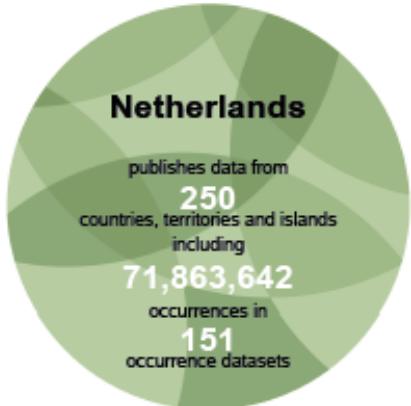
# NLBIF & GBIF RESULTATEN 2020 & 2021

2020



-11,180,671

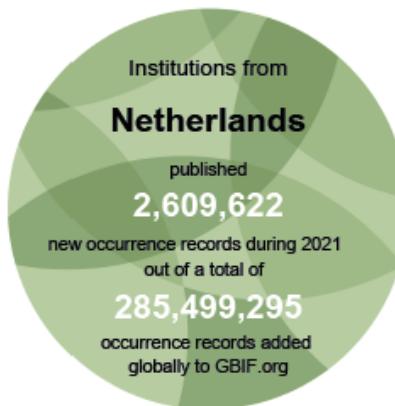
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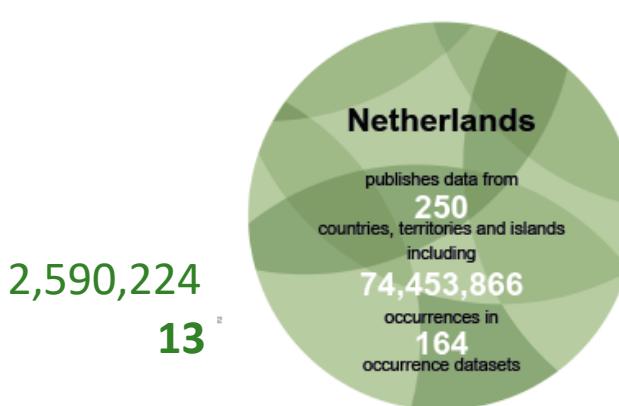
Providers

