

# Biodiversity Meets Data

Scaling up on biodiversity monitoring and biodiversity analyses for better conservation across Europe



Project funded by



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation

Federal Department of Economic  
Education and Research EAE  
State Secretariat for Education,  
Research and Innovation SERI

BMD (Biodiversity Meets Data) receives funding from the European Union's Horizon Europe Research and Innovation Programme and the Swiss State Secretariat for Education, Research and Innovation (SERI) (ID No 101181294). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union, the European Research Executive Agency (REA) or SERI. The EU, REA and SERI cannot be held responsible for them.

A large, dark, eel-like fish is resting on a rock in a green, grassy underwater environment. The fish is positioned horizontally, facing right, and is partially obscured by the word 'Contributions'. The background is filled with dense, green, leafy plants, creating a vibrant, natural setting. The overall tone is green and blue, suggesting an underwater or aquatic theme.

# Contributions

# Partners



Swiss Institute of  
Bioinformatics



Royal  
Botanic Garden  
Edinburgh



INTERNATIONAL  
HELLENIC  
UNIVERSITY



# Represented Biodiversity RIs and Projects through BMD partners



# Consortium members at BMD's kick-off meeting

Leiden, Netherlands

Project duration: March 2025 – February 2029



## BMD in support of the EU biodiversity strategy for 2030



- **Plan, manage and expand** protected areas and **improve the conservation status** of species and habitats based on up-to-date knowledge and solutions.
- **Understand and address drivers of biodiversity decline**
- **Mainstream biodiversity, ecosystem services**, including through the development of nature-based solutions.

A sloth is sitting in a grassy field, looking upwards. The entire image is overlaid with a semi-transparent teal color. The sloth's fur is dark and shaggy, and its long tail is visible on the left side. The grass is green and appears to be in focus.

**Expected outcomes**

## BMD's expected outcomes

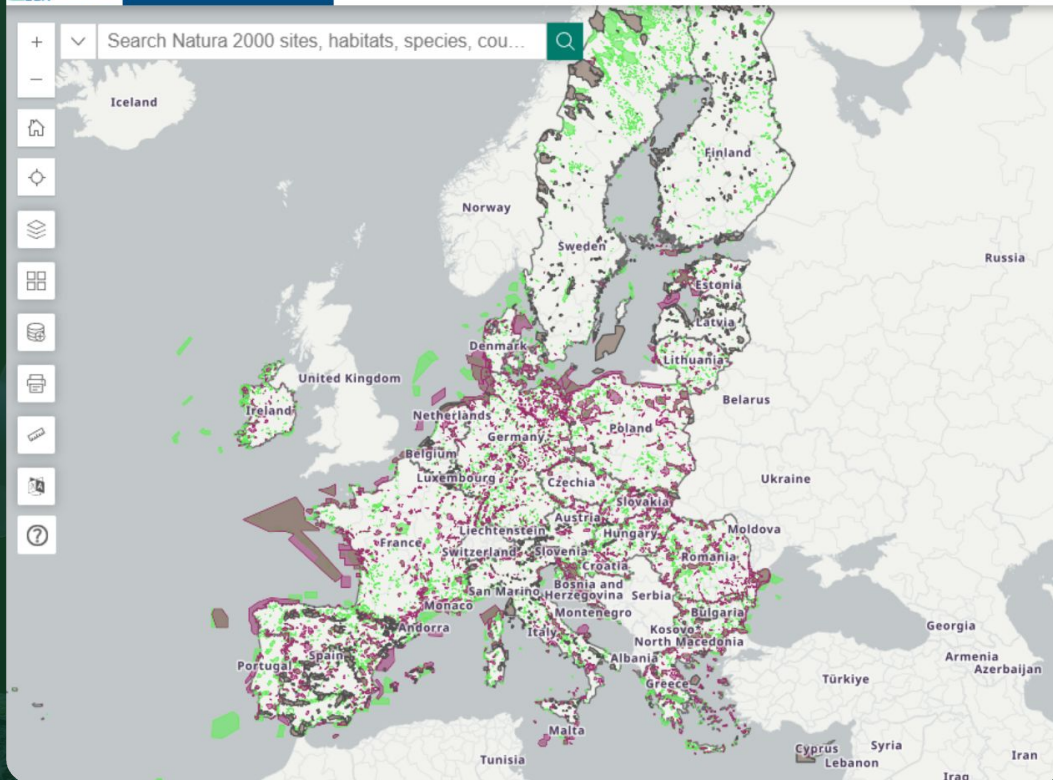
- **Better monitoring** of biodiversity in the EU by high-throughput methods leading to a better implementation of the Nature Directives.



