Gossypium hirsutum, observed in China. Photo 2018 thelittleman via iNaturalist (CC BY-NC 4.0). https://www.gbif.org/occurrence/1836698218

GBIF Global Biodiversity Information Facility

GBIF relevance for science and policy

Dr. Joe Miller | Executive Secretary

Impact and Action: A Virtual Science-Policy Symposium
9 December 2021

BY THE NUMBERS *9 Dec 2020* 9 DECEMBER 2021

Species occurrence records

1,904,436,839

Datasets

64,002

Country Participants **62**

Organizational Participants **41**

Data-publishing institutions

1,769

Peer-review papers using data

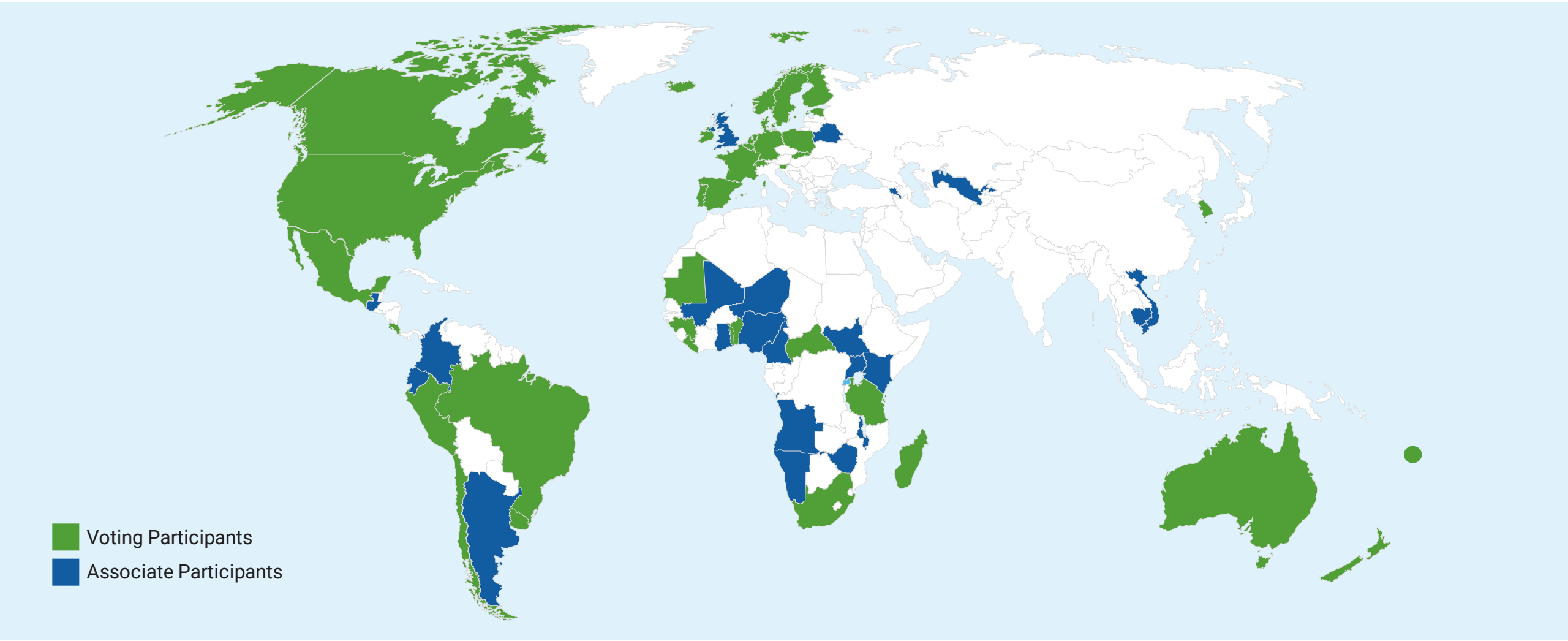
6,498

Avg records downloaded per month (2021)