39

2021



Waarneming.nl data worden binnenkort geupdate



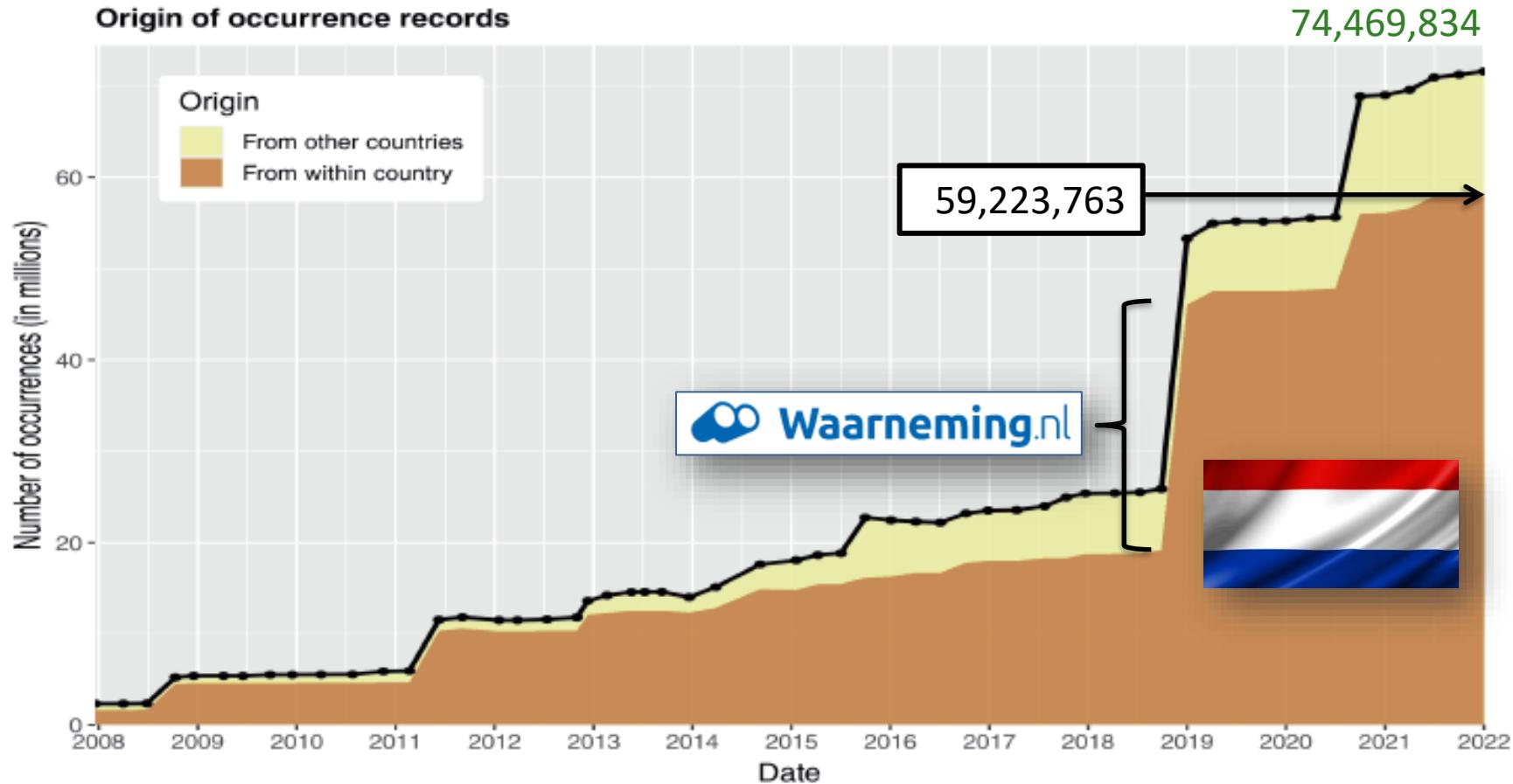
Providers

4

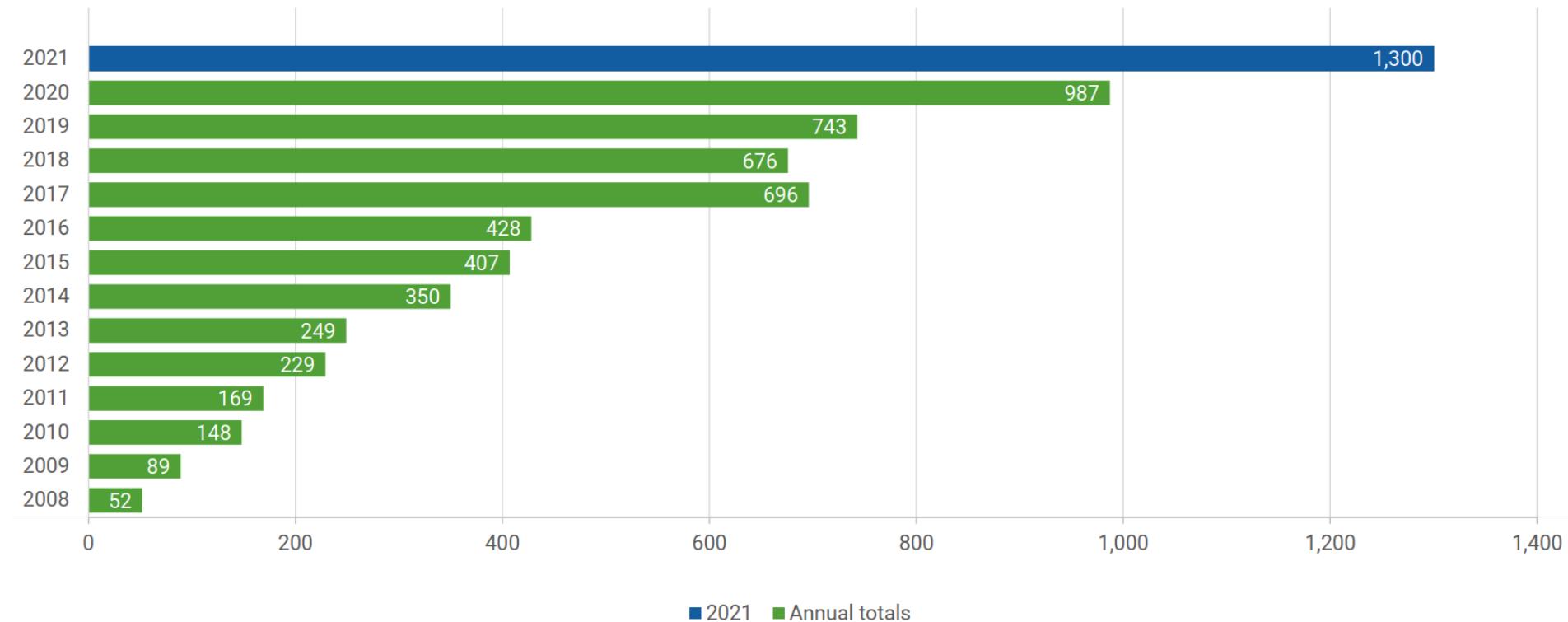
Nieuwe providers 2021

1. Regelink Ecologie & Landschap
2. Universiteits Museum Utrecht
3. het Waterschapshuis
4. Bomenstichting

# NLBIF & GBIF RESULTATEN 2020 & 2021

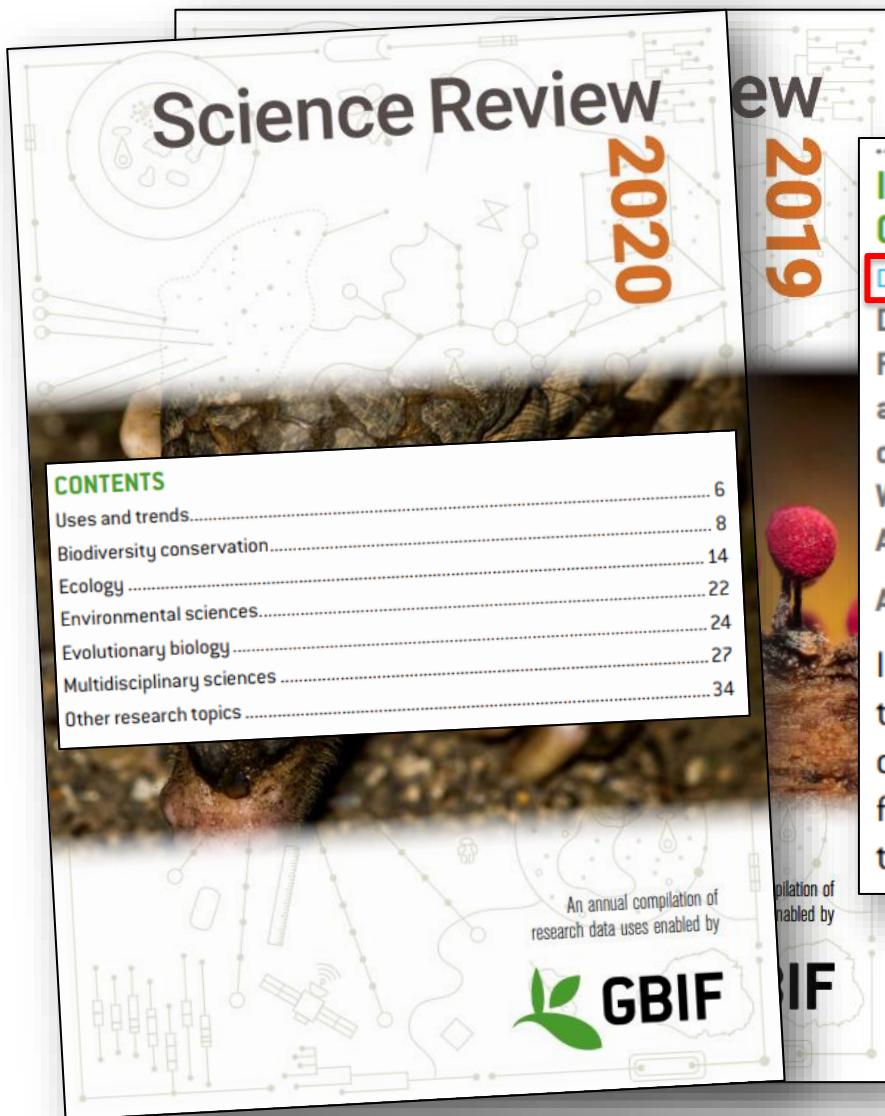


# NLBIF & GBIF RESULTATEN 2020 & 2021



[https://www.gbif.org/resource/search?contentType=literature&literatureType=journal&relevance=GBIF\\_USED&peerReview=true](https://www.gbif.org/resource/search?contentType=literature&literatureType=journal&relevance=GBIF_USED&peerReview=true)

# NLBIF & GBIF RESULTATEN 2020 & 2021



<https://www.gbif.org/science-review>

## IMPACTS OF GLOBAL LAND-USE AND CLIMATE CHANGE ON PLANT BIODIVERSITY

**DATA USED:** 52 MILLION SPECIES OCCURRENCES

Di Marco M, Harwood TD, Hoskins AJ, Ware C, Hill SLL and Ferrier S (2019) Projecting impacts of global climate and land-use scenarios on plant biodiversity using compositional-turnover modelling. *Global Change Biology*. Wiley 25(8): 2763–2778.

Available at: <https://doi.org/10.1111/gcb.14663>

**Author countries/areas:** Australia, Italy, UK

In response to accelerating rates of biodiversity loss, the global community is considering new, ambitious conservation targets. To inform policy decisions, fine-scale assessments predicting future impacts of threats to biodiversity are therefore crucial.

<https://doi.org/10.1111/gcb.14663>

# NLBIF & GBIF RESULTATEN 2020 & 2021

DATA FROM NETHERLANDS

74,469,834

[Published occurrences](#)

322

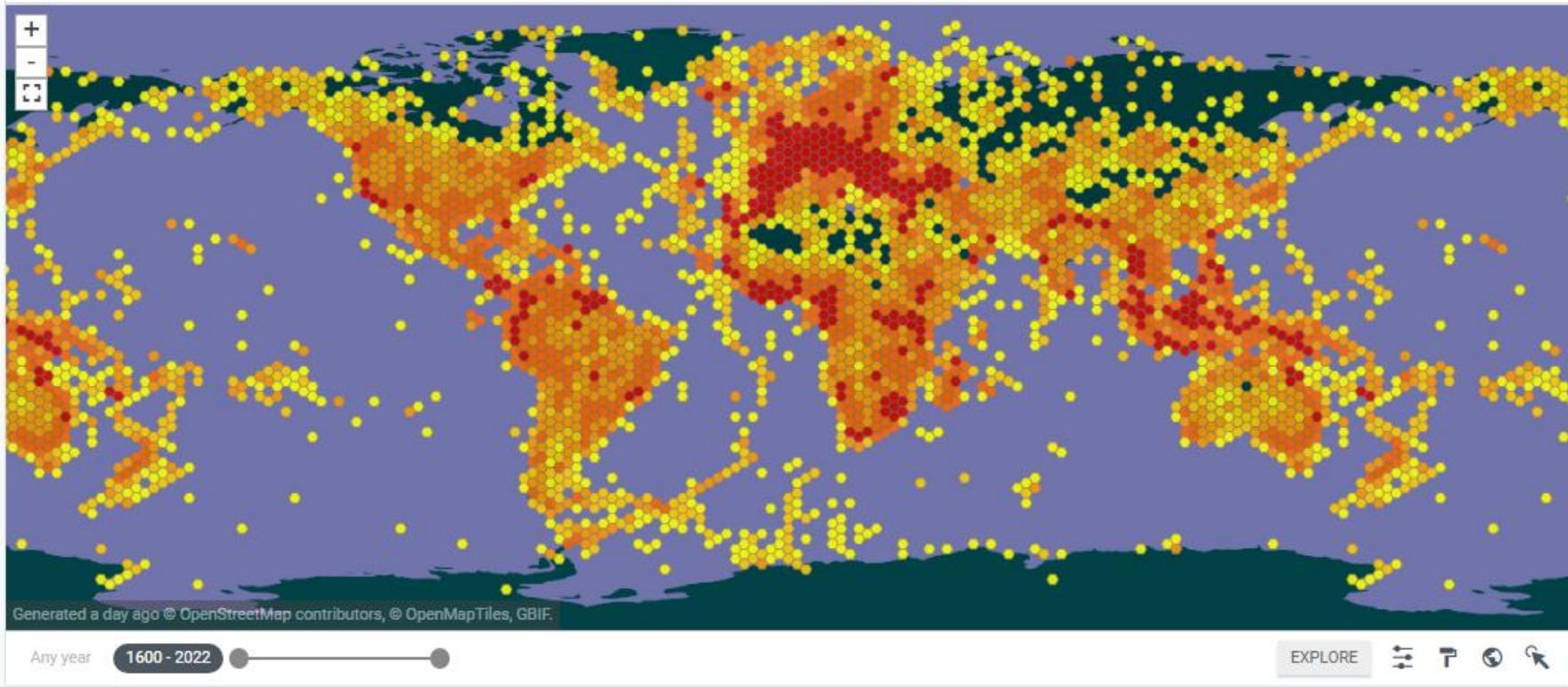
[Published datasets](#)