NATURA 2000

EXPERT VIEWER

Disclaimer and note for dataset year 2024



es

f biodiversity in  
throughput methods  
implementation  
ives.

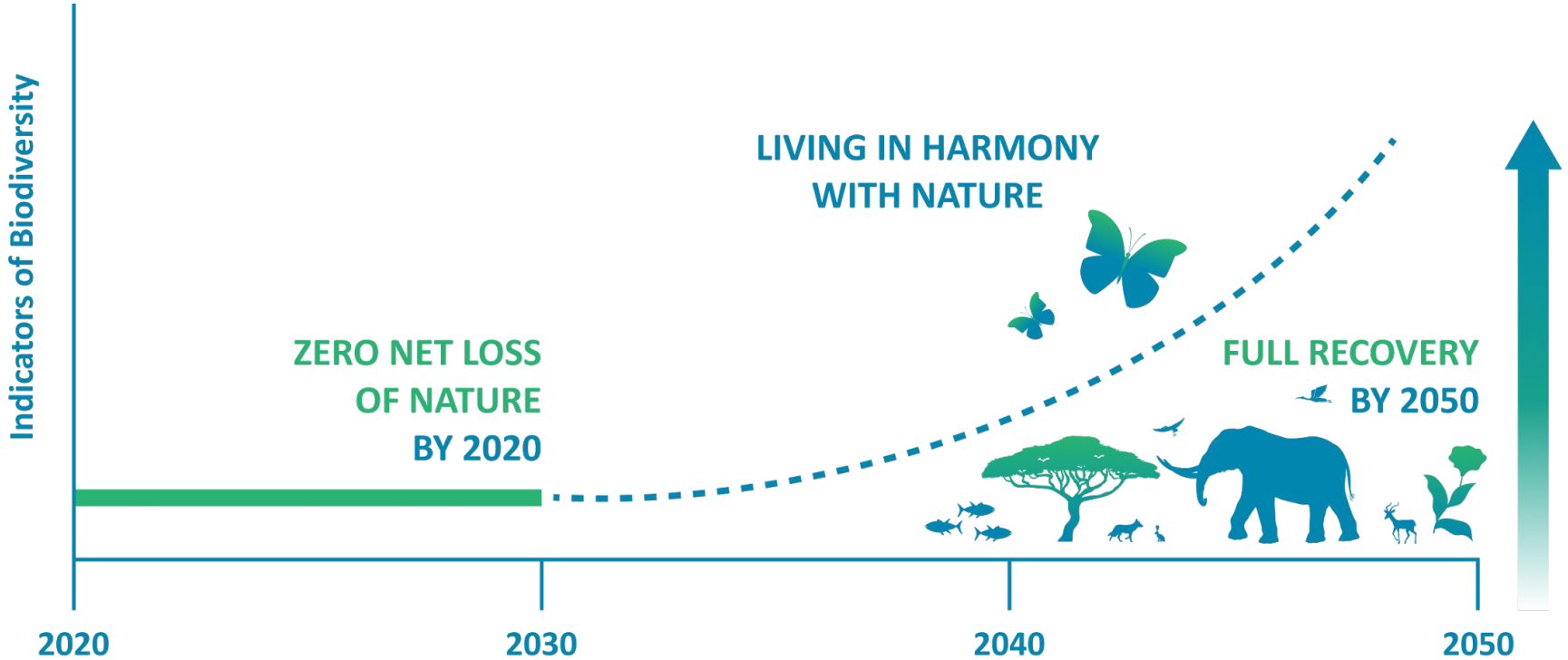


## BMD's expected outcomes

- **Better monitoring** of biodiversity in the EU by high-throughput methods leading to a better implementation of the Nature Directives.
- **Better understanding** of the state of nature and of the drivers of biodiversity loss, a better usage of existing data.
- **More complete view** of the state of nature and its evolution.