86.6 billion

GBIF

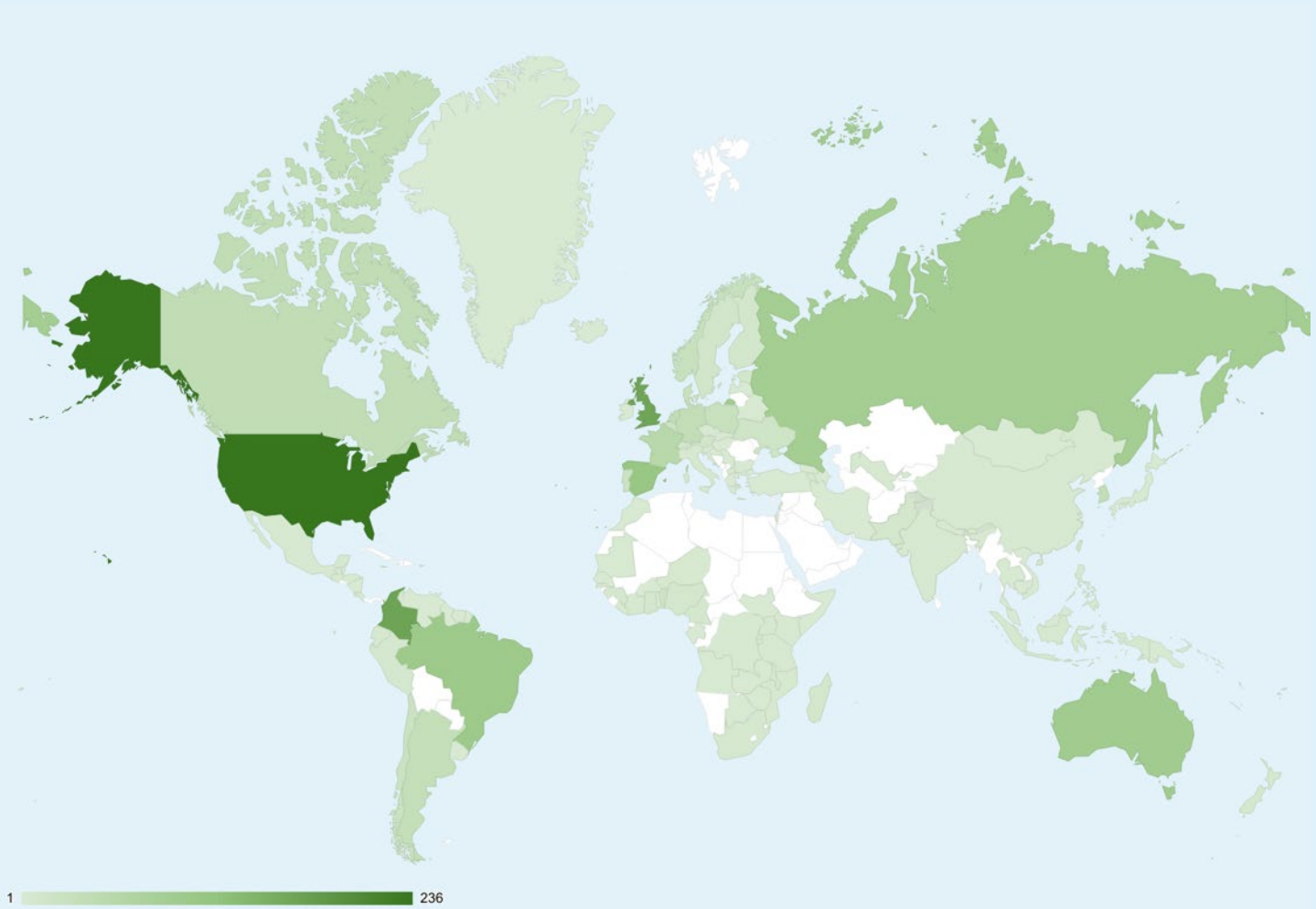
GBIF PARTICIPANT COUNTRIES 9 Dec 2021



https://www.gbif.org/the-gbif-network

GBIF

GBIF NETWORK OF DATA PUBLISHING INSTITUTIONS Year-to-date, 30 Sept 2021



125 countries with institutions sharing data through GBIF