250

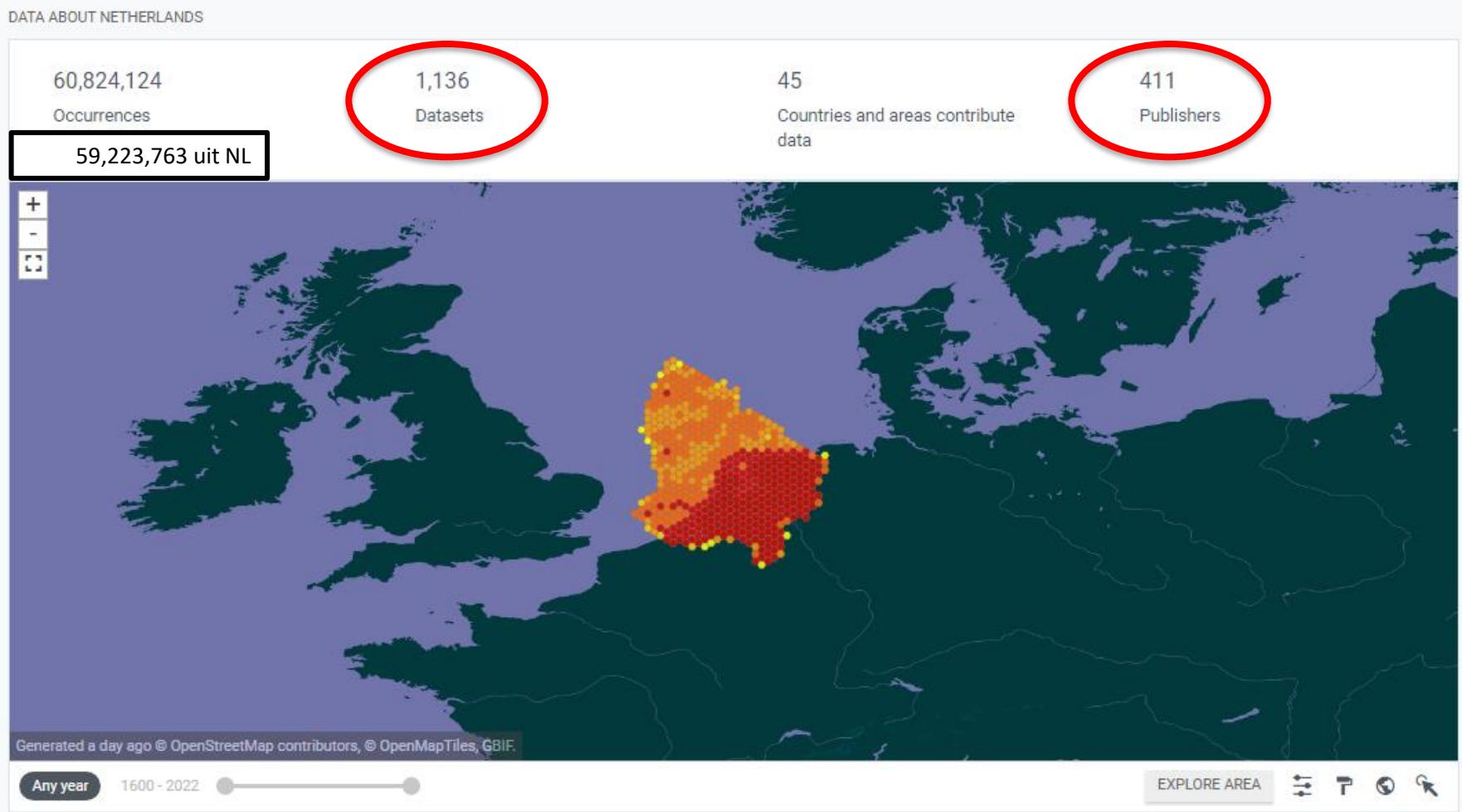
Countries and areas covered by  
data from Netherlands

43

Publishers from Netherlands



# NLBIF & GBIF RESULTATEN 2020 & 2021



# NLBIF & GBIF RESULTATEN 2020 & 2021

- GBIF data snapshots in de cloud.

The screenshot shows the Microsoft Planetary Computer interface. At the top, there is a navigation bar with the Microsoft logo, 'Planetary Computer', and links for 'Explore', 'Data Catalog', 'Hub', 'Applications', and 'Documentation'. A 'Request access' button is also present. Below the navigation bar, the title 'Global Biodiversity Information Facility (GBIF)' is displayed, along with three category buttons: 'GBIF', 'Biodiversity', and 'Species'. The main content area features a large map of the world with green highlights representing biodiversity data. Below the map, there are links for 'Overview', 'Example Notebook', 'Blob Storage Notebook', and 'Storage Documentation'. The 'Overview' section contains text about the GBIF dataset, mentioning it is an international network and data infrastructure funded by governments, providing global data on species occurrences. It notes that GBIF currently integrates datasets documenting over 1.6 billion species occurrences. The text also describes how the GBIF occurrence dataset combines data from various sources like natural history museums, citizen science networks, and environmental surveys. It explains that data is stored in Parquet format and follows Darwin Core standards. A note about citation guidelines and a DOI link for the dataset are also provided. To the right of the overview text, there is a 'Spatial Extent' section showing a world map divided into three panels, with a copyright notice for TomTom. Below this is a 'Temporal extent' section indicating the data is from 04/13/2021 to Present.

Datasets

## Global Biodiversity Information Facility (GBIF)

GBIF Biodiversity Species

Overview Example Notebook Blob Storage Notebook Storage Documentation

### Overview

The [Global Biodiversity Information Facility](#) (GBIF) is an international network and data infrastructure funded by the world's governments, providing global data that document the occurrence of species. GBIF currently integrates datasets documenting over 1.6 billion species occurrences.

The GBIF occurrence dataset combines data from a wide array of sources, including specimen-related data from natural history museums, observations from citizen science networks, and automated environmental surveys. While these data are constantly changing at [GBIF.org](#), periodic snapshots are taken and made available here.

Data are stored in [Parquet](#) format; the Parquet file schema is described below. Most field names correspond to [terms from the Darwin Core standard](#), and have been interpreted by GBIF's systems to align taxonomy, location, dates, etc. Additional information may be retrieved using the [GBIF API](#).

Please refer to the GBIF [citation guidelines](#) for information about how to cite GBIF data in publications.. For analyses using the whole dataset, please use the following citation:

GBIF.org ([Date]) GBIF Occurrence Data [DOI of dataset]

Spatial Extent

Temporal extent

04/13/2021 – Present

© 2022 TomTom

# NLBIF & GBIF RESULTATEN 2020 & 2021

- GBIF data snapshots in de cloud.
- 52 nieuwe projecten zijn gefinancierd via **BID** (Biodiversity Information for Development) ...

PROGRAMME									
BID: Biodiversity Information for Development									
ABOUT		NEWS	EVENTS	PROJECTS					
Title	Grant type	Start ▾	End	Funding allocated	Est. co-funding	Status	Country or area	Project ID	Call
 Creating a framework for mobilizing ecological research data from the New Guinea Binatang Research Center	Institution-level biodiversity data mobilization grant	September 1, 2021	February 28, 2023	€19,548	€8,320	Approved	Papua New Guinea	BID-PA2020-007-INS	<a href="#">BID 2020 Pacific</a>
 First steps for biodiversity data publishing for Hispaniola	Regional biodiversity data mobilization grant	September 1, 2021	June 29, 2023	€57,898	€41,427	Approved	Dominican Republic	BID-CA2020-034-REG	<a href="#">BID 2020 Caribbean</a>
 Collections-based engagement of decision-makers to save globally threatened epiphytes in Colombia	Data-use grant	September 1, 2021	February 28, 2023	€58,682	€60,935	Approved	Colombia	BID-CA2020-047-USE	<a href="#">BID 2020 Caribbean</a>
 Mobilizing natural history collections of the Dominican Republic	National biodiversity data mobilization grant	August 1, 2021	May 31, 2023	€34,352	€25,358	Approved	Dominican Republic	BID-CA2020-031-NAC	<a href="#">BID 2020 Caribbean</a>
 Preliminary arthropod checklists and occurrences from Caribbean Colombia	Institution-level biodiversity data mobilization grant	August 1, 2021	June 30, 2023	€19,673	€8,432	Approved	Colombia	BID-CA2020-036-INS	<a href="#">BID 2020 Caribbean</a>
 Data mobilization for key entomological groups across Caribbean Colombia	National biodiversity data mobilization grant	July 10, 2021	June 30, 2023	€39,934	€44,951	Approved	Colombia	BID-CA2020-045-NAC	<a href="#">BID 2020 Caribbean</a>
 Rescuing the knowledge base of Venezuela's marine biodiversity	National biodiversity data mobilization grant	July 5, 2021	September 30, 2022	€39,569	€31,713	Approved	Venezuela (Bolivarian Republic of)	BID-CA2020-025-NAC	<a href="#">BID 2020 Caribbean</a>

<https://www.gbif.org/programme/82243/bid-biodiversity-information-for-development#projects>

# NLBIF & GBIF RESULTATEN 2020 & 2021

- GBIF data snapshots in de cloud.
- 52 nieuwe projecten zijn gefinancierd via BID (Biodiversity Information for Development), BIFA (Biodiversity Information Fund for Asia) ...

PROGRAMME									
BIFA: Biodiversity Information Fund for Asia									
ABOUT	NEWS	EVENTS	PROJECTS						
Title	Grant type	Start ▾	End	Funding allocated	Est. co-funding	Status	Country or area	Project ID	Call
 Seeing TIGER for the bees: digitizing apian specimens from Thailand's national parks		November 1, 2021	October 31, 2022	€11,650	€11,650	In progress	Thailand	BIFA6_009	<span style="border: 2px solid red; padding: 2px;">BIFA 2020</span>
 Mobilizing data on ecologically important insects in Malaysia and Singapore		November 1, 2021	February 28, 2023	€19,450	€43,921	In progress	Singapore	BIFA6_032	BIFA 2020
 Using microbial metabarcoding to monitor biodiversity and bioindicators in the Mekong River		September 2, 2021	February 28, 2023	€17,984	€979	In progress	Thailand	BIFA6_030	BIFA 2020
 Tending to the neglected diversity of beetles and Darwin wasps in Southwest China's "Lost World"		September 1, 2021	February 28, 2023	€19,602	€28,158	In progress	China	BIFA6_006	BIFA 2020
 Digitization and mobilization of specimen data from Indonesia's Herbarium Bogoriense		September 1, 2021	February 28, 2023	€19,171	€7,222	In progress	Indonesia	BIFA6_014	BIFA 2020
 Sharing eDNA data on sharks to advance conservation		September 1, 2021	February 28, 2023	€19,970	€7,742	In progress	Indonesia	BIFA6_021	BIFA 2020
 Improving knowledge of Asian pteridophytes through DNA sampling of specimens in regional collections		September 1, 2021	February 28, 2023	€20,000	€3,084	In progress	Chinese Taipei	BIFA6_010	BIFA 2020

<https://www.gbif.org/programme/82629/bifa-biodiversity-information-fund-for-asia#projects>

# NLBIF & GBIF RESULTATEN 2020 & 2021

- GBIF data snapshots in de cloud.
- 52 nieuwe projecten zijn gefinancierd via BID (Biodiversity Information for Development), BIFA (Biodiversity Information Fund for Asia), en CESP (Capacity Enhancement Support Programme).

