

GBIF

Global Biodiversity Information Facility

Dmitry Schigel, Tim Hirsch

Arctic data and Global Biodiversity Information Facility

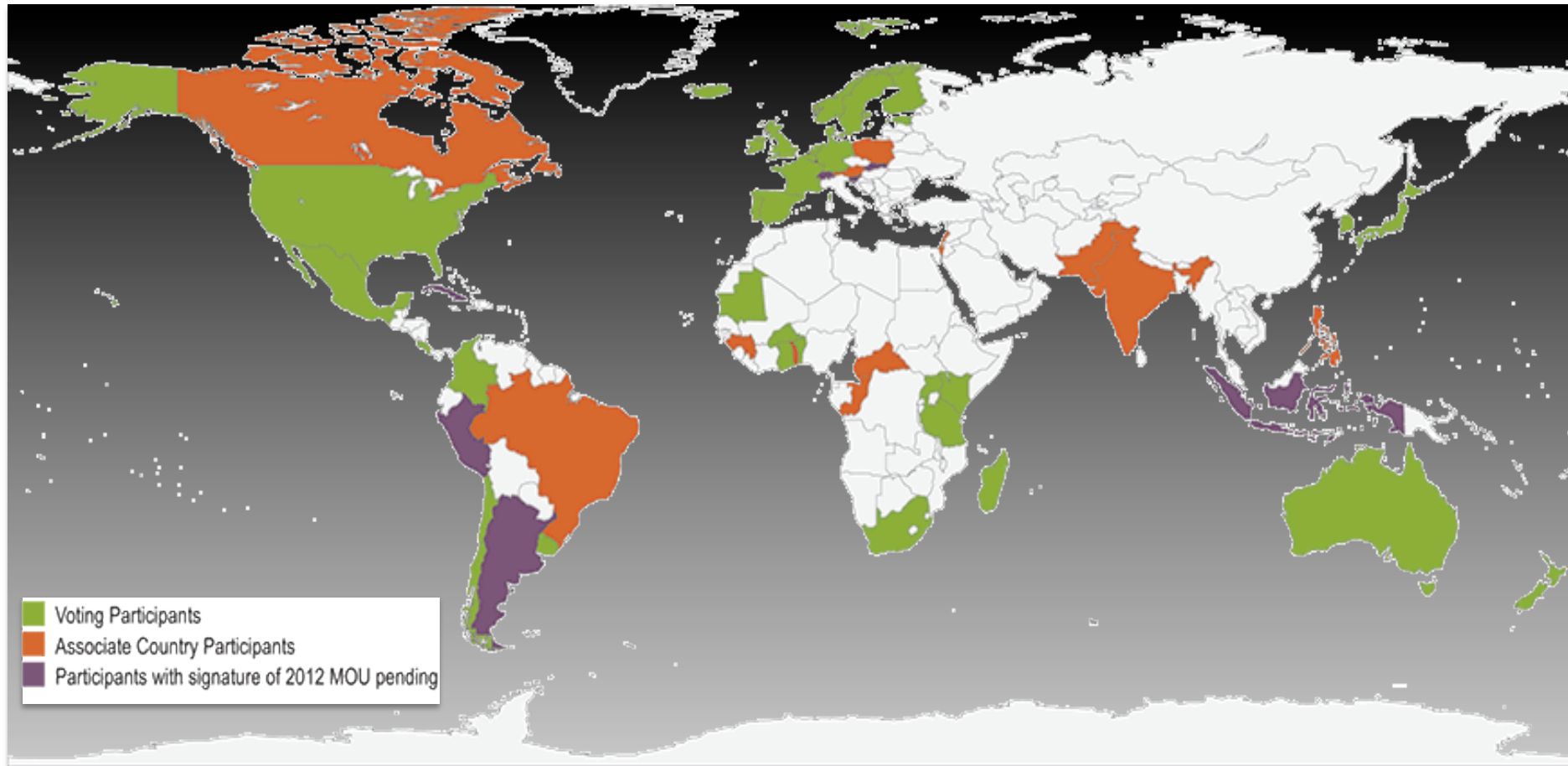
WHAT IS GBIF?

