

GBIF and EuropaBON

Tim Hirsch | Deputy Director



EuropaBON Stakeholder workshop | 26 May 2021

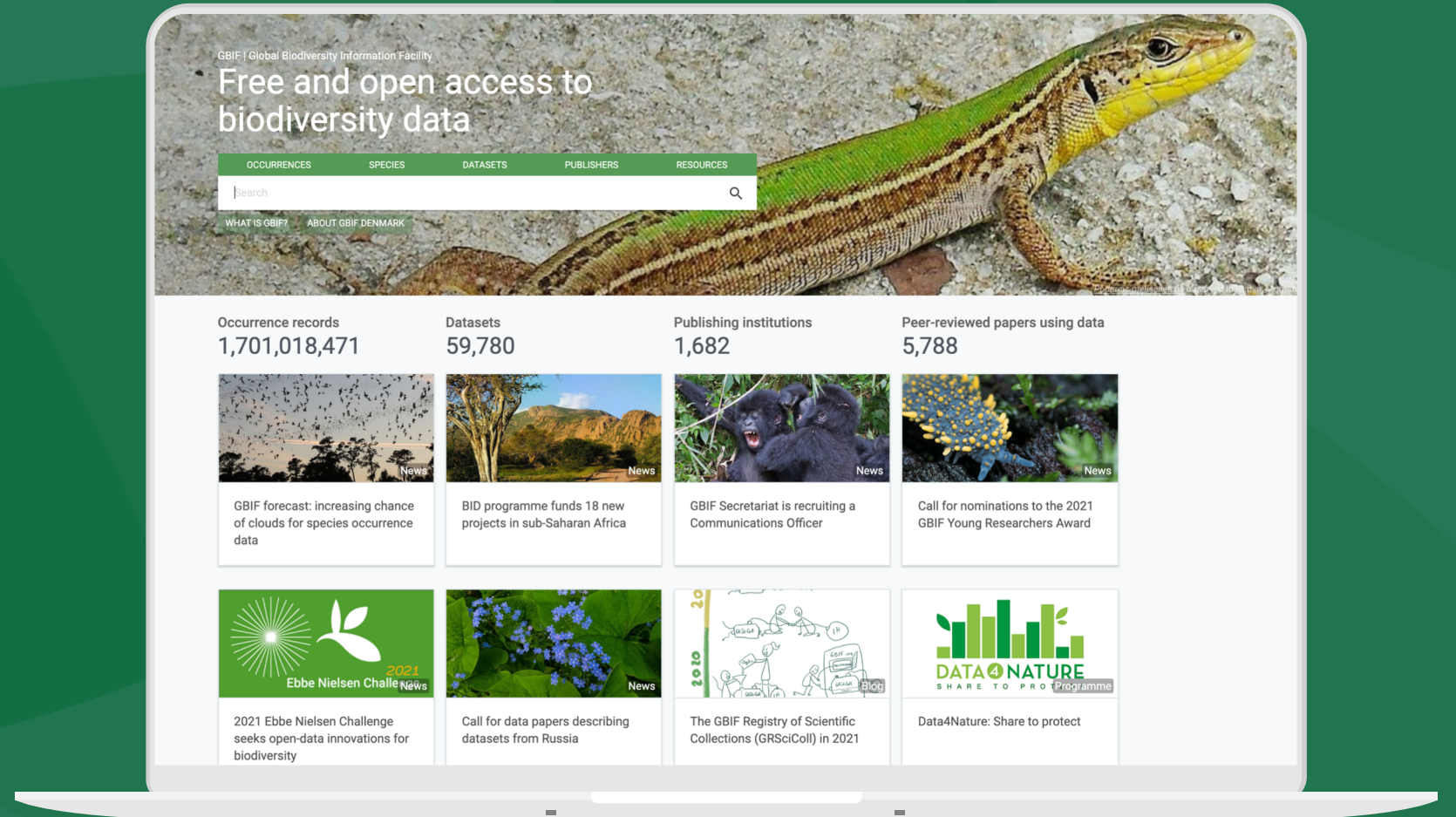
WHAT IS GBIF?