PROGRAMME									
Capacity Enhancement Support Programme									
ABOUT	NEWS	PROJECTS							
Title	Grant type	Start ▾	End	Funding allocated	Est. co-funding	Status	Country or area	Project ID	Call
 Enhancing capacity of GBIF South Sudan		September 1, 2021	July 31, 2022	€14,994	€5,081	In progress	South Sudan	CESP2021-009	<b>CESP 2021</b>
 Mentoring of GBIF Armenia by GBIF France		August 17, 2021	July 31, 2022	€14,260	€27,000	In progress	Armenia	CESP2021-010	CESP 2021
 Extending knowledge on biodiversity data quality and publication in the Spanish-speaking community		August 1, 2021	July 31, 2022	€14,800	€27,240	In progress	Argentina	CESP2021-007	CESP 2021
 Filling taxonomic and geographic gaps in open data by strengthening skills of the Brazilian zoological collections network		August 1, 2021	July 31, 2022	€15,000	€50,197	In progress	Brazil	CESP2021-008	CESP 2021
 Mentoring of GBIF Cameroon by GBIF Benin and GBIF France		August 1, 2021	July 31, 2022	€14,987	€30,802	In progress	Cameroon	CESP2021-002	CESP 2021

<https://www.gbif.org/programme/82219/capacity-enhancement-support-programme#projects>

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- GBIF heeft de ‘Global Registry of Scientific Collections’ ‘revived’ en opgenomen in de GBIF registry.

# NLBIF & GBIF RESULTATEN 2020 & 2021

Get data How-to Tools Community About

nl-bif

## GBIF Registry of Scientific Collections

ABOUT INSTITUTIONS COLLECTIONS



Cephalotes integerimus. Photo by Vincent Perrichot via AntWeb, licensed under CC BY-SA 4.0.

This registry of scientific collections builds on GRSciColl, a comprehensive, community-curated clearinghouse of collections information originally developed by Consortium of the Barcode of Life (CBOL).

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

# NLBIF & GBIF RESULTATEN 2020 & 2021

**GBIF Registry**

- Organizations
- Datasets
- Networks
- Installations
- GrSciColl collections**
- GrSciColl institutions**
- Nodes
- Vocabularies
- Suggested changes
- Monitoring

The GBIF Registry



Picasso bug (*Sphaerocoris annulus*) by hubertus via iNaturalist. Photo licensed under CC BY-NC 4.0.

Manage the entities that make up the GBIF network

Welcome to the GBIF registry console!

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

# NLBIF & GBIF RESULTATEN 2020 & 2021

- GBIF data snapshots in de cloud.
- 52 nieuwe projecten zijn gefinancierd via BID (Biodiversity Information for Development), BIFA (Biodiversity Information Fund for Asia), en CESP (Capacity Enhancement Support Programme).
- GBIF heeft de ‘Global Registry of Scientific Collections’ ‘revived’ en opgenomen in de GBIF registry.  
Het doel van GRSciColl is:
  - **Toegang verbeteren** tot informatie over instituten, hun wetenschappelijke collecties en de collectie-managers.
  - **Verbeteren van ‘interoperability’** tussen databases door unieke identifiers te koppelen aan instituten en collecties.

# NLBIF & GBIF RESULTATEN 2020 & 2021

- NLBIF-call 2021 heeft 22 aanvragen ontvangen welke zijn beoordeeld door de NLBIF commissie.

<i>NLBIF - Project code</i>	<i>Organisatie - Project code</i>	<i>Organisatie</i>	<i>Project titel</i>
nlbif2021.018		Xeno-canto	Bat sounds on Xeno-canto & GBIF
nlbif2021.011	2021-066	EIS Kenniscentrum Insecten	Nederlandse slankpootvliegenda (Diptera: Dolichopodidae) voor de internationale gemeenschap en citizen scientists
nlbif2021.015		FLORON	Botanische Collectie op de kaart
nlbif2021.009		CALIDRIS	Long-term trends in body condition and timing of moult of shorebirds mirroring habitat status of the Dutch Wadden Sea
nlbif2021.004		NIOO-KNAW	MOVE2GBIF - Mobilizing animal GPS tracking data to Movebank and GBIF
nlbif2021.012		DCNA	Beeldherkenning Caribisch gebied
nlbif2021.016		Natuurmuseum Brabant	Verbetering en ontsluiting van wetenschappelijke collectiegegevens van Natuur museum Brabant
nlbif2021.021		Catalogue of Life	Mobilisatie en gebruik van relevante soortenlijsten voor Nederland via de nieuwe Catalogue of Life infrastructuur
nlbif2021.001		Natuurhistorisch Museum Rotterdam	Mobilisatie van waarnemingen van het eiland Goeree
nlbif2021.003		Biometris	Beschikbaar maken van monitoringgegevens van insecten uit het stroomdallandschap van de Drentsche Aa

 nlbif

HOME PROJECTEN NLBIF CALL ZELF MEEDÖN OVERONS CONTACT

### Lopende projecten



Lange-termijn trends in lichaamsconditie van steltlopers van de...

Onderwerp: Data / Infrastructuur  
Titel: Bat sounds on Xeno-canto & GBIF  
Partner: Xeno-canto  
Projectleider: Wim de Fouw & Wim Folker  
Projectcode: nlbif2021.018  
[Lees meer](#)



Bat sounds on Xeno-canto & GBIF

Onderwerp: Data / Infrastructuur  
Titel: Botanische Collectie op de Kaart  
Partner: FLORON/RAVON  
Projectleider: Laurens Spaans  
Projectcode: nlbif2021.015  
[Lees meer](#)



Botanische Collectie op de Kaart

Onderwerp: Data / Infrastructuur  
Titel: Gegevens van negen maanden monitoren (1996) van...

<https://www.nlbif.nl/projecten/>

Beeldherkenning Nederlands Caribisch gebied

Onderwerp: Infrastructuur/Data  
Titel: Beeldherkenning Nederlands Caribisch gebied  
Partner: Dutch Caribbean Nature Alliance – Naturalis – Observation International  
Projectleider: Nadine Berrevoets  
Projectcode: NLBIF2021.012  
[Lees meer](#)

Mobilisatie van waarnemingen van het eiland Goeree

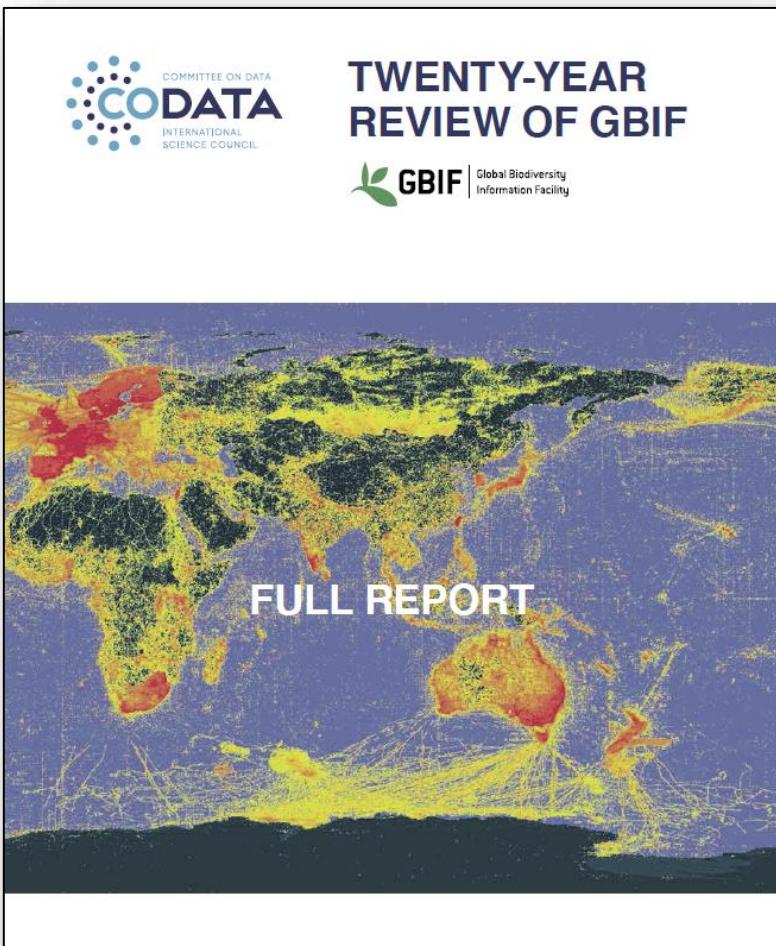
Onderwerp: Data  
Titel: Mobilisatie van waarnemingen van het eiland Goeree  
Partner: Natuurhistorisch Museum Rotterdam  
Projectleider: Bram Langewald  
Projectcode: nlbif2021.001  
[Lees meer](#)