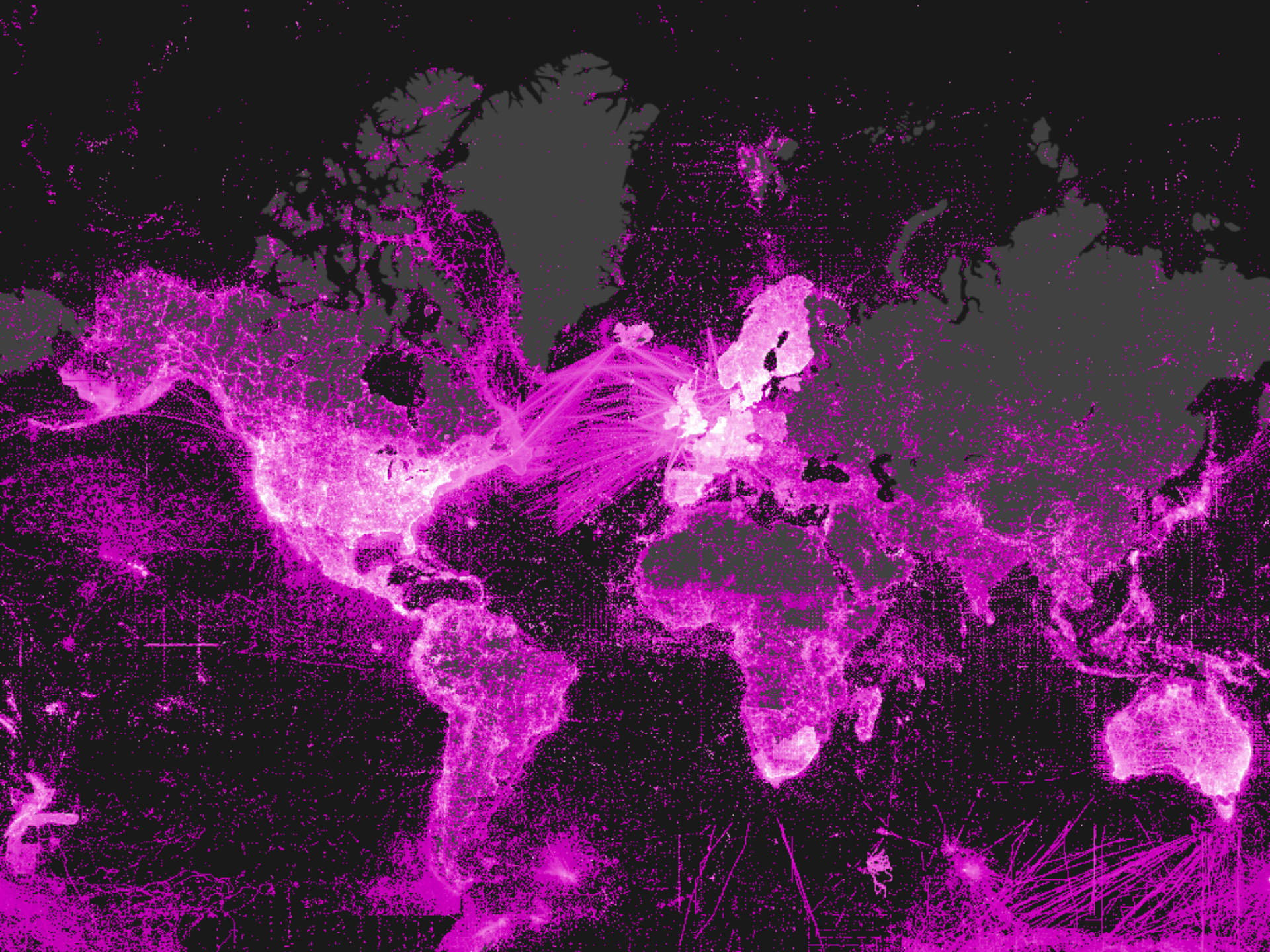
- Intergovernmental collaboration founded in 2001 on the recommendation of OECD science panel
- Promotes and facilitates free and open access to biodiversity data via the internet
- Sustains a network that includes 52 participating countries & 40 organizations
- Secretariat based in Copenhagen operates global registry and GBIF.org

WHAT DOES GBIF DO?

- Promotes common standards and free tools for biodiversity data management and exchange
- Maintains global open access and web services to species data through GBIF.org
- Provides guidance on setting up national biodiversity information facilities and portals
- Supports and maintains collaborative network at global and regional levels

GBIF COUNTRY PARTICIPANTS





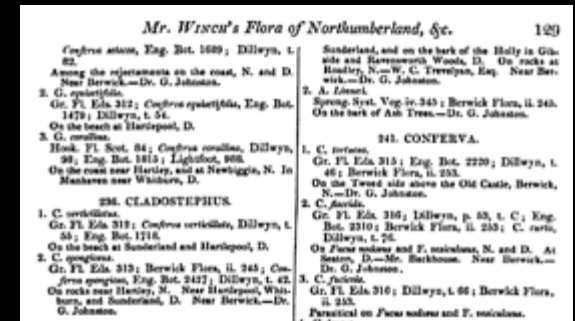
TYPES OF DATA SHARED THROUGH GBIF



Specimens from
museum and
herbarium
collections



Observations from
field surveys,
inventories and
citizen scientists



Records extracted
from literature

GBIF NATIONAL NODES

Finland

A GBIF Voting Participant from Europe
Names of countries, territories and islands are based on the ISO 3166-1 standard.