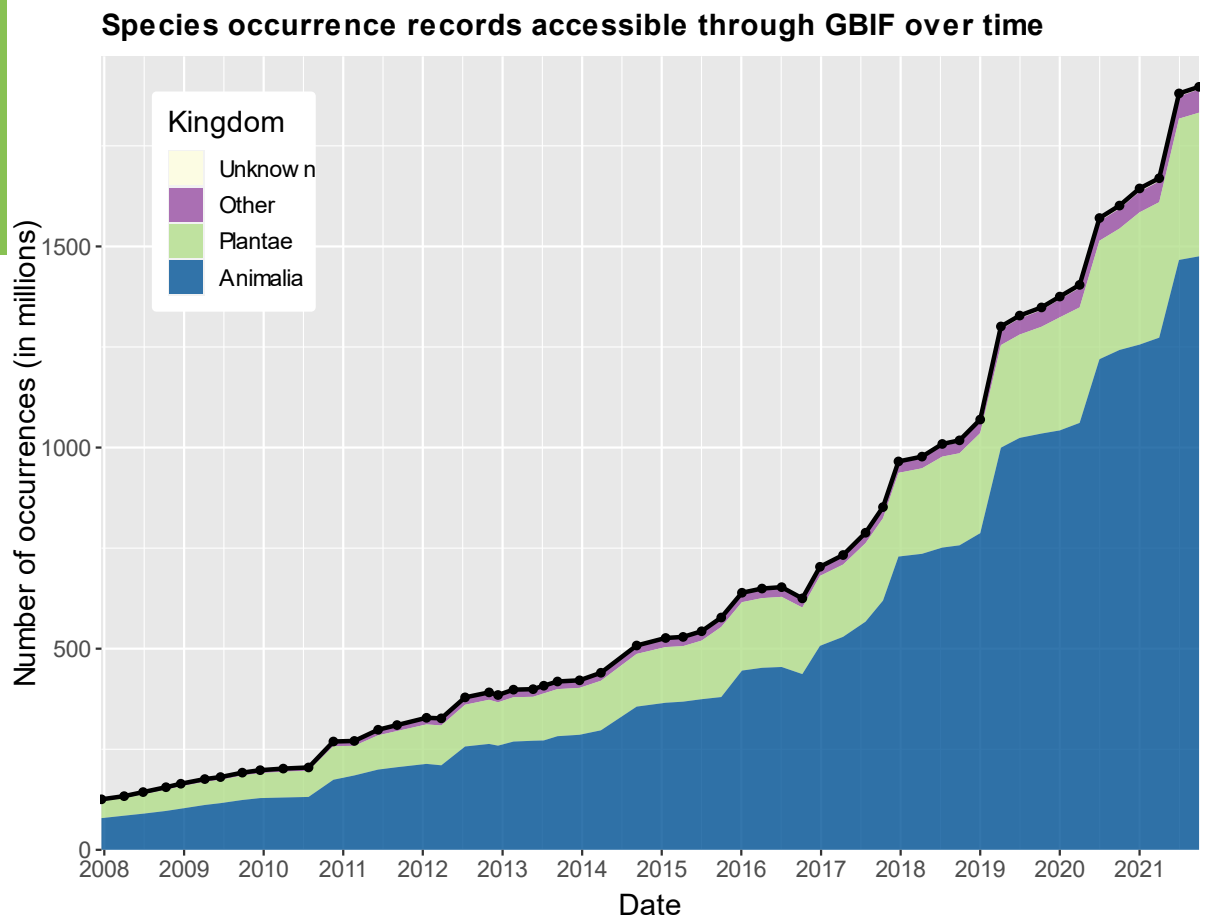
Top 10 countries: number of data publishers		
1	United States	236
2	Colombia	166
3	United Kingdom	164
4	Spain	109
5	Brazil	100
6	Australia	93
7	Russian Federation	89
8	France	55
9	Canada	41
10	Germany	38
10	Netherlands	38