Beschikbaar maken van monitoringgegevens van insecten uit het stroomdallandschap van de Drentsche Aa

Onderwerp: Data  
Titel: Beschikbaar maken van monitoringgegevens van insecten uit het stroomdallandschap van de Drentsche Aa  
Partner: Biometris  
Projectleider: Lia Hemink  
Projectcode: nlbif2021.003  
[Lees meer](#)



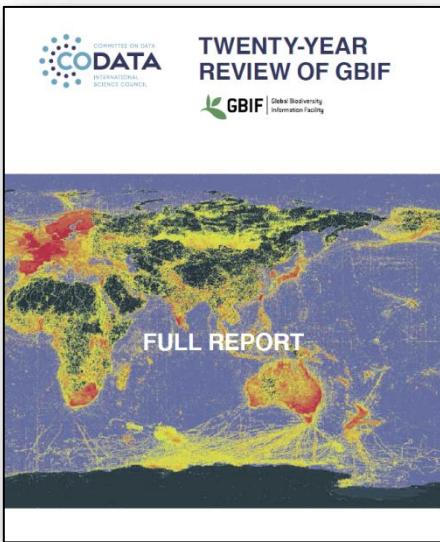
# GBIF 20 JAAR REVIEW



- GBIF is “the most comprehensive, openly available, application-agnostic (most unbiased), easiest-to-use, and modern access point to known digital species occurrence data.”
- “As a global, distributed platform, GBIF is viewed widely as being a major success and a great improvement over alternative solutions.”
- “This relates equally to the data it provides and to its capacity building activities.”

CODATA, the Committee on Data of the International Science Council; Pfeifferberger, Hans; Uhlir, Paul; Twenty-Year Review of GBIF (CODATA, Paris, 2020). <https://doi.org/10.35035/ctzm-hz97>

# GBIF 20 JAAR REVIEW



CODATA, the Committee on Data of the International Science Council; Pfeifferberger, Hans; Uhlir, Paul; Twenty-Year Review of GBIF (CODATA, Paris, 2020).

<https://doi.org/10.35035/ctzm-hz97>

Nevertheless, the review identifies major challenges lying ahead for GBIF grouped into four overarching areas:

- **Data and technologies**, including fitness for purpose, transparency and completeness of data, as well as addressing the importance of data based on remote sensing, genomic analysis, other automated observations and contributions by citizens.
- **GBIF's organization and community**, including gaps in participation from some global regions, especially Asia, and the functioning of the network of national and thematic nodes.
- **The domain of funding**, noting the challenges of maintaining sufficient funds to cover both the core global activities of GBIF and the staffing of national nodes.
- **Management of expectations**, addressing the risk that stakeholders may have unrealistic expectations of what GBIF is able to achieve given the level of resources and effort required.

# GBIF 20 JAAR REVIEW



<https://j.mp/gbifES20>

The review makes 21 (27) separate recommendations aimed at addressing these challenges, divided into:

## General

- R1a, Data Quality and Quantity (p.121)
- R1b, Technology and standards (p.121)
- R2, Networking (p.121)

# GBIF 20 JAAR REVIEW



<https://j.mp/gbifES20>

The review makes 21 (27) separate recommendations aimed at addressing these challenges, divided into:

## Short-term

- R3, **Visibility** (p.122)
- R4a, **Value Proposition** (p.122)
- R4b, Grand Challenge (p.122)
- R5, Eastern Participation (p.122)
- R6, Strengthen Nodes (p.123)
- R7, Communicate Successes (p.123)
- R8, **Improve Data Fitness** (p.123)
- R9, Publish Methods and Applications (p.124)
- R10a, Manage Expectations (p.124)
- R10b, Leverage the Network (p.124)
- R11, Urgent Deliberations and Decisions of the Governing Board (p.124)

# GBIF 20 JAAR REVIEW



<https://j.mp/gbifES20>

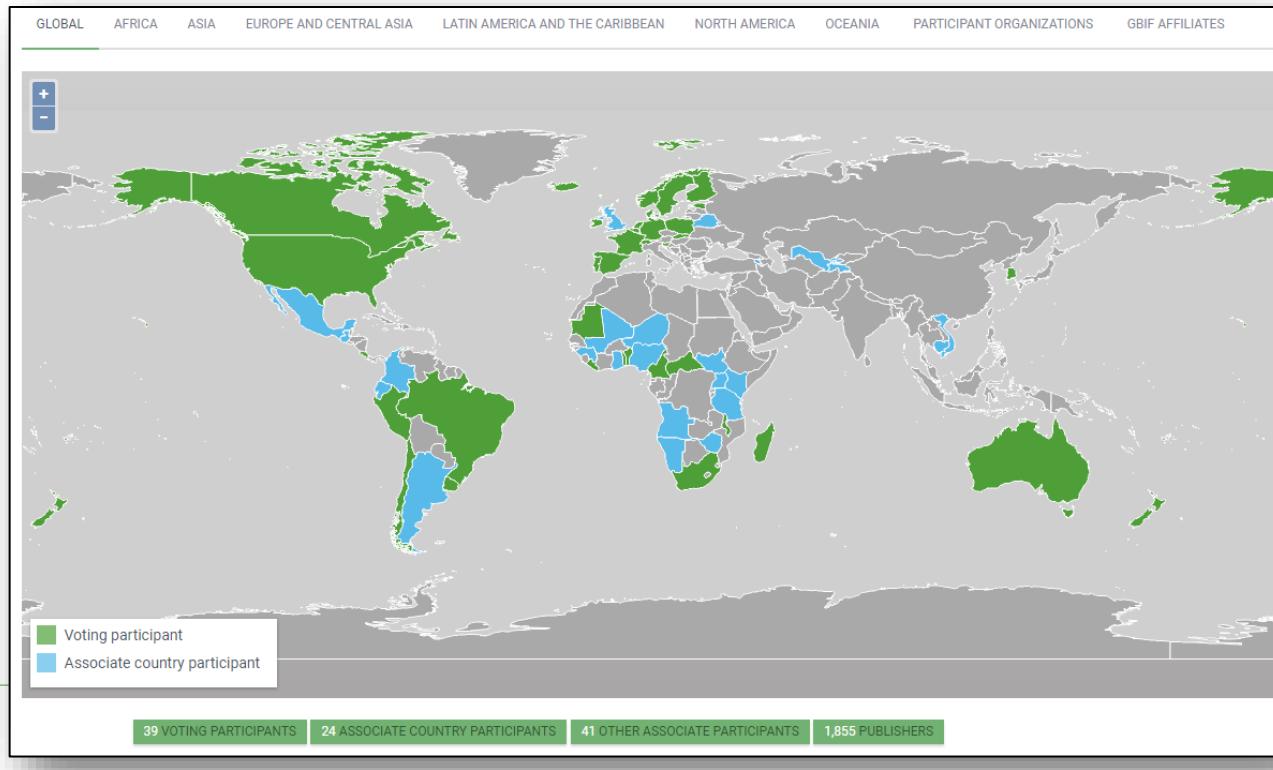
The review makes 21 (27) separate recommendations aimed at addressing these challenges, divided into:

## Long-term

- R12, Create Advisory Board (p.125)
- R13, Foresight and Monitoring (p.125)
- R14, Leadership (p.126)
- R15, **Feedback and Quality Assurance** (p.126)
- R16, **Full-Service Portal** (p.127)
- R17, Long-Term Strategy (p.127)
- R18, **Asian Participation** (p.127)
- R19, Staffing Increase (p.128)
- R20, Organization and Funding of Nodes (p.128)
- R21a, Funding Guidelines and Ability to Execute (p.128)
- R21b, Increased Core Funding (p.128)
- R21c, Core Funding Sources (p.128)
- R21d, Node Funding Sources (p.128)

# GBIF STRATEGISCH MEERJARENPLAN 2017-2021

- De inhoud van het strategische meerjarenplan wordt vorm gegeven tijdens GBIF's bestuursvergaderingen waarin GBIF's 'voting participants' hun mening kunnen geven over de voorgestelde thema's die gepresenteerd worden.
- Op dit moment bestaat de GBIF gemeenschap uit ...



# GBIF STRATEGISCH MEERJARENPLAN 2017-2021

- De inhoud van het strategische meerjarenplan wordt vorm gegeven tijdens GBIF's bestuursvergaderingen waarin GBIF's 'voting participants' hun mening kunnen geven over de voorgestelde thema's die gepresenteerd worden.
- Op dit moment bestaat de GBIF gemeenschap uit ...
- Wegens COVID-19 is het strategisch meerjarenplan 2017-2021 met een jaar verlengd t/m 2022.
- Het meerjarenplan kent vijf prioriteit gebieden met daaraan verbonden een aantal activiteiten.