Intergovernmental network
and research infrastructure

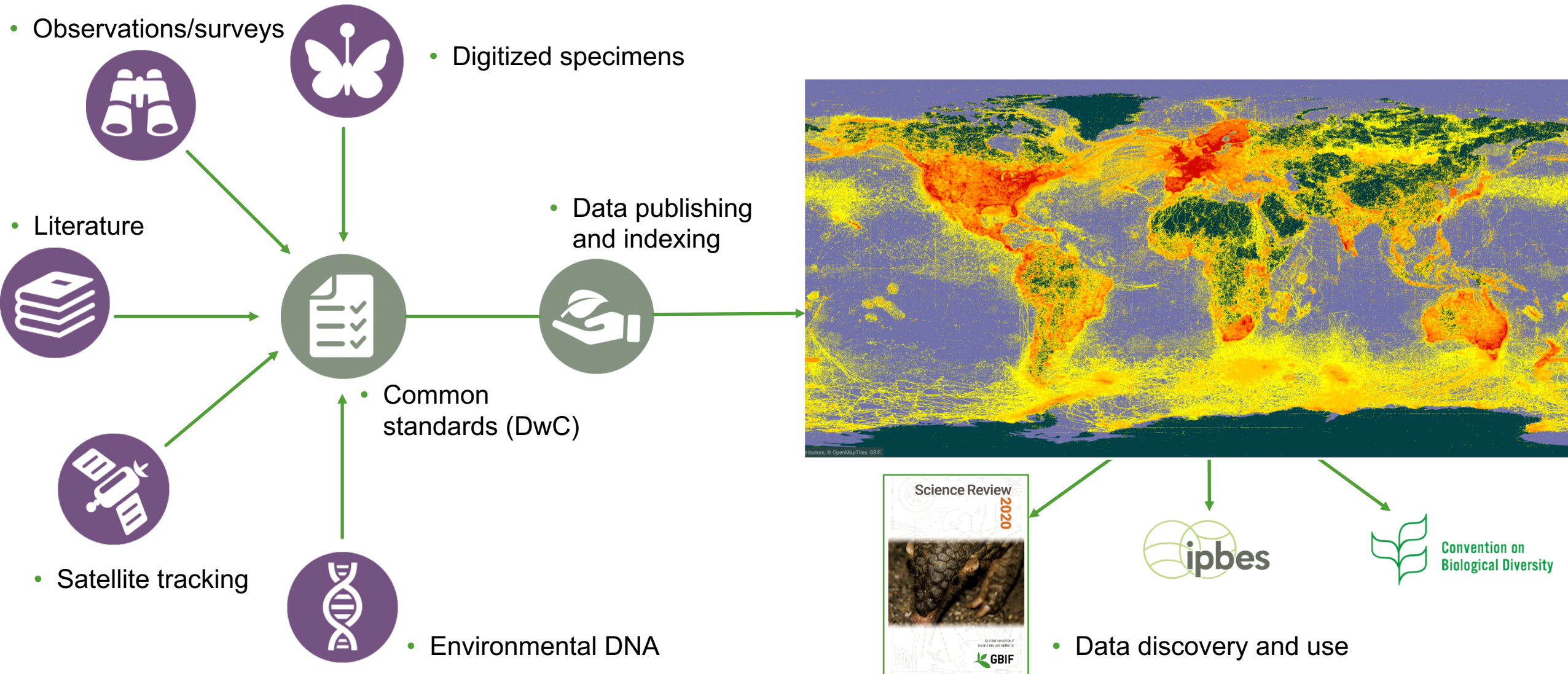
Provides anyone,
anywhere, free and open
access to data about all
types of life on Earth