Summary

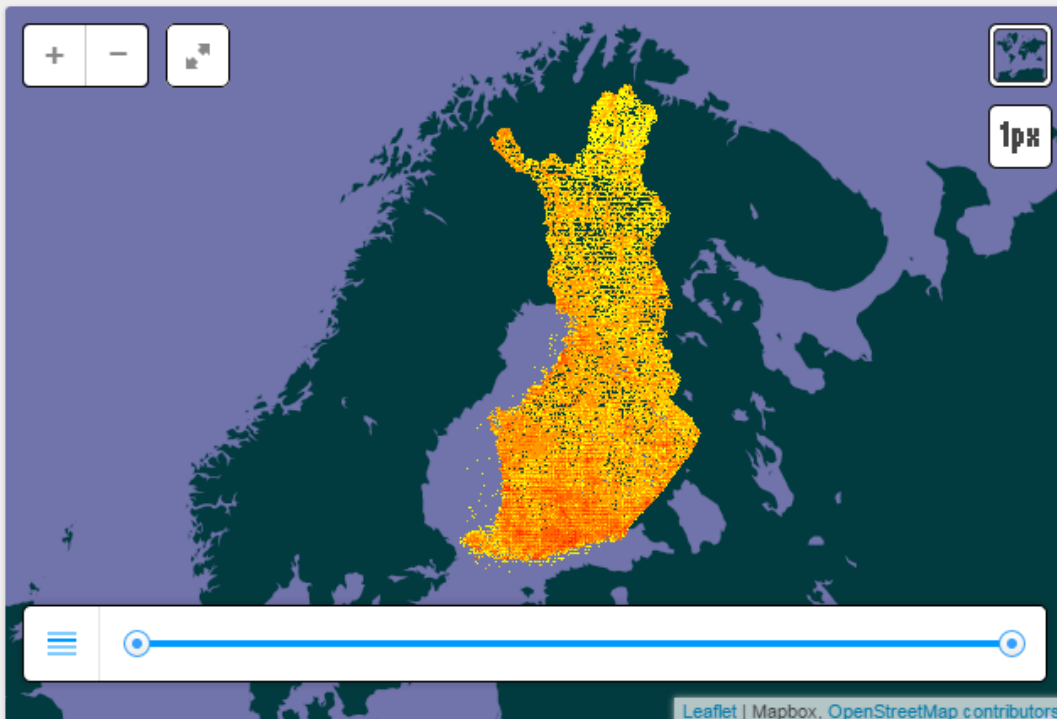
Data About

Data Publishing

Participation

News

Publications



Data about Finland

- 505 occurrence datasets with 16,935,426 records.
- No checklist datasets.
- No metadata-only datasets relevant to Finland.
- 32 countries contribute data about Finland.

DATA REPATRIATION

France

A GBIF Voting Country Participant from Europe

Names of countries, territories and islands are based on the **ISO 3166-1** standard.

Summary

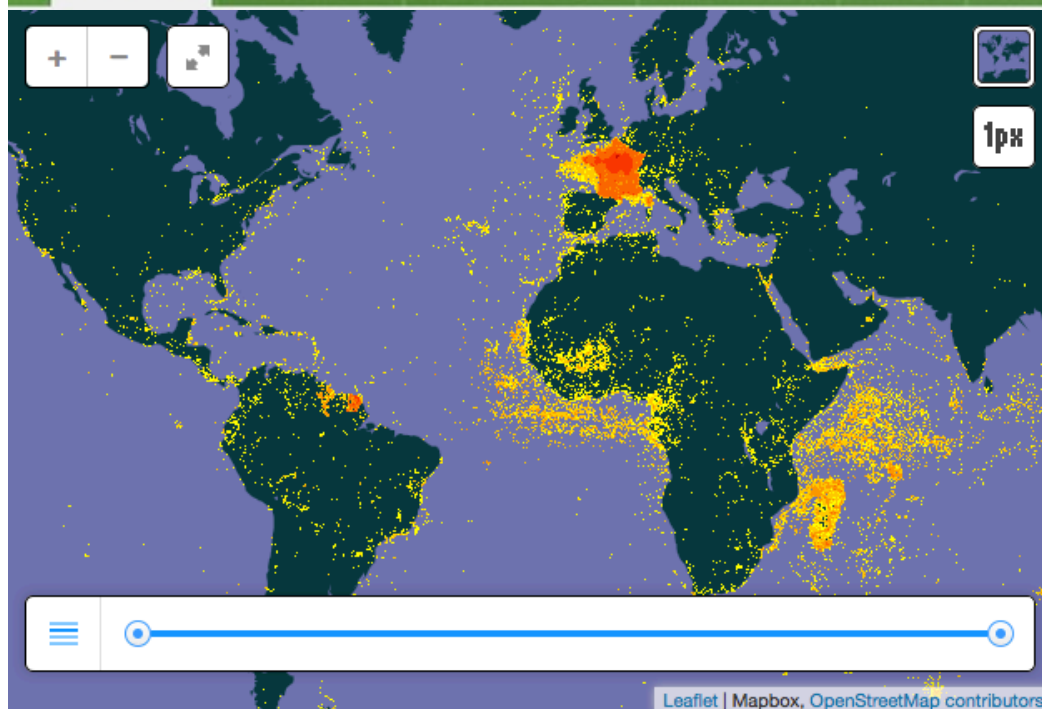
Data About

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News

Publications



Data from France

- 111 occurrence datasets with 16,495,767 records.
- 1 checklists with 0 records.
- 1 metadata-only datasets.
- France publishes data covering 245 countries, territories and islands.

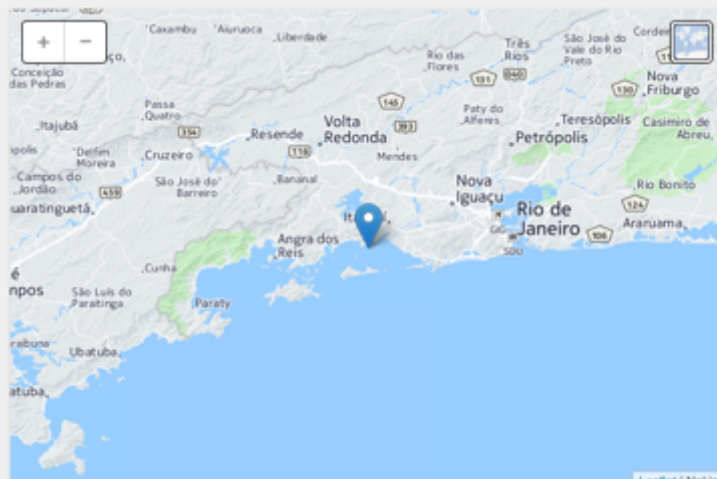
RICHER RECORD DETAILS

urn:lsid:IBC:BC:6

Machine Observation of *Sotalia guianensis* (P.-J. van Bénédén, 1864) recorded on Feb 6, 2013

from Projeto Abrace o Boto Cinza dataset

Information



Location

LOCALITY

Baia de Sepetiba, RJ -
Brazil

-43.86863, -22.97091



Sotalia guianensis

IMAGE HOME

<https://www.flickr.com/photos/126>

LICENSE

No license given

DESCRIPTION

Dorsal fin

Source details

DATA PUBLISHER

Instituto Boto Cinza

DATASET

Projeto Abrace o Boto Cinza

BASIS OF RECORD

Machine Observation

OCCURRENCE ID

urn:lsid:IBC:BC:6

GBIF ID

1024041788

LANGUAGE

english

Identification details According to GBIF Backbone Taxonomy

IDENTIFIED AS SPECIES

Sotalia guianensis (P.-J. van Bénédén, 1864)