https://www.gbif.org/publisher/search

GBIF

GROWTH OF DATA FROM THE GBIF NETWORK

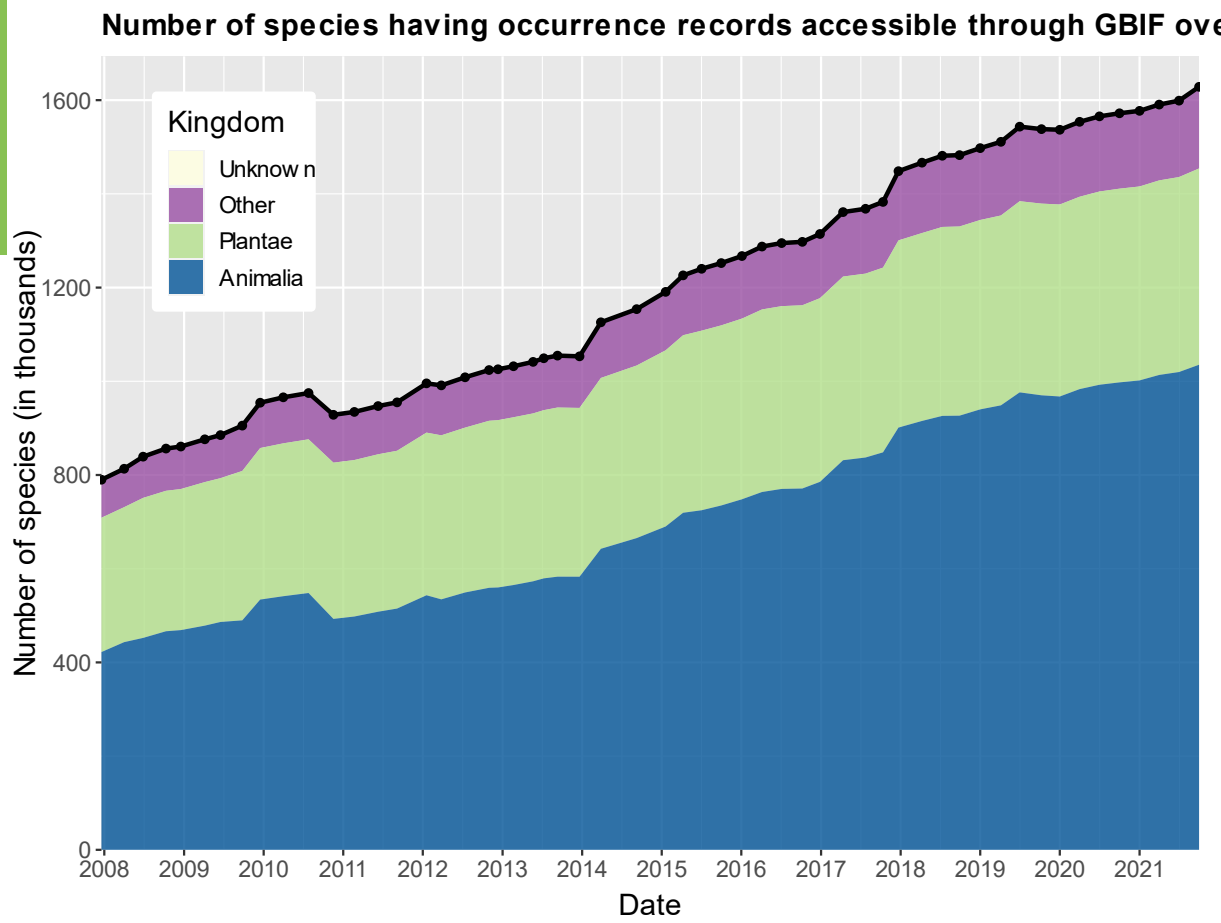
- 1st billion species occurrence records 2008-2018
- 2nd billion s species occurrence records 2018-2022?