# GBIF STRATEGISCH MEERJARENPLAN 2017-2021

## 1. Versterk het mondiale netwerk

- 1a - Verwijder barrières voor deelname aan GBIF
- 1b - Vergroot de voordelen van het publiceren van biodiversiteitsdata via GBIF.org
- 1c - Geef invulling aan capaciteitsbehoeften

## 2. Verbeter de infrastructuur voor biodiversiteitsinformatie

- 2a - Coördineer de visie en versterk de samenwerking met belangrijke biodiversiteitsinformatie-initiatieven
- 2b - Promoot datastandaardisatie en mechanismen voor het uitwisselen van biodiversiteitsdata
- 2c - Zorg voor een stabiele en permanente data-infrastructuur ter ondersteuning van onderzoek

## 3. Vul hiaten in de gegevens

- 3a - Vergroot de taxonomische dekking van GBIF-data
- 3b - Identificeer ruimtelijke en temporele gaten in de dekking van GBIF-data en prioriteer het vullen daarvan
- 3c - Betrek instituten en onderzoekers die in het bezit zijn van complementaire biodiversiteitsdata

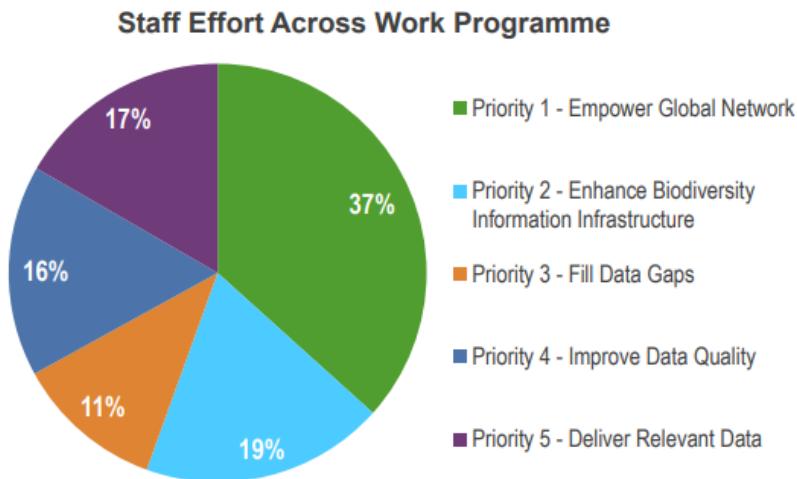
# GBIF STRATEGISCH MEERJARENPLAN 2017-2021

## 4. Verbeter de datakwaliteit

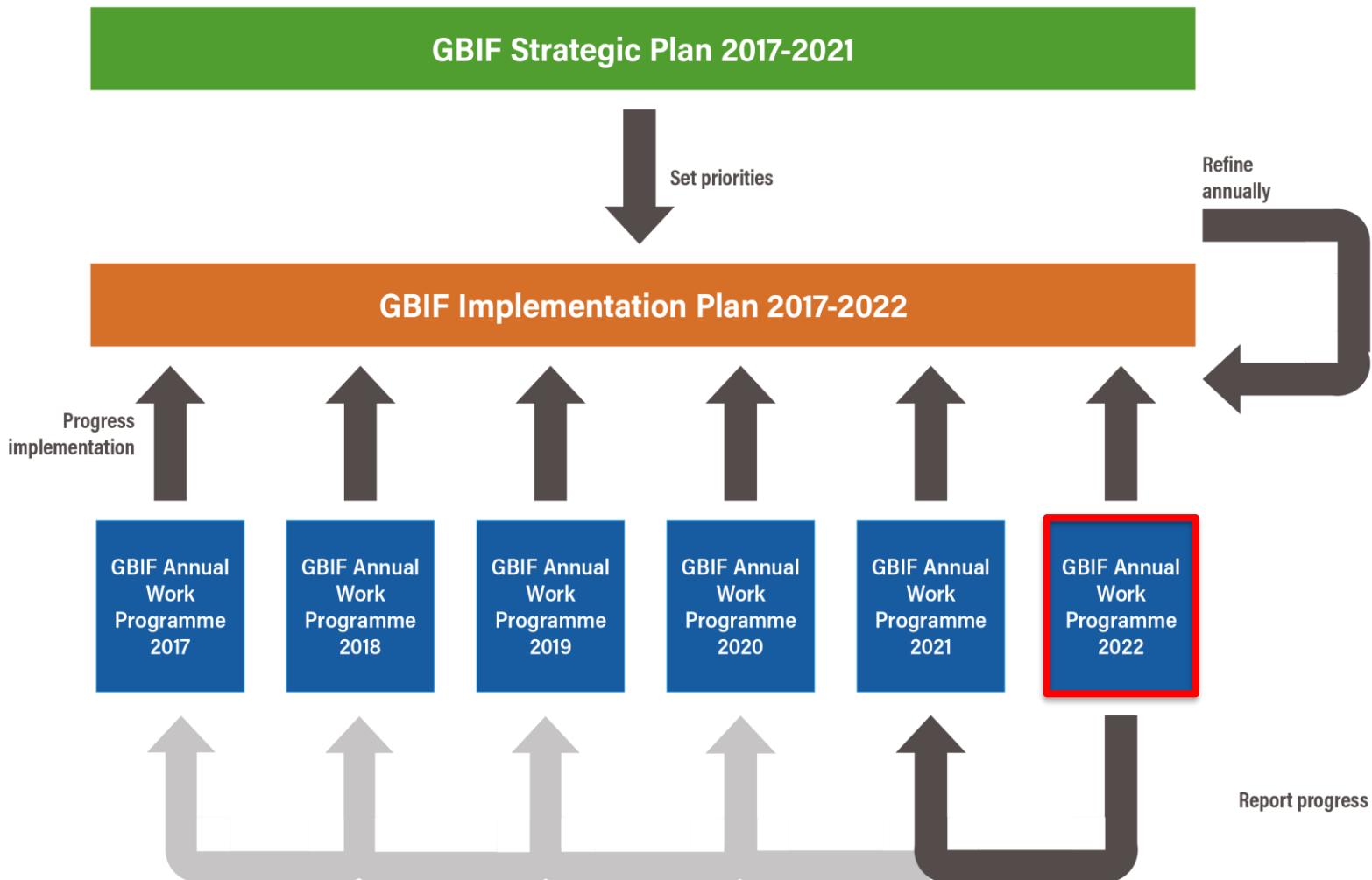
- 4a - Verbeter geautomatiseerde validatie
- 4b - Implementeer middelen voor expertcuratie
- 4c - Verstrek indicatoren voor datakwaliteit

## 5. Lever relevante data

- 5a - Betrek expertgemeenschappen in het datamanagement om de hoogst mogelijke datakwaliteit te behalen
- 5b - Lever gestructureerde en gevalideerde biodiversiteitsdata voor gebruik in applicaties



# GBIF WERKPROGRAMMA 2022



<https://doi.org/10.35035/doc-jjrz-b144>

# GBIF WERKPROGRAMMA 2022

## Table of Contents

### Colophon

Suggested citation

Persistent URI

Document control

### Overview

GBIF Annual Work  
Programme 2022

Financial situation

Planned expenditure

Secretariat staffing

Overview of 2022 Work  
Items

2022 Implementation Plan  
Update

Priority 1: Empower Global  
Network

Activity 1a: Focus on  
people

Activity 1b: Strengthen  
skills

Activity 1c: Equip

## Overview of 2022 Work Items

This following is a summary of all 2022 Work Items proposed in the 2022 update of the Implementation Plan below. It is intended to summarize the work items for which approval is sought from the Governing Board at GB28. Accordingly, it does not include the additional commitments made and reported by Participants in the detailed activity sections.

### Activity 1a: Focus on people

- Improve representation of individuals on GBIF.org, with more coherent and integrated handling of the roles and profiles of Secretariat staff and network members, including biographies, activities and other related information

### Activity 1b: Strengthen skills

- Develop new training module on data quality management, targeted at GBIF nodes
- Monitor impact of GBIF training programmes, based on uptake of existing training resources, skills certification through digital badges, replication of courses throughout the network, and outputs of data and other products linked to participation in training
- Further develop joint guidance with OBIS on publication of marine datasets through both networks

<https://docs.gbif.org/2022-work-programme/en/#overview-of-2022-work-items>

# GBIF WERKPROGRAMMA 2022

## Activity 1d: Equip data publishers

- Building on the 2021 work of the sensitive species working group, **commission an analysis of the current scale of sensitive species data published through GBIF**, evaluation of the evidence that such data presents risks of harm, and recommendations for applying a risk assessment approach (€15K)

## Activity 1e: Expand national participation

- Use the delayed agreement of the post-2020 Global Biodiversity Framework to **further emphasize GBIF's value to countries and promote expanded participation**

## Activity 2a: Modernize data standards

- Continue to participate in the ongoing **Open Digital Specimen** and **Extended Specimen Network** standards development and strive towards a common solution
- Together with the Atlas of Living Australia (**ALA**), support the Living Atlas community, in adoption of the **shared data pipelines**

# GBIF WERKPROGRAMMA 2022

## Activity 3a: Identify priority gaps

- Explore the **use of data gap analysis to prioritize support for data mobilization** through funded programmes coordinated by GBIF, and to document the value added by existing projects

## Activity 3b: Expand data streams

- Building on the framework developed in 2021, establish data mobilization campaigns for **additional thematic data streams** (possibly freshwater, DNA-derived data and tropical biodiversity) (€40K)
- Continue working with partners to **increase mobilization and improve visibility of biodiversity monitoring datasets** in GBIF

## Activity 3c: Engage data holders

- Building on preparatory work and partnerships developed in 2021, **scale up mobilization of primary biodiversity data from the private sector**, through the Data4Nature initiative and establishment of help desk services

## Activity 5c: Support biodiversity assessment

- **Continue to engage with the IPBES Data and Knowledge Task Force** to support use of GBIF-mediated data in ongoing and upcoming assessments