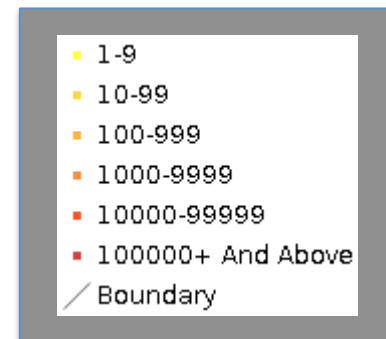
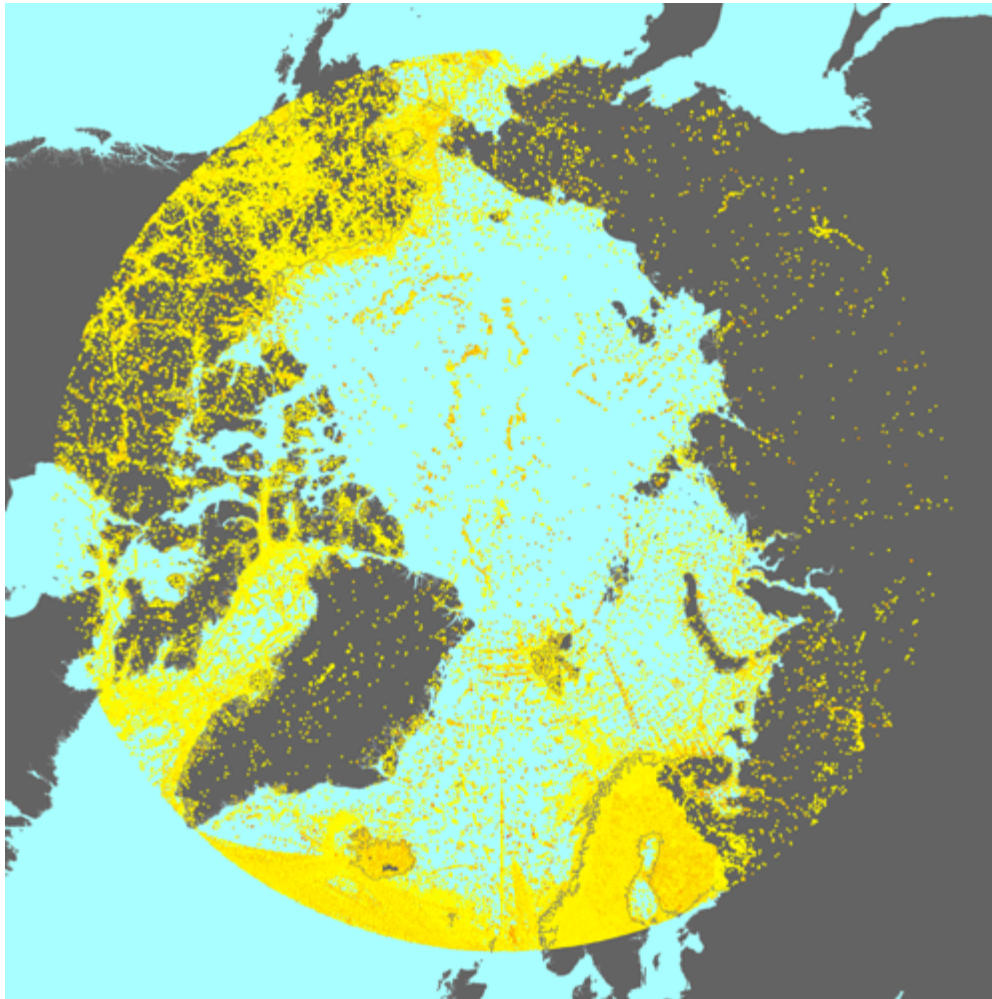
TAXONOMIC CLASSIFICATION