Voluntary collaboration
through Memorandum of
Understanding

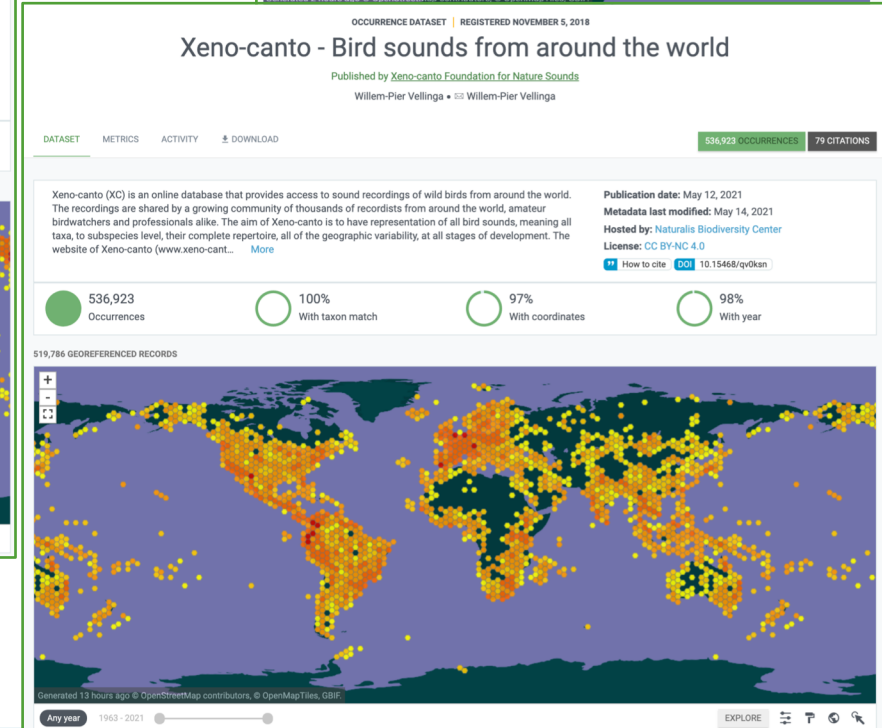
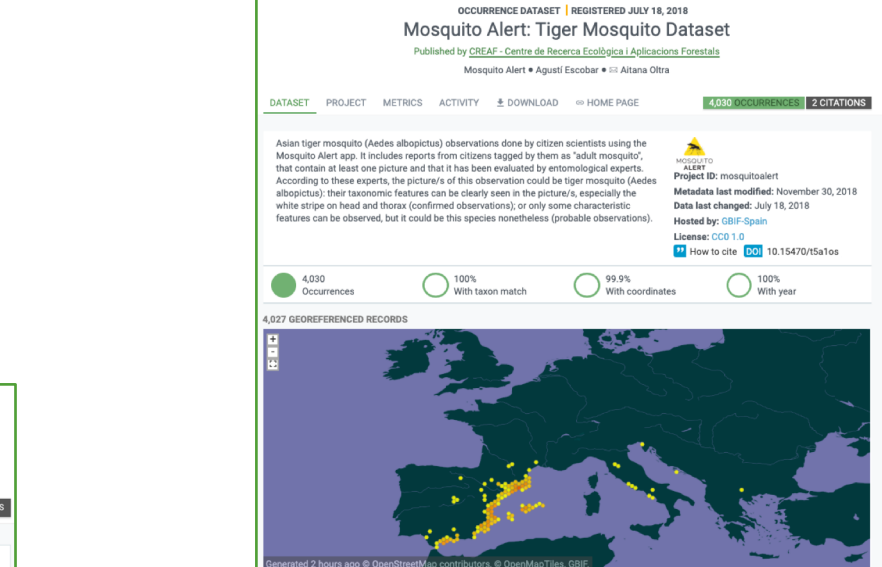