# GBIF STRATEGISCH MEERJARENPLAN 2023-2027

- De GBIF 20 jaar review heeft de basis gelegd voor het nieuwe strategische meerjarenplan 2023-2027  
[\[https://doi.org/10.35035/doc-0kkq-0t82\]](https://doi.org/10.35035/doc-0kkq-0t82).
- Na de review is **GBIF's visie** geherformuleerd naar:

**Een wereld waarin de best mogelijk biodiversiteitsdata de basis vormt voor onderzoek, beleid en besluiten.**

- Waaraan inhoud gegeven wordt via **GBIF's missie**:

**Het mobiliseren van data, vaardigheden en technologieën die nodig zijn om uitgebreide informatie over biodiversiteit vrij beschikbaar te maken voor wetenschap en beleid op het gebied van duurzame ontwikkeling en het voorkomen van biodiversiteitsverlies.**

# GBIF STRATEGISCH MEERJARENPLAN 2023-2027

Daaraan gekoppeld zijn GBIF's waarden:

- **Vertrouwen** en **transparantie**
- **Samenwerking** en **collectief voordeel**
- **Diversiteit** en **inclusiviteit**
- **Innovatie**
- **Integriteit**

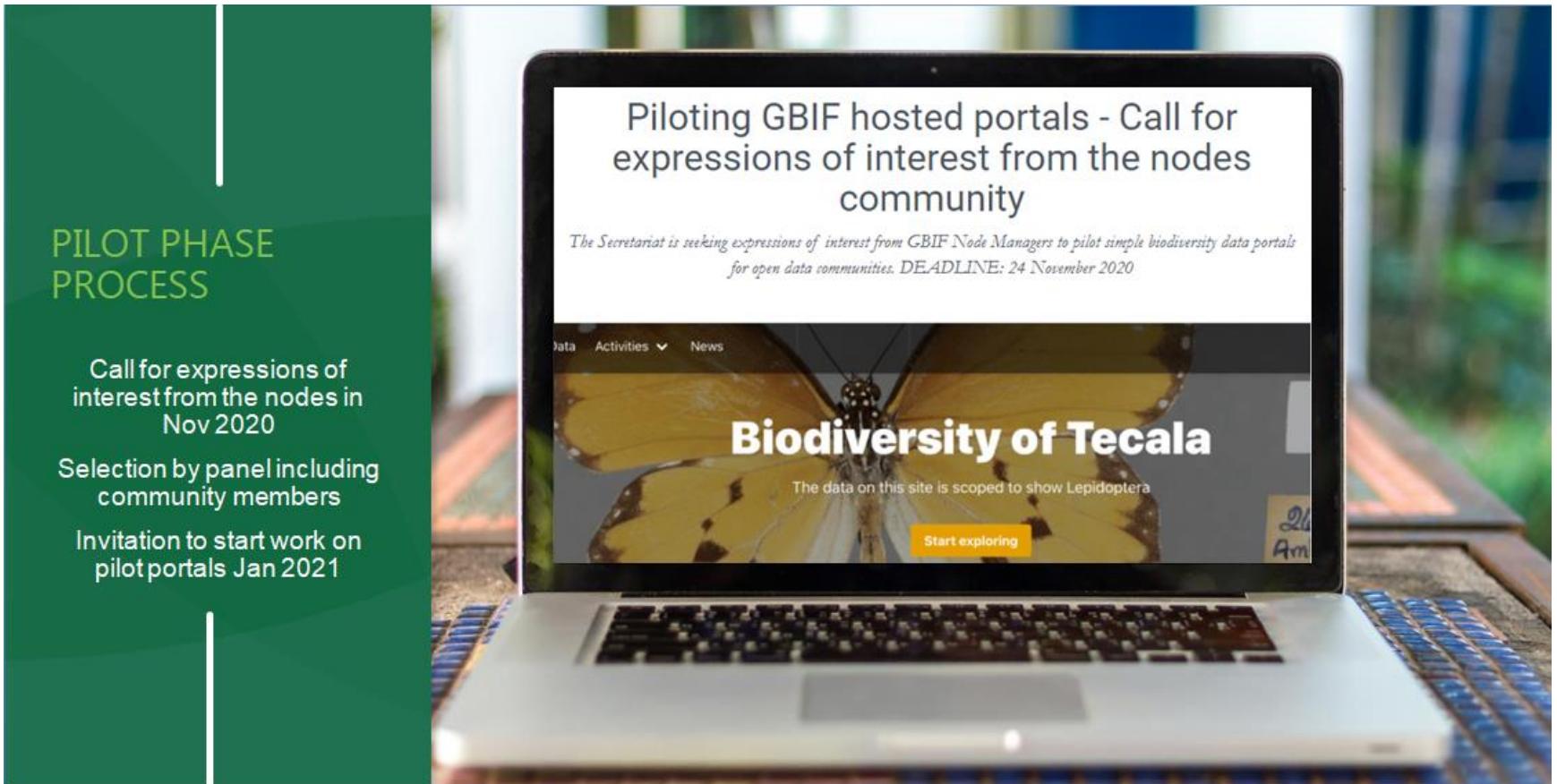
*GBIF erkent dat biodiversiteitsdata gecompliceerder is dan alleen het voorkomen op een plaats in de tijd, organismen interacteren, co-existeren, bewegen en evolueren. Daarom is een **rijker data model** nodig dat gevarieerdere data types ondersteunt.*

# GBIF STRATEGISCH MEERJARENPLAN 2023-2027

Vier strategische prioriteiten:

1. Building the **evidence to** advance scientific research and understanding of global biodiversity (5 obj.)
2. Supporting **policy responses and knowledge transfer that** address urgent societal challenges around planetary change (5 obj.)
3. Enabling the **network to** meet future needs and challenges (6 obj.)
4. Driving **innovation to** advance biodiversity-related knowledge (5 obj.)

# GBIF HOSTED PORTALS



<https://www.gbif.org/article/T3jBo3MS19P1xnCG2zQUz/piloting-gbif-hosted-portals-call-for-expressions-of-interest-from-the-nodes-community>

# GBIF HOSTED PORTALS

- In 2021 is GBIF gestart met de ‘Hosted Portals’ pilot [<https://dev.gbif.org/hosted-portals.html>]
- 8 nationale, 3 regionale en 6 thematische ‘hosted portals’

NEWS | 21 OCTOBER 2021

## First five hosted portals emerge from GBIF pilot programme

*Simple, customizable websites lower the technical thresholds for display of and access to relevant segments of GBIF-mediated biodiversity data at regional, national, institutional and thematic levels*



Coastal wattle (*Acacia cyclops*), South Australia—just one of the nearly 23,000 species of Fabaceae featured in the Legume Data Portal. Photo 2019 Mike Burrell via iNaturalist Research-grade Observations, licensed under CC BY-NC 4.0.

<https://www.gbif.org/news/6RG9WSU3knIxyhcDUBQTJY/first-five-hosted-portals-emerge-from-gbif-pilot-programme>

# GBIF HOSTED PORTALS

GBIF.us

About Data FAQ News Literature

## Species observations for the United States and Territories

Start exploring

About



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

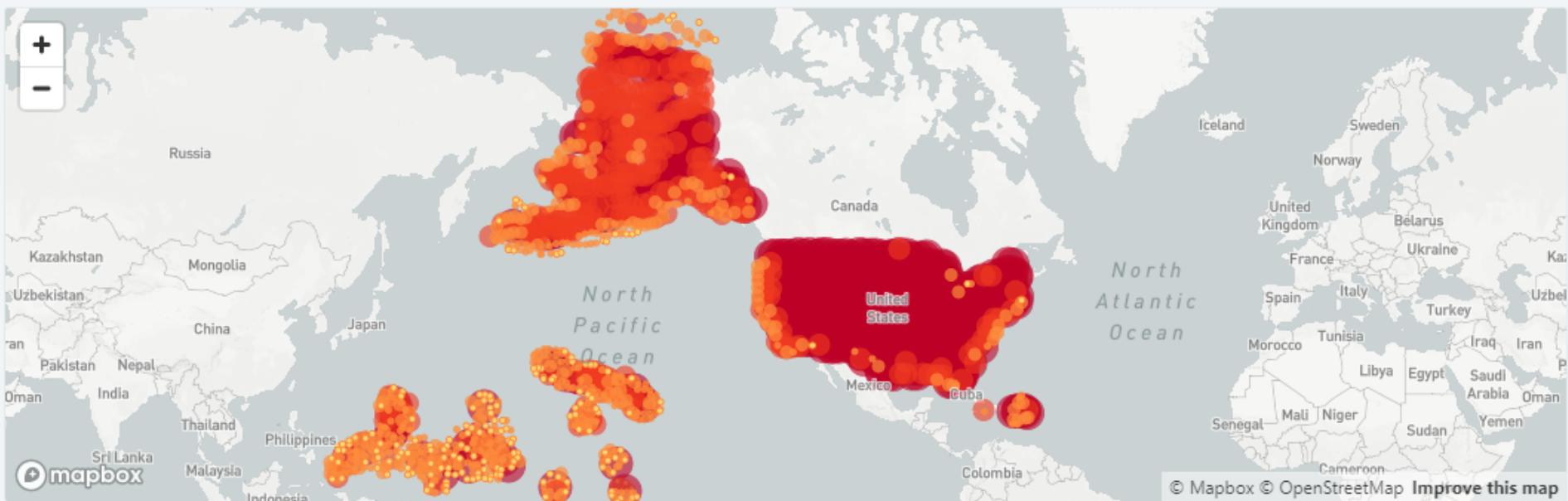
# GBIF HOSTED PORTALS

**GBIF.us** About Data FAQ News Literature

Table Gallery **Map** Download

[Scientific name](#) [Occurrence status](#) [Administrative area](#) [Year](#) [Issues and flags](#) [Dataset](#) [more](#)

779,212,967 results with coordinates



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

# GBIF HOSTED PORTALS

  Legume Data Portal



# Legume Data Portal

Learn and discover data about the biology, diversity and evolution of this fascinating family of flowering plants

[Explore Occurrence Data](#)

[Explore Taxonomy](#)

[About](#)

22,347,845

Occurrences

22,360

Species

772

Genera

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

# GBIF HOSTED PORTALS



Accepted Species List and Synonyms

Browse

Advanced search

SUBFAMILIES

Cercidoideae

Detarioideae

Duparquetioideae

Dialioideae

Caesalpinoideae

Papilionoideae

You can download the latest version of the WCVP-Fabaceae list in .txt (with DarwinCore fields) from the [Catalogue of Life ChecklistBank](#) and in Word format [here](#).