Animalia > Chordata > Mammalia > Cetacea > Delphinidae > Sotalia

INDIVIDUAL ID

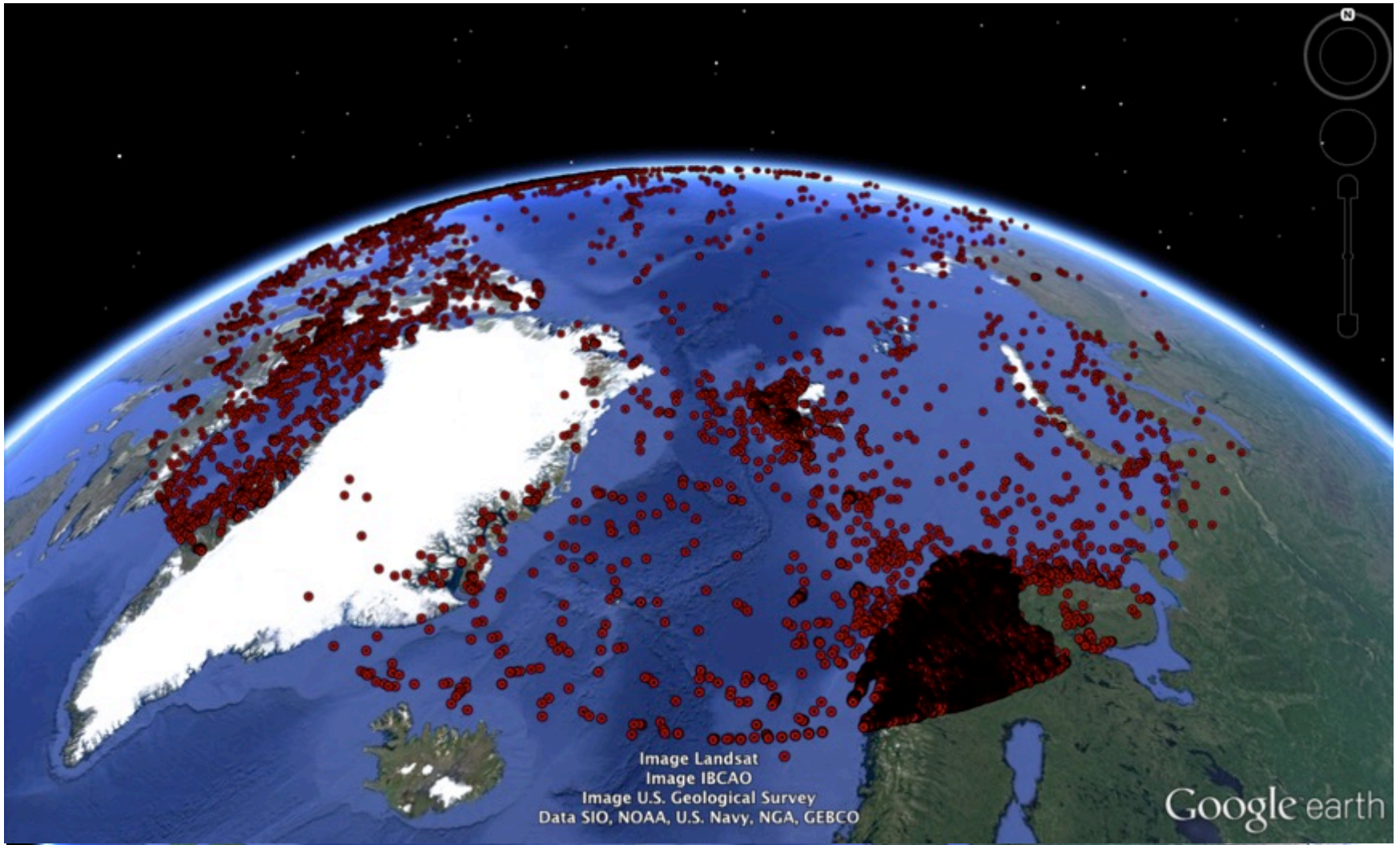
SEP148

GBIF AND ARCTIC DATA



Map by **Nabil Youdjou**, 2014
Antarctic Biodiversity Information System
(AntaBIF/AntaBIS) Project
at Royal Belgian Institute of Natural
Sciences(RBINS)

GBIF AND ARCTIC DATA



GBIF AND ABDS: DATA TYPES & COLLABORATION

Home Species Ecosystems Stressors Indices Networks

ABDS

Beta

The Arctic Biodiversity Data Service

About

CAFF <-> GBIF

Species

Ecosystems

Stressors

Read More

Read More

Read More

Enabling discovery and access to sample-based data



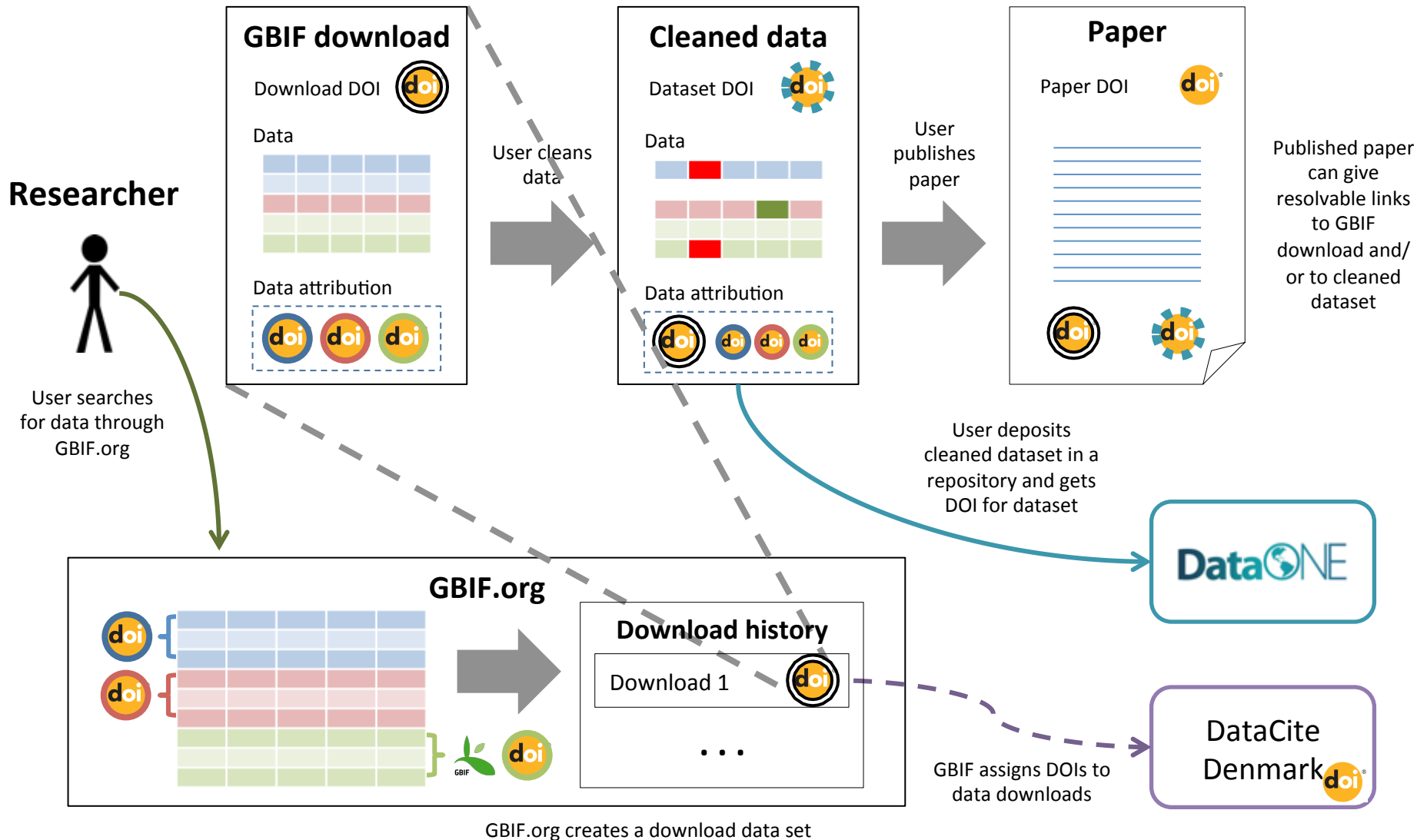
- Working with EU BON partners, GBIF is adapting its IPT (Integrated Publishing Toolkit) and Darwin Core Archives to enable the flow of sample-based data
- Modifications will support GEO BON's Essential Biodiversity Variables (EBVs)
- EBVs serve as intermediate layer between raw data and indicators (e.g., for CBD)
- Support detection of changes and trends in populations