https://www.gbif.org/analytics/global

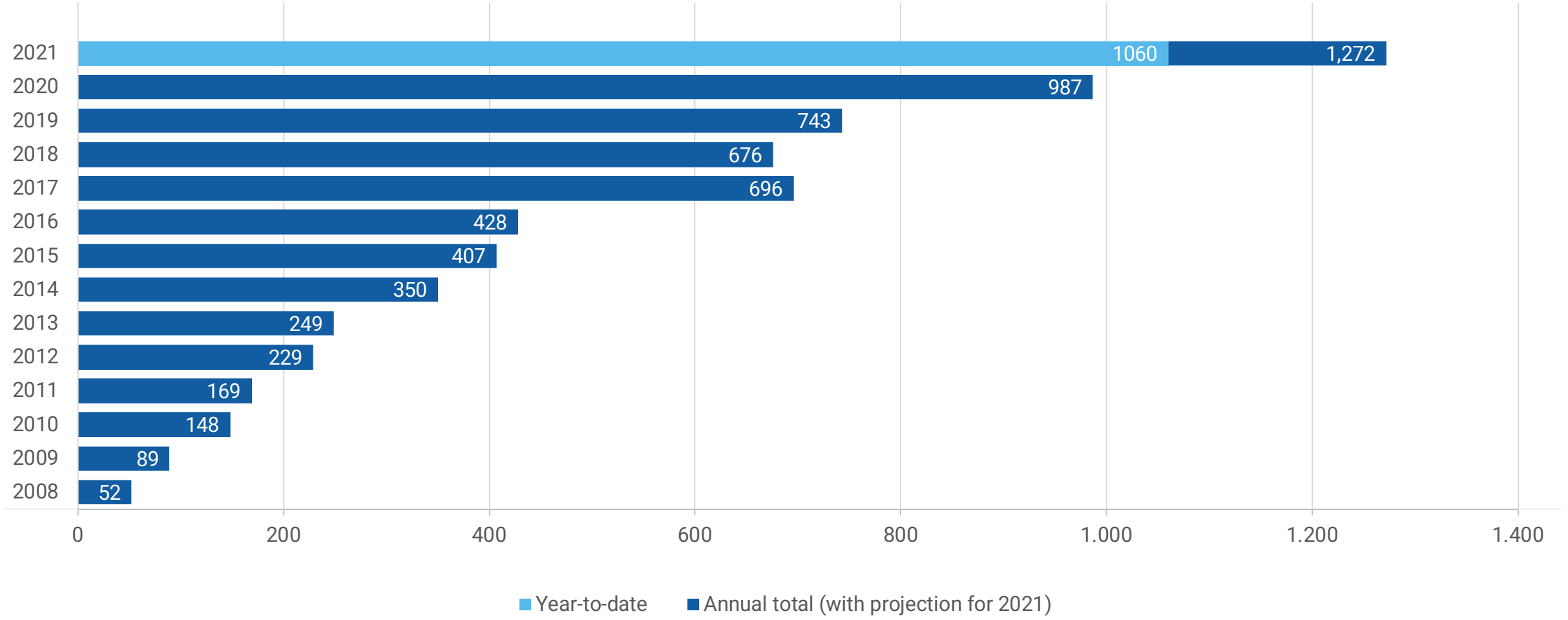
GROWTH OF DATA FROM THE GBIF NETWORK

- 1st billion species occurrence records: 2008-2018
- 2nd billion species occurrence records: 2018-2022?
- Species coverage doubled: 2008-2021



https://www.gbif.org/analytics/global

PEER-REVIEWED PUBLICATIONS USING GBIF-MEDIATED DATA 31 Oct 2021



https://www.gbif.org/resource/search?contentType=literature&literatureType=journal&relevance=GBIF_USED&peerReview=true