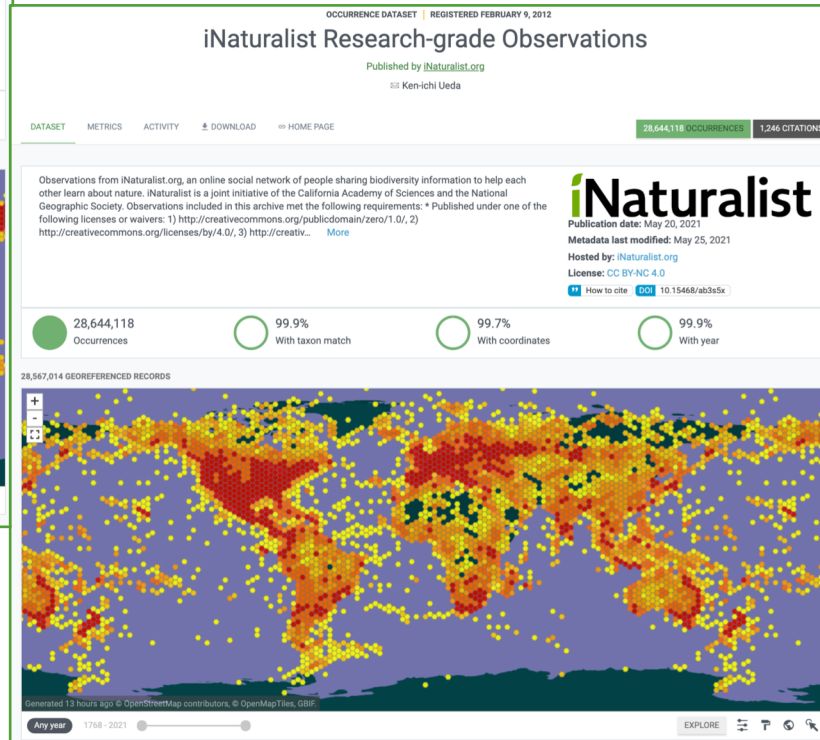
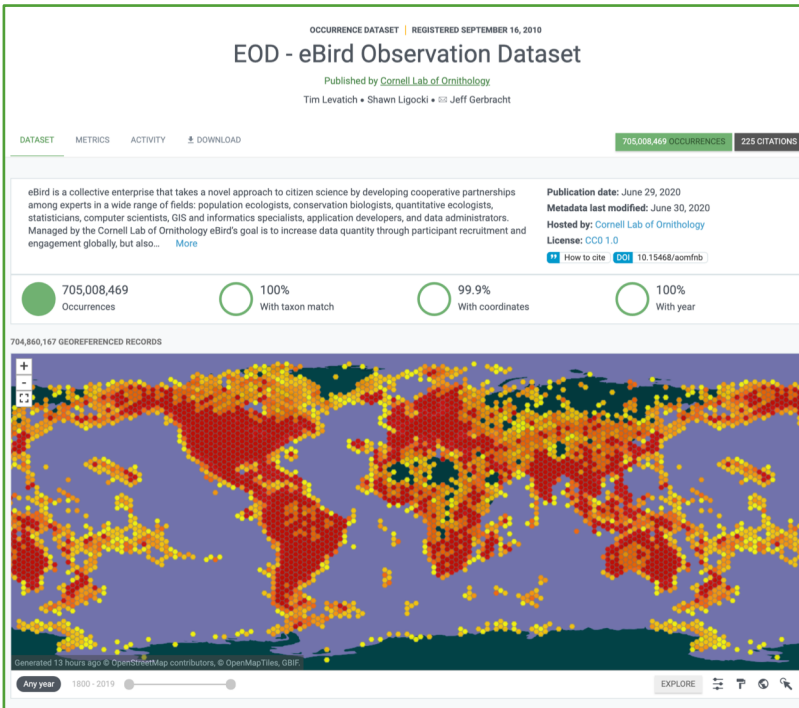
Participant nodes,
Secretariat in
Copenhagen, DK