Sample-based data

- *quantitative*
- *calibrated*
- *comparable*
- *collected using standard protocols*

GBIF AND REFERENCE DATASETS



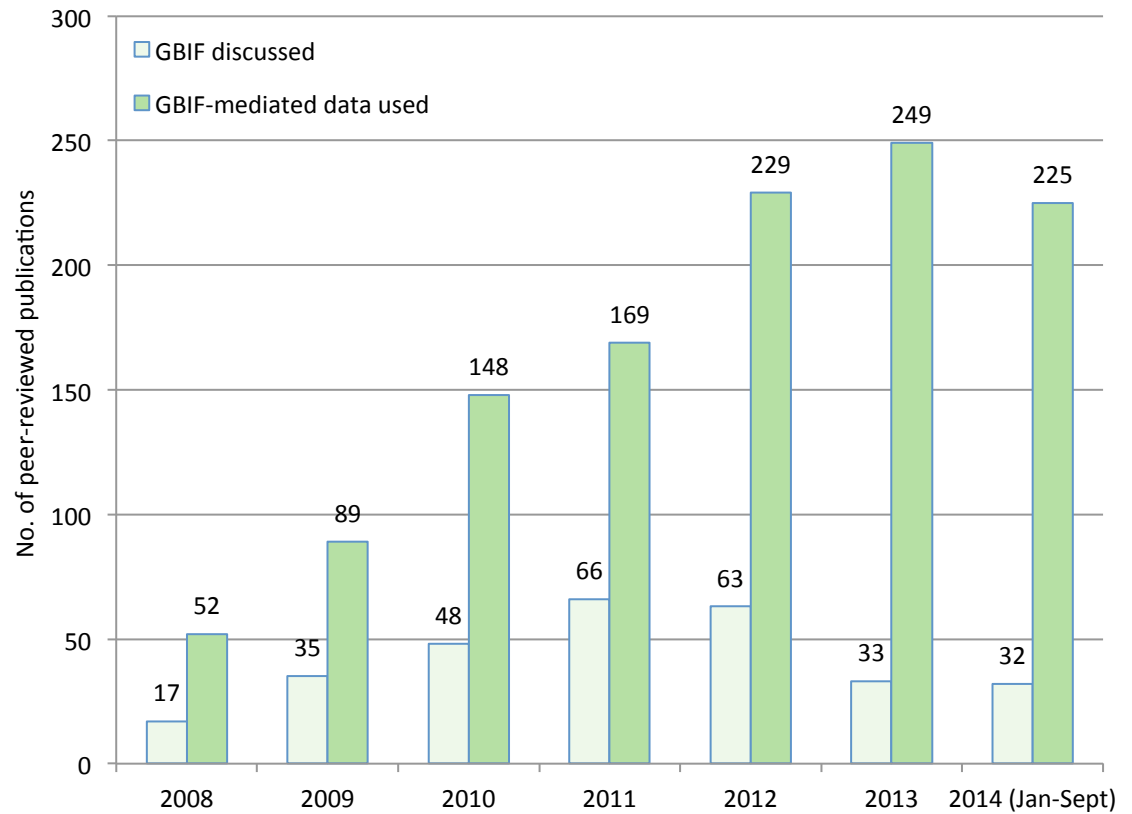
GBIF AND 'DATA PAPERS'

Scholarly publication of searchable metadata through Pensoft & Nature Publishing

- Describes a dataset or group of datasets in structured, human-readable form
- Promotes and publicizes the existence of data
- Provides scholarly credit to data publishers through citable journal publications