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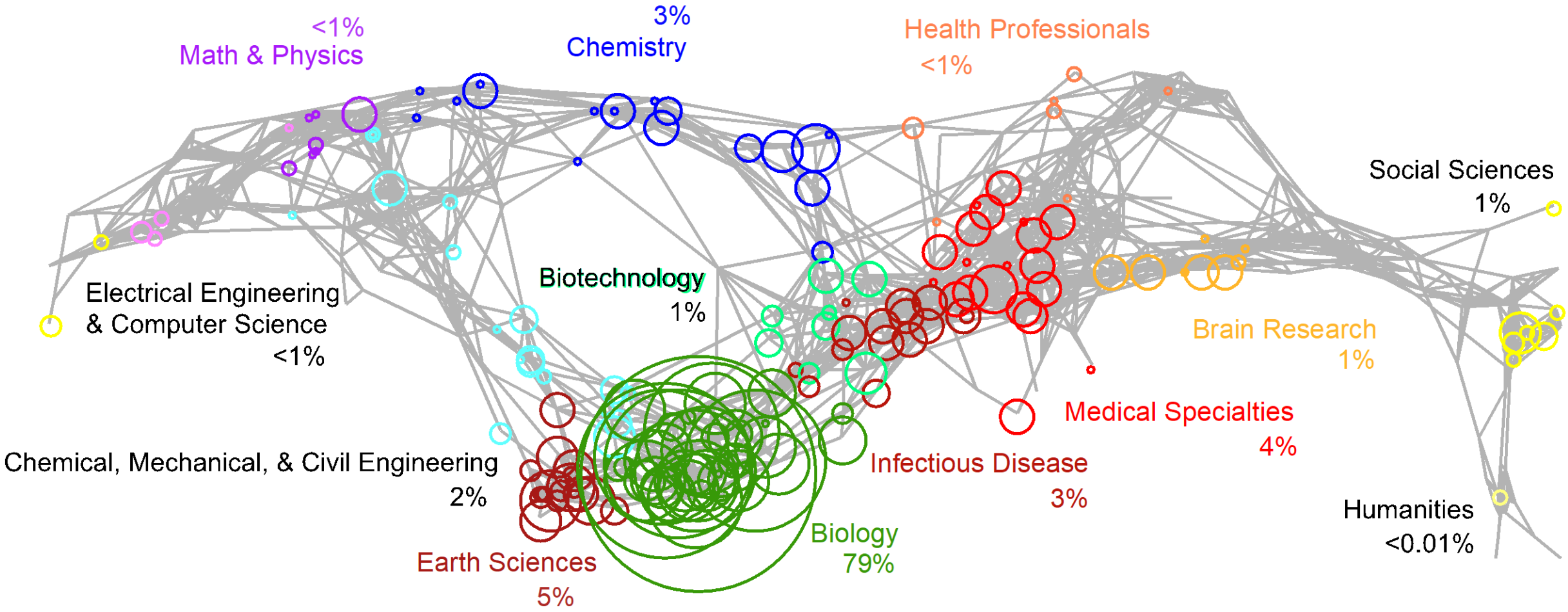
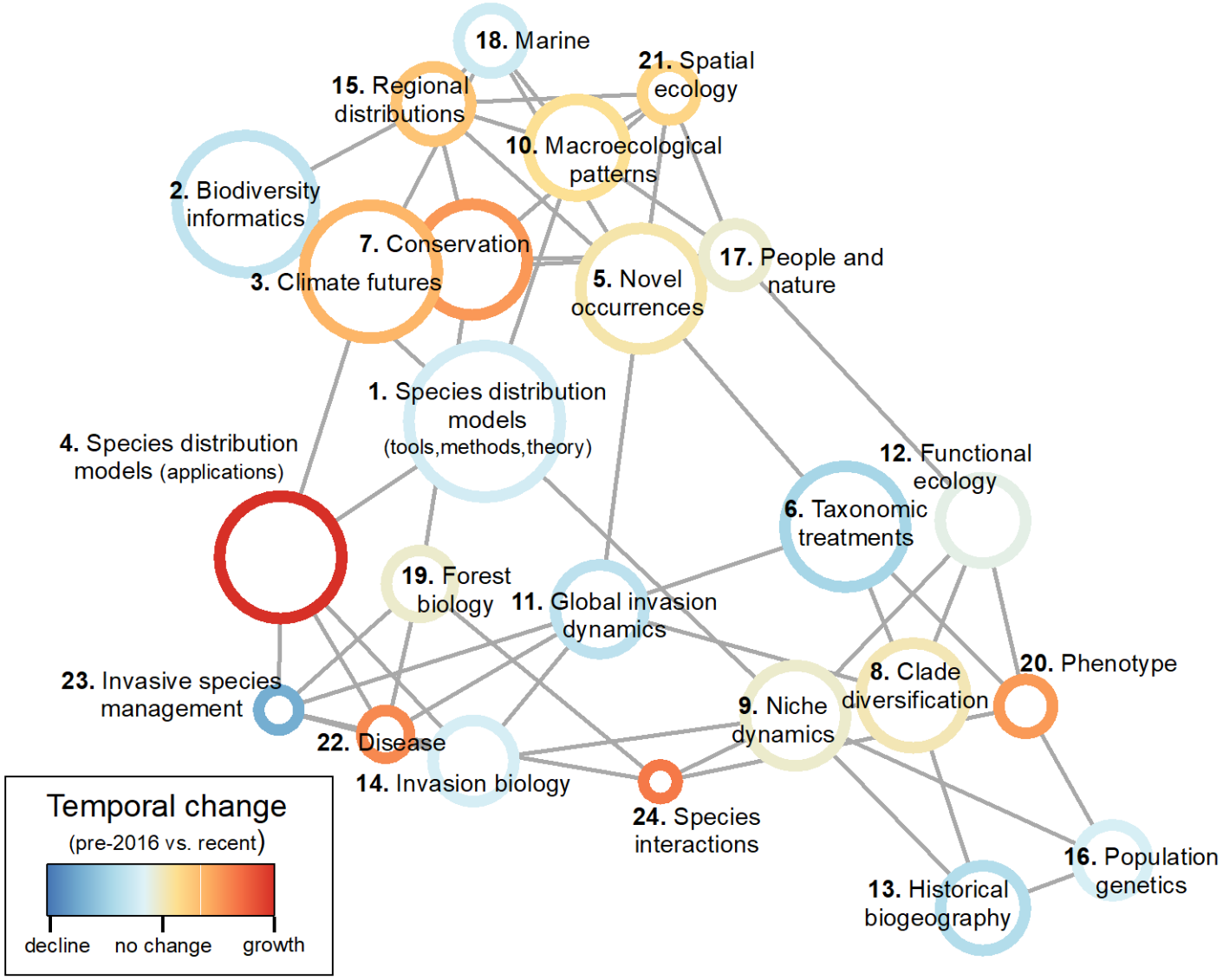
MAP OF GBIF-ENABLED SCIENCE