Legume Phylogeny Working Group (LPWG), Andrella, G. C., Atahuachi Burgos, M., Bagnatori Sartori, Å. L., Balan, A., Bandyopadhyay, S., Barbosa Pinto, R., Barrett, R. L., Boatwright, J. S., Broich, S. L., Brullo, S., Bruneau, A., Cardinal-McTeague, W., Cardoso, D., Castro Silva, I. C., Cervantes, A., Choo, L. M., Cobra e Monteiro, T., Compton, J., et al. (2021). *The World Checklist of Vascular Plants (WCVP): Fabaceae* (R. Govaerts, Ed.). The Royal Botanic Gardens, Kew., [http://sftp.kew.org/pub/data\\_collaborations/Fabaceae/DwCA/](http://sftp.kew.org/pub/data_collaborations/Fabaceae/DwCA/)  
- accessed through [Catalogue of Life Checklistbank](#)

Find taxon



▼ family: **Fabaceae**

- ▶ genus: *Abarema* Pittier
- ▶ genus: *Abrus* Adans.
- ▶ genus: *Acacia* Mill.
- ▶ genus: *Acaciella* Britton & Rose
- ▶ genus: *Acmispon* Raf.
- ▶ genus: *Acosmium* Schott
- ▶ genus: *Acrocarpus* Wight ex Arn.
- ▶ genus: *Adenanthera* L.
- ▶ genus: *Adenocarpus* DC.
- ▶ genus: *Adenodolichos* Harms
- ▶ genus: *Adenolobus* (Harv. ex Benth.) Torre & Hillc.

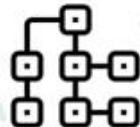
<https://www.legumedata.org/taxonomy/taxon/614366>

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

# Pacific Biodiversity Information Facility

Pacific Biodiversity Information Facility presents all of the Pacific biodiversity data available on GBIF.

Get Data



<https://pbif.sprep.org/>

# GBIF HOSTED PORTALS



Table Datasets Gallery Map Download

Country Scientific name Dataset Year Occurrence status Establishment means Text search Hosting organization more

2,387 results

EOD – eBird Observation Dataset	2,133,449
NMNH Extant Specimen Records (USNM, US)	354,206
NOAA Pacific Islands Fisheries Science Center, Ecosystem Sciences Division, National Coral Reef Monitoring Program: Stratified random surveys (StRS) of reef fish in the U.S. Pacific Islands	311,531
anchialine metagenome Raw sequence reads	274,350
Bernice P. Bishop Museum	233,367
Naturalis Biodiversity Center (NL) - Botany	221,661
The vascular plants collection (P) at the Herbarium of the Muséum national d'Histoire Naturelle (MNHN - Paris)	166,567
iNaturalist Research-grade Observations	159,743

<https://pbif.sprep.org/>

# GBIF HOSTED PORTALS

X



GBIF Contacts/Directory

Other GBIF Resources

Invasive Species Management in the Pacific

Pacific Environment Portal (PEP)

Pacific Invasive Learning Network (PILN)

Pacific Invasive Partnership (PIP)

Pacific Island Protected Area Portal (PIPAP)

Secretariat of the Pacific Regional Environment Programme (SPREP)

How to

Downloads

Battlers Sharing Data-English

Battlers Sharing Data-French

News

English

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Français

Niuean

Marshallese

Solomon Islands

Gagana Samoa

Tokelaun

Tongan

Tuvaluan

<https://pbif.sprep.org/>

# GBIF HOSTED PORTALS



# BIODIVERSIDAD PARA TODOS

crear · compartir · transformar

CONSULTAR



17,380,266

Registros biológicos



1,867

Conjuntos de datos



5348

Fichas de especies



321

Listas de chequeo

<https://biodiversidad.co/>

NLBIF relatie dag 2022 – 8 maart 2022 – Niels Raes



# GBIF HOSTED PORTALS



CATÁLOGO DE  
LA BIODIVERSIDAD



Buscar



EXPLORAR

EXPLORA EL CATÁLOGO

*Hyloscirtus denticulentus*, Esteban Alzate CC by-nc-nd

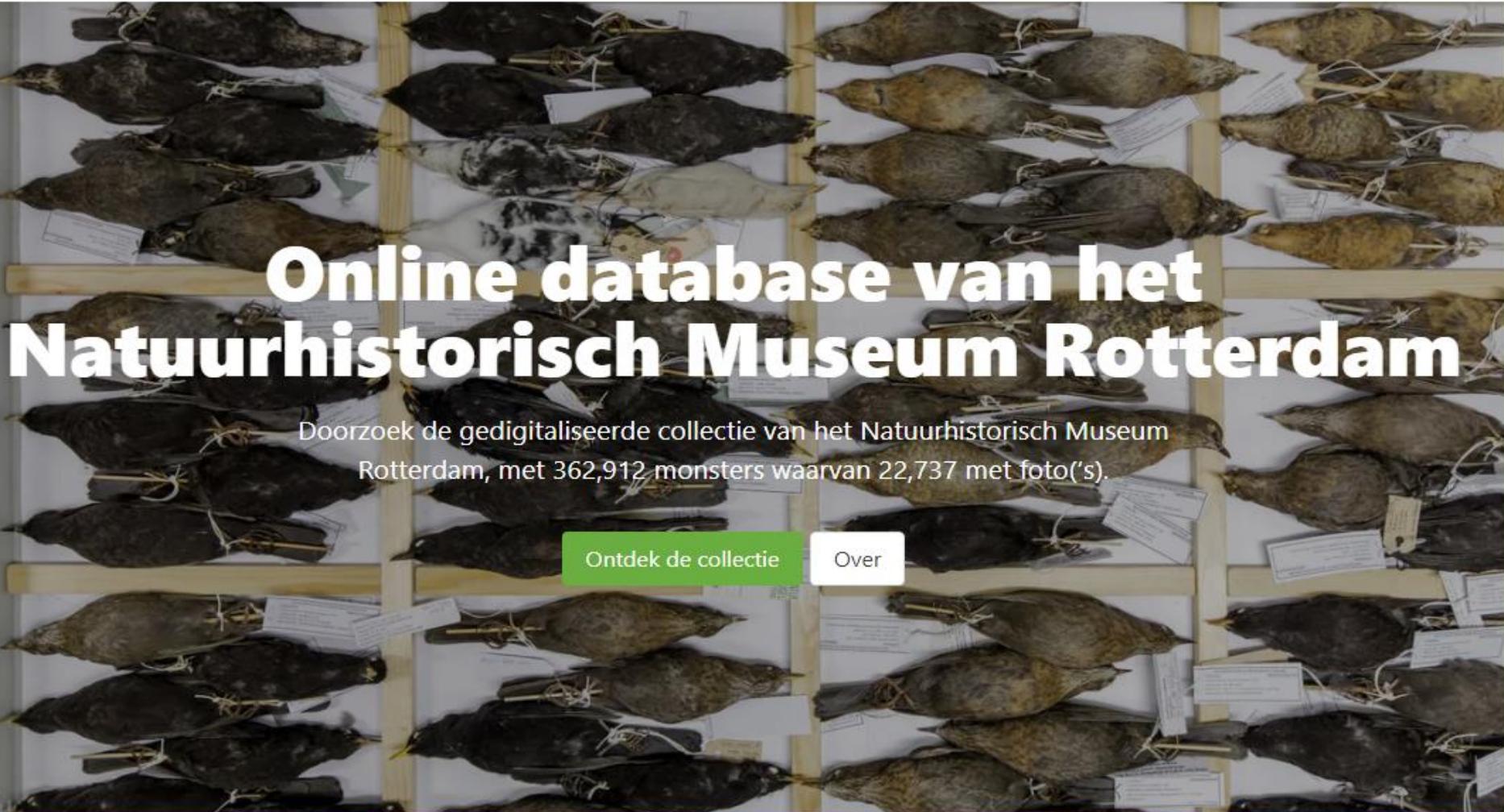


Explora a través de grupos biológicos



<https://biodiversidad.co/>

# GBIF HOSTED PORTALS



## Online database van het Natuurhistorisch Museum Rotterdam

Doorzoek de gedigitaliseerde collectie van het Natuurhistorisch Museum Rotterdam, met 362,912 monsters waarvan 22,737 met foto(s).

Ontdek de collectie

Over

<https://specimens.hetnatuurhistorisch.nl/>



Hartelijk dank voor  
uw aandacht  
Vragen ?