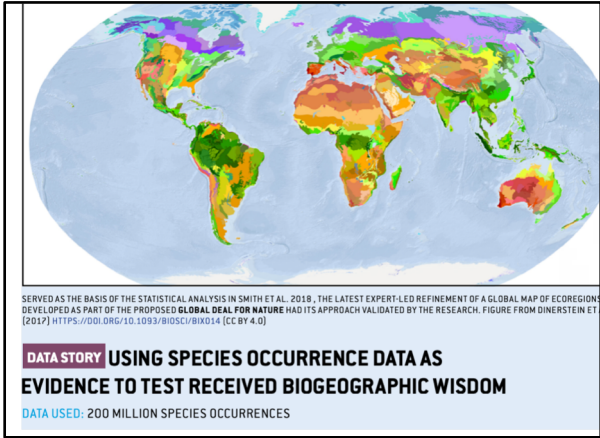
A WINDOW ON EVIDENCE ABOUT WHERE SPECIES HAVE LIVED, AND WHEN



SOURCES OF DATA IN GBIF: CITIZEN SCIENCE OBSERVATIONS



A DATA RESOURCE TO SUPPORT RESEARCH AND SUSTAINABLE DEVELOPMENT



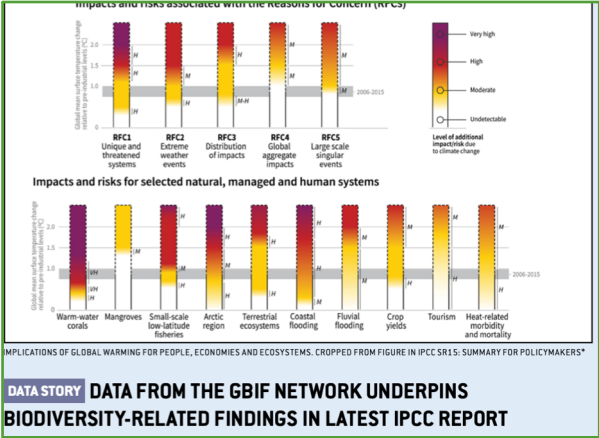
Conservation

- Protected areas
- Threatened species
- Invasive species risk



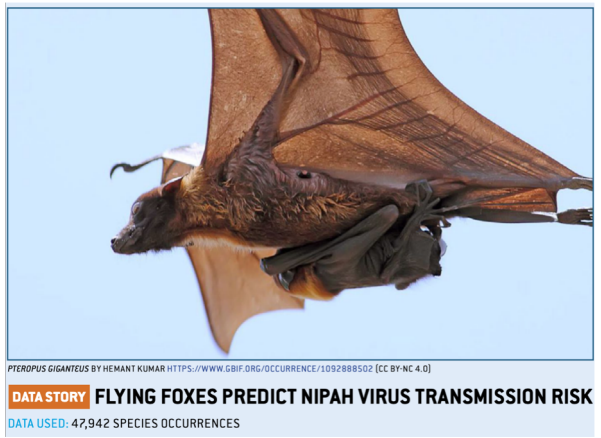
Food Security

- Crop wild relatives
- *In situ, ex situ* conservation of genetic diversity
- Fisheries planning



Climate change

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



Human health

- Disease risk based on occurrence of vectors, hosts, reservoirs
- Medicinal plants
- Hazards e.g. snakebite

- Data source for indicators of progress towards Aichi Biodiversity Targets, post-2020 Global Biodiversity Framework



- Trend in invasive alien species introductions (through Global Register of Introduced and Invasive Species)



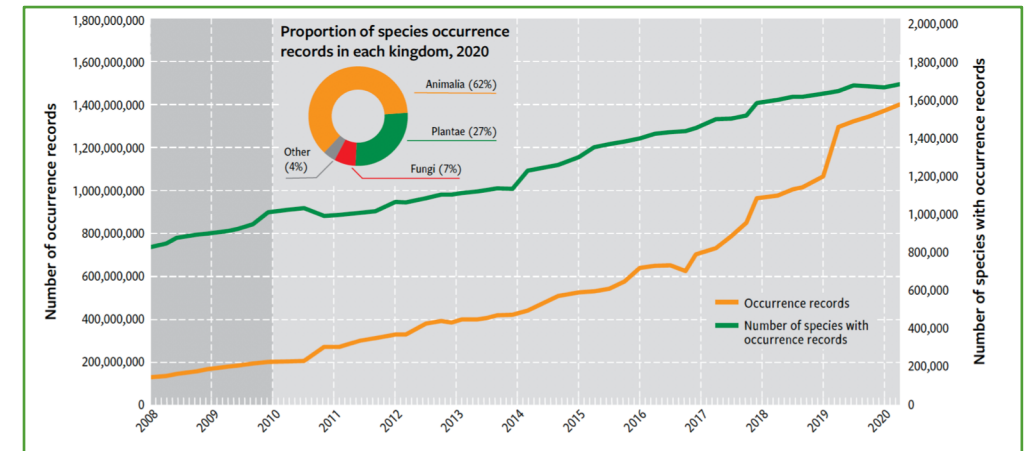
- Species Protection Index
- Protected Area Representativeness Index



- Comprehensiveness of conservation of socioeconomically/culturally valuable species
- Agrobiodiversity Index
- Crop Wild Relative Index



- Growth in species occurrence records accessible through GBIF
- Species Status Information Index