Heberling JM et al. D (2021) Data integration enables global biodiversity synthesis. PNAS 118(6): e2018093118. https://doi.org/10.1073/pnas.2018093118

TOPIC CONNECTIONS AMONG STUDIES USING GBIF



Heberling JM et al. D (2021) Data integration enables global biodiversity synthesis. PNAS 118(6): e2018093118. https://doi.org/10.1073/pnas.2018093118

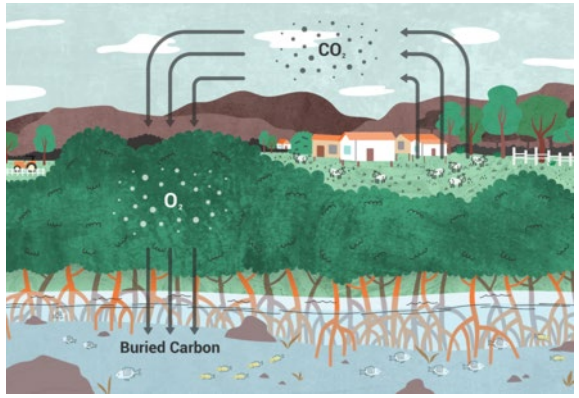
RESEARCH USES OF DATA FROM THE GBIF NETWORKSUPPORTING RESEARCH AND SUSTAINABLE DEVELOPMENT

Conservation

- Protected areas
- Key biodiversity areas
- Threatened species
- Monitoring and targeting invasive species

Food security

- Crop wild relatives
- *In situ* and *ex situ* conservation of genetic diversity
- Pollination by wild species



Climate change

- Modelling impacts on species ranges
- Adaptation strategies
- Mitigation benefits, risks

Human health

- Tracking disease risk based on shifting distribution of vectors, hosts and reservoirs
- Medicinal plants
- Hazards e.g. snakebite

POLICY APPLICATIONS OF GBIF-MEDIATED DATASUPPORTING RESEARCH AND SUSTAINABLE DEVELOPMENT

Biodiversity indicators

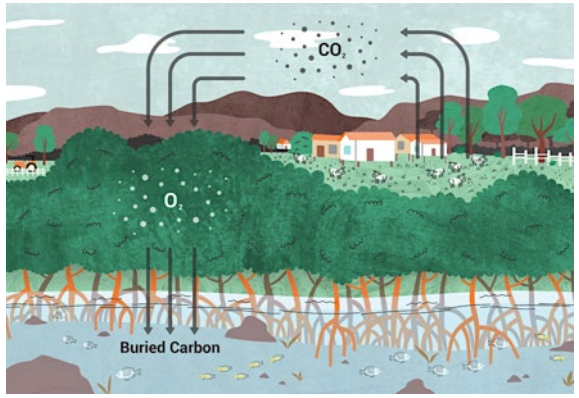
Critical role in generating information resources that guide the decision-making processes

- Aichi 19, 5, 9 & 11-13
- SDGs 14, 15 et al.
- Post-2020 GBF

Underlying research

Increased data supports 1st global assessment of climate impacts on insects—and then supports IPCC 2018 *Special Report on 1.5°C*

gbif.org/data-use/51171KRV0EhwmHubpfDs3h



Knowledge generation

Support **IUCN** knowledge products

- Red List of Threatened Species
- Key Biodiversity Areas
- GRIIS

Targeted mobilization

Campaigns to fill gaps and improve coverage:

- Geographic
- Taxonomic
- Thematic

NEW STRATEGIC FRAMEWORK 2023-2027

A world in which the best possible biodiversity data underpins research, policy and decisions

Building the evidence to advance **scientific research** and understanding of global biodiversity

Supporting **policy responses** and knowledge transfer that address urgent societal challenges around planetary change

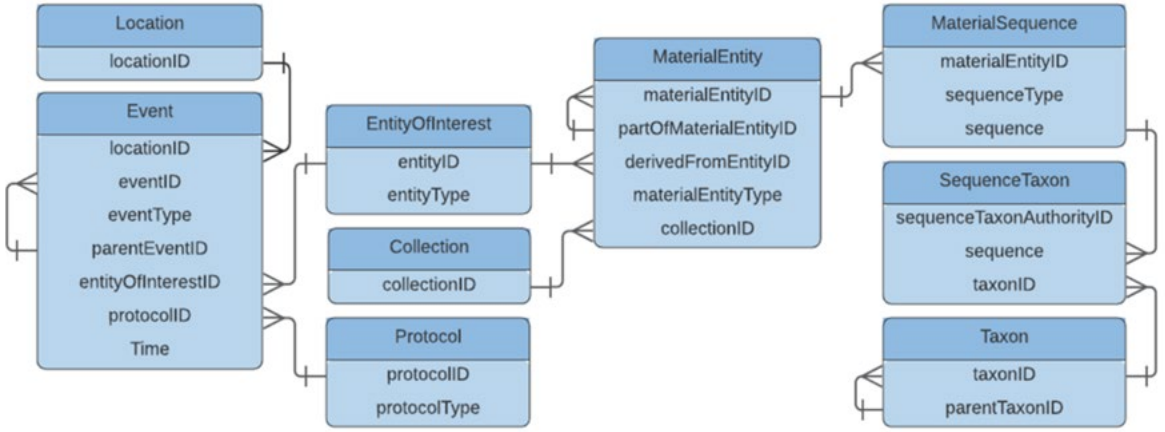
Enabling the **network** to meet future needs and challenges

Driving **innovation** to advance biodiversity-related knowledge

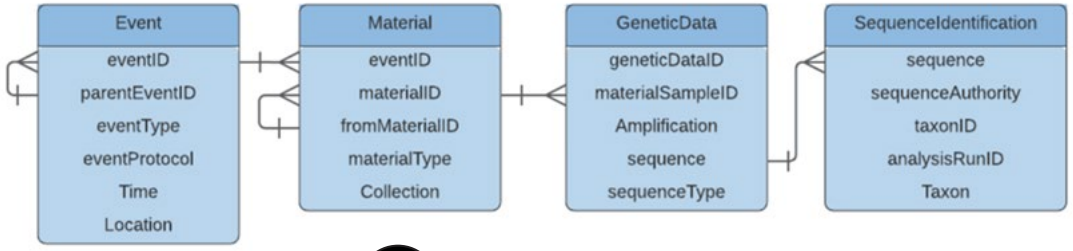
https://doi.org/10.35035/doc-0kkq-0t82

DIVERSIFYING THE GBIF DATA MODEL

> *GBIF recognizes that biodiversity data is more complicated than 'just' the occurrence of species in time and space: organisms interact, co-occur, move and evolve.*
>
> — GBIF Strategic Framework



2 ***Conceptual*** **model**



3 ***Publication*** **model**

See GB28 introduction to this work @ https://tinyurl.com/gb28-model

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CAPACITY ENHANCEMENT: THE HUMAN NETWORK

BID *is funded by the European Union*

- Reaffirming commitment to building resilient global and regional communities of practice
- Securing supplementary funding to build local skills in data sharing and data use
- Recognizing contributions of network members serving as volunteer mentors, workshop trainers, translators
- Establishing sustainable networks and data flows with addition of regional and thematic support

Data use for decision-making workshop, Cape Town. Photo 2018
Maheva Bagard Laursen | GBIF Secretariat https://flic.kr/p/25XDxH1

GBIF

THANK YOU

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