GBIF IMPACTS: SUPPORTING SCIENCE



Take home

- data standards
- aggregate and share
- use data
- fitness for use
- cite correctly
- archive processed data

gbif.org

Thank you

gbif.org

Mapping the zoonotic niche of Ebola virus disease in Africa

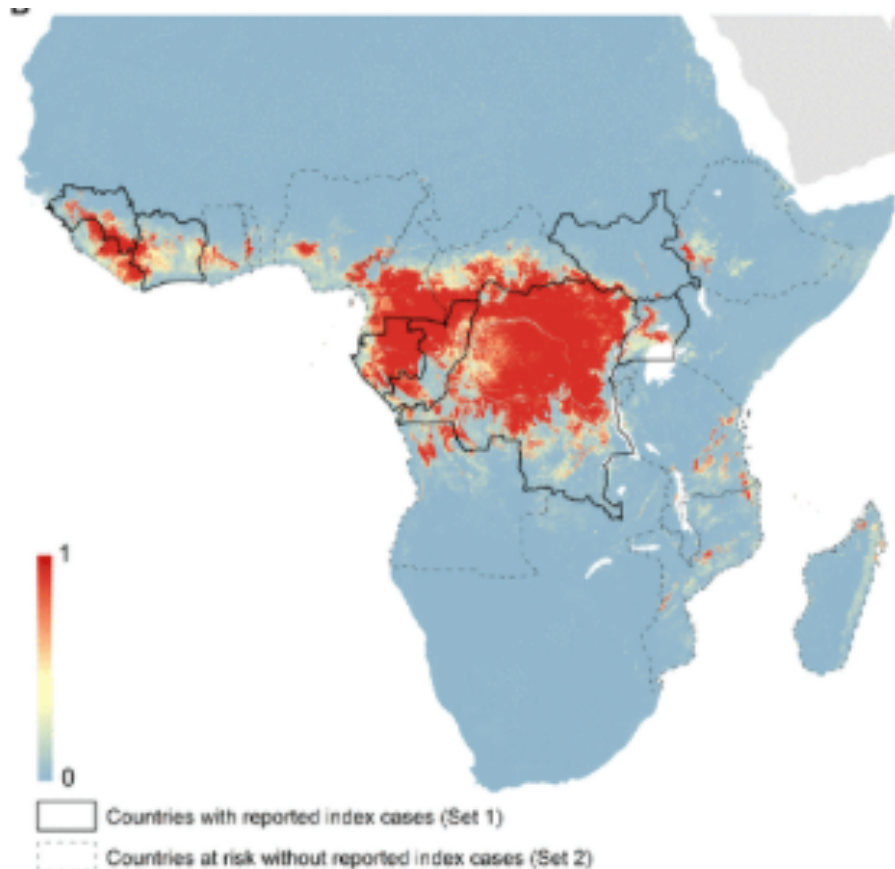


eLIFE

David M Pigott, Nick Golding, Adrian Mylne, Zhi Huang, Andrew J Henry, Daniel J Weiss, Oliver J Brady, Moritz UG Kraemer, David L Smith, Catherine L Moyes, Samir Bhatt, Peter W Gething, Peter W Horby, Isaac I Bogoch, John S Brownstein, Sumiko R Mearu, Andrew J Tatem, Kamran Khan, Simon I Hay ✉



- Modelled environmental niches of three bat species associated with Ebola transmission
- Occurrence records accessed via GBIF
- At-risk areas cover 22 countries, population of 22 million
- Helps to prioritize surveillance and diagnostic capacity in at-risk areas



A rapid methodology for developing invasive species watch list

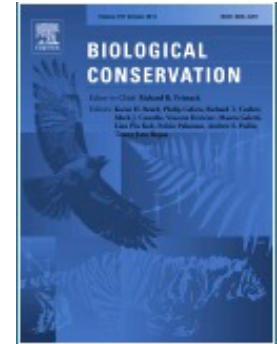
Faulkner^{a,b,*}, Mark P. Robertson^b, Mathieu Rouget^c, John R.U. Wilson^{a,d}

^aProgramme, South African National Biodiversity Institute, Private Bag X7, Claremont 7735, South Africa

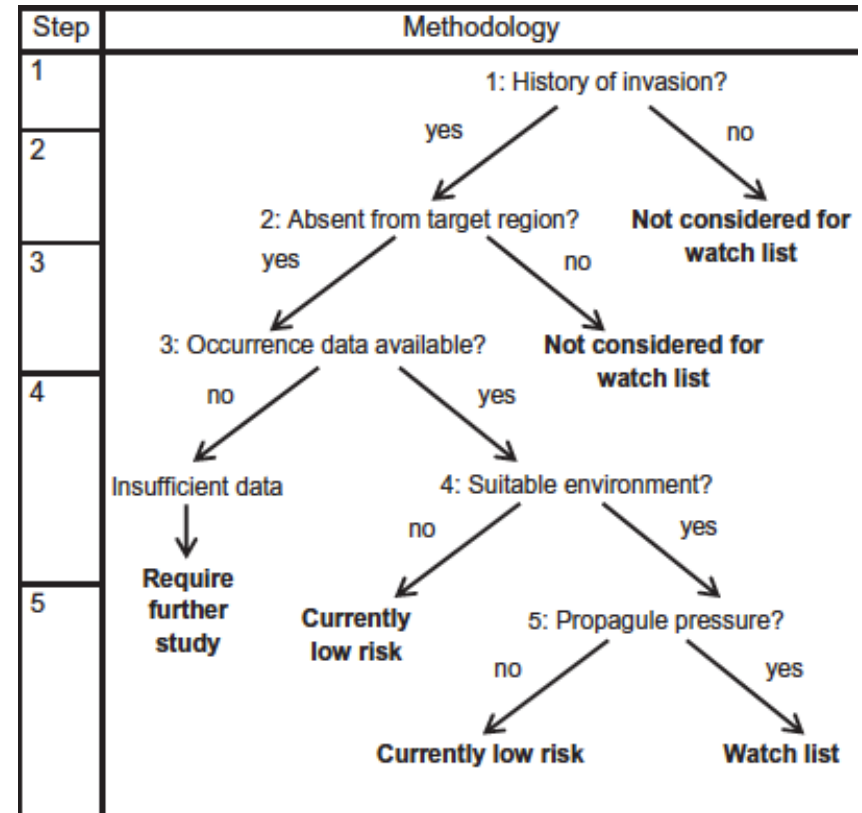
^bDepartment of Zoology and Entomology, University of Pretoria, Hatfield 0028, South Africa