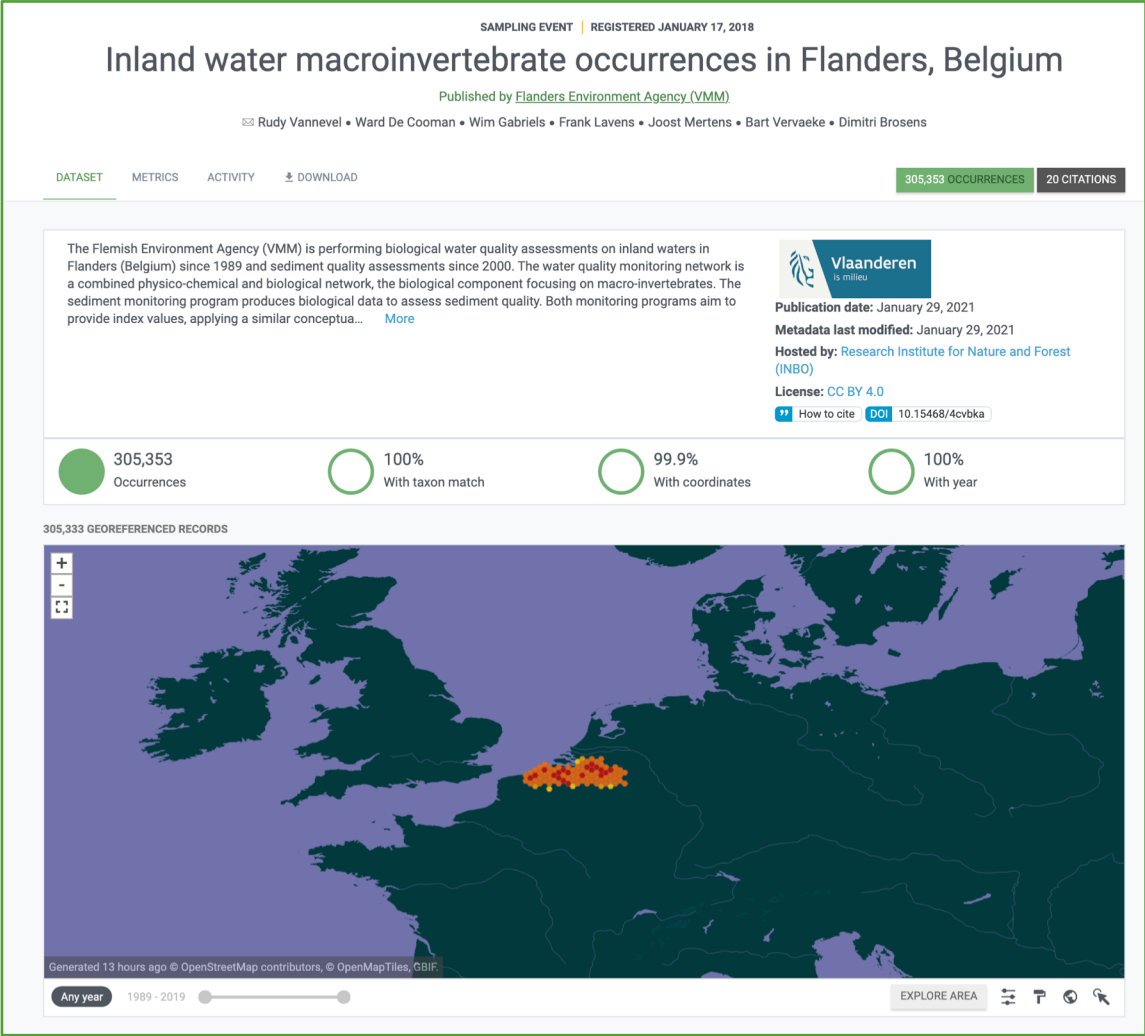
DARWIN CORE SAMPLING-EVENT (AKA EVENT CORE) DATA IN GBIF

The screenshot shows the GBIF dataset search interface. At the top, it says 'SEARCH DATASETS | 1,703 RESULTS'. Below this is a navigation bar with tabs: 'ALL', 'OCCURRENCE', 'CHECKLIST', 'SAMPLING EVENT' (which is highlighted with a red box), and 'METADATA'. The main content area displays a list of datasets, each with a title, description, publisher, and occurrence/citation counts. The datasets listed are: 'Dutch Vegetation Database' (11,987,804 occurrences, 154 citations), 'Marine metagenomes Metagenome' (4,540,802 occurrences, 21 citations), 'Bumblebees and butterflies in Norway' (3,506,580 occurrences), 'The CPR Survey' (2,112,490 occurrences, 9 citations), and 'DNV' (no counts shown). Each dataset entry includes a small world map icon and a 'Sampling event' label.

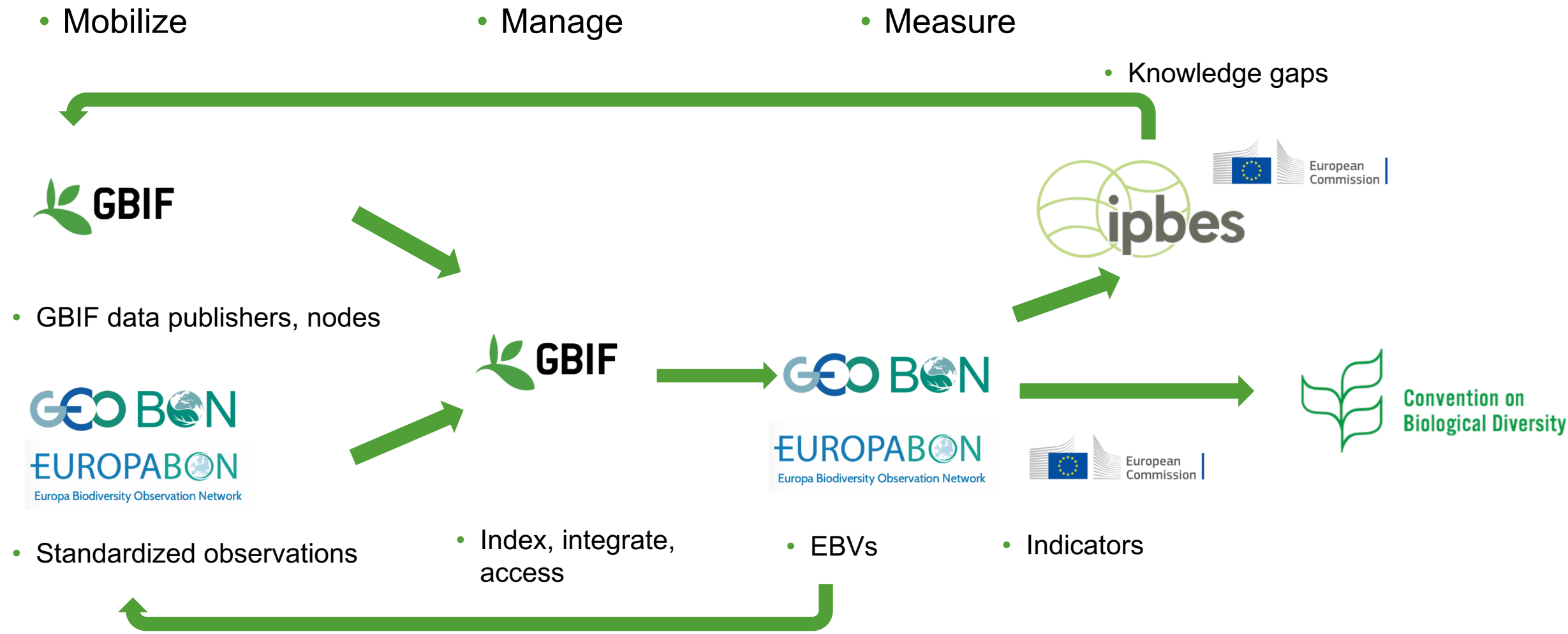
Dataset Title	Occurrences	Citations
Dutch Vegetation Database	11,987,804	154
Marine metagenomes Metagenome	4,540,802	21
Bumblebees and butterflies in Norway	3,506,580	
The CPR Survey	2,112,490	9
DNV		