^cDepartment of Biology, School of Agricultural, Earth and Environmental Sciences, University of KwaZulu-Natal, Private Bag X01, Scottsville 32

^dDepartment of Biology, Department of Botany and Zoology, Stellenbosch University, Private Bag X1, Matieland 7602, South Africa



- Used more than 20m records via GBIF for 884 species on Global Invasive Species Database (GISD)
- Modelled likely invasion success for South Africa based on environmental suitability, propagule pressure
- Identified watch list of 400 potential invaders
- Methodology applicable to any region



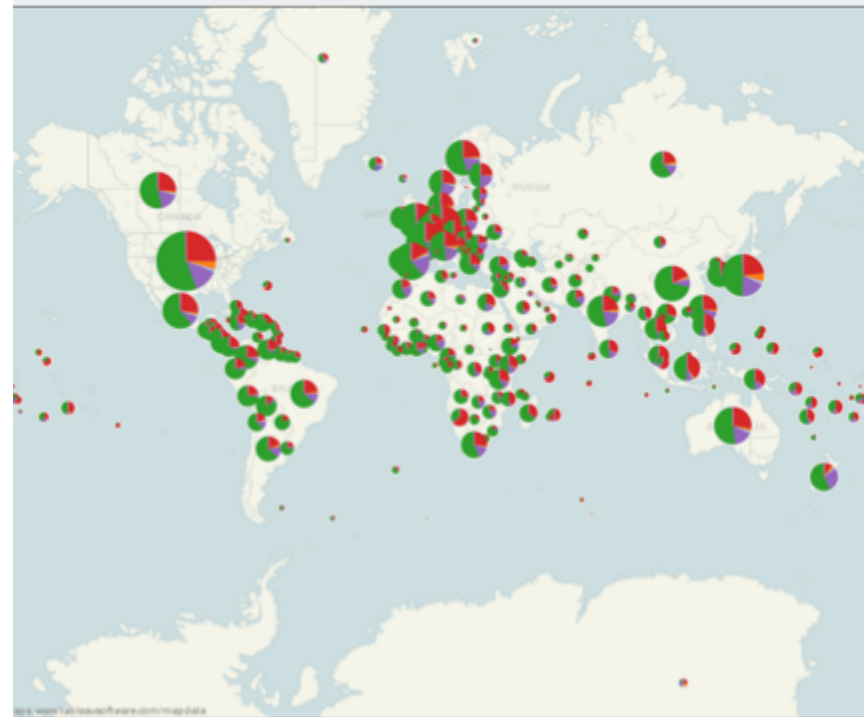
Biological Diversity in the Patent System

Paul Oldham , Stephen Hall, Oscar Forero

Published: November 12, 2013 • DOI: 10.1371/journal.pone.0078737 • Featured in PLOS Collections



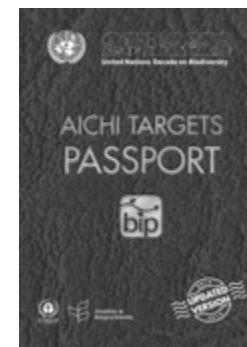
- Mined 11MM patent documents for 6MM scientific species names from the GBIF and EOL's Global Names Index
- Identified 76,274 species names from 23,882 genera in 767,955 patent documents
- Patent system focuses on ~4% of taxonomically described species <1% of predicted global species
- Human innovation and ownership of genetic resources requires consideration of broader, more equitable spectrum of biodiversity



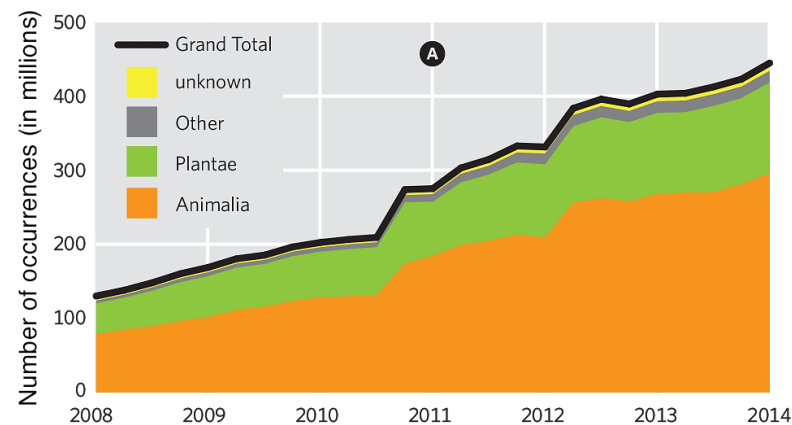
GBIF data showing global distribution of species in patents by kingdom (Oldham et al. 2014)

Global Biodiversity Outlook 4

A mid-term assessment of progress towards the implementation of the Strategic Plan for Biodiversity 2011–2020



- Records published through GBIF over time now serves as a CBD indicator for Target 19 on sharing knowledge
- ‘With the advances made in building systems to share data, information and knowledge on biodiversity, a significant part of this target is judged to be on track.
- “However, to meet all components of the target, further efforts are needed on investment in data mobilization and the coordination of models and technologies that can be readily applied to decision making.”



Growth in species occurrence records` published through GBIF