- Standard developed as part of GBIF contribution to EU BON
- Enables species occurrences to be associated with sampling event
- Incorporates sampling methodology/protocol, effort, abundance
- Currently >1800 sampling-event datasets in GBIF
- Standard currently under review through Biodiversity Information Standards (TDWG)

DARWIN CORE SAMPLING-EVENT (AKA EVENT CORE) DATA IN GBIF



GEO BON AND GBIF WORKING TOGETHER: M



NEWS | 20 MAY 2021

GBIF forecast: increasing chance of clouds for species occurrence data

Azure-ready data snapshot provides potential support for GEO-Microsoft Planetary Computer Programme research grants



Brazilian free-tailed bat (*Tadarida brasiliensis*), United States. Photo 2021 Caitlin Campbell via iNaturalist Research-grade Observations, licensed under CC BY-NC 4.0.

A dataset containing nearly 1.3 billion species occurrence records from the GBIF network is now available for use through the Microsoft Planetary Computer data catalogue. Currently comprised of openly licensed and georeferenced records shared through GBIF through mid-April, this snapshot provides users of the Microsoft Azure cloud-computing environment with easy access to primary biodiversity data in consistent, analysis-ready formats.

Developed by Microsoft AI for Earth, the Planetary Computer combines petabytes of global-scale environmental monitoring data and makes it readily available to users of the large-scale virtual computing system. Documentation, sample notebook and a post by GBIF data analyst John Waller on the GBIF Data Blog outline how users can start to access GBIF-mediated data from blob storage on Azure, whether inside or outside of the Planetary Computer.

Data Catalog

The Planetary Computer Data Catalog includes petabytes of environmental monitoring data, in consistent, analysis-ready formats. All of the datasets below can be accessed via Azure Blob Storage, and can be used by developers whether you're working within or outside of our Planetary Computer Hub.

Datasets available through the Planetary Computer API

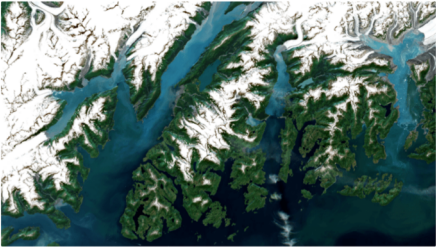
Our largest data sets can be queried and accessed through our Planetary Computer API. We are continuing to expand the data available through the API, and continuing to bring new data sets to Azure. If you are interested in seeing additional data on-boarded or published through our API – or if you have data you'd like to contribute – [contact us](#).



Landsat 8 Collection 2 Level-2

Landsat 8 has captured 30m-resolution imagery of the Earth since 2013. This dataset contains global, atmospherically-corrected imagery from Landsat Collection 2

[Explore Landsat 8](#)



Sentinel-2 Level-2A

The Sentinel-2 program provides global imagery in thirteen spectral bands at 10m-60m resolution and a revisit time of approximately five days. This dataset contains the global Sentinel-2 archive, from 2016 to the present, processed to L2A (bottom-of-atmosphere).

[Explore Sentinel-2](#)

Additional datasets

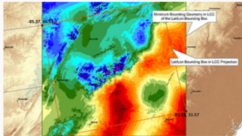
The following datasets are available on Azure, for use within or outside of the Planetary Computer Hub.



GBIF

Species occurrences shared through the Global Biodiversity Information Facility

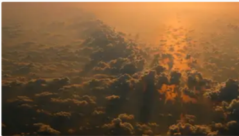
[Get GBIF occurrence data >](#)



Daymet

Gridded temperature data across North America

[Get Daymet temperature data >](#)



Global Hydro Estimator

Global precipitation estimates

[Get global precipitation data >](#)



GOES-16

Weather imagery of the Americas

[Get GOES-16 weather data >](#)



Harmonized Global Biomass

Global carbon density for 2010

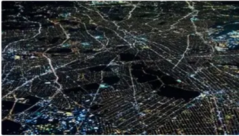
[Get global biomass data >](#)



Harmonized Landsat Sentinel-2

30m-resolution satellite imagery for North America

[Get HLS data >](#)



High Resolution Electricity Access

Settlement-level measures of electricity access and reliability

[Get HREA data >](#)



LILA BC

Labeled images related to wildlife conservation

[Get LILA BC data >](#)

THANK YOU

thirsch@gbif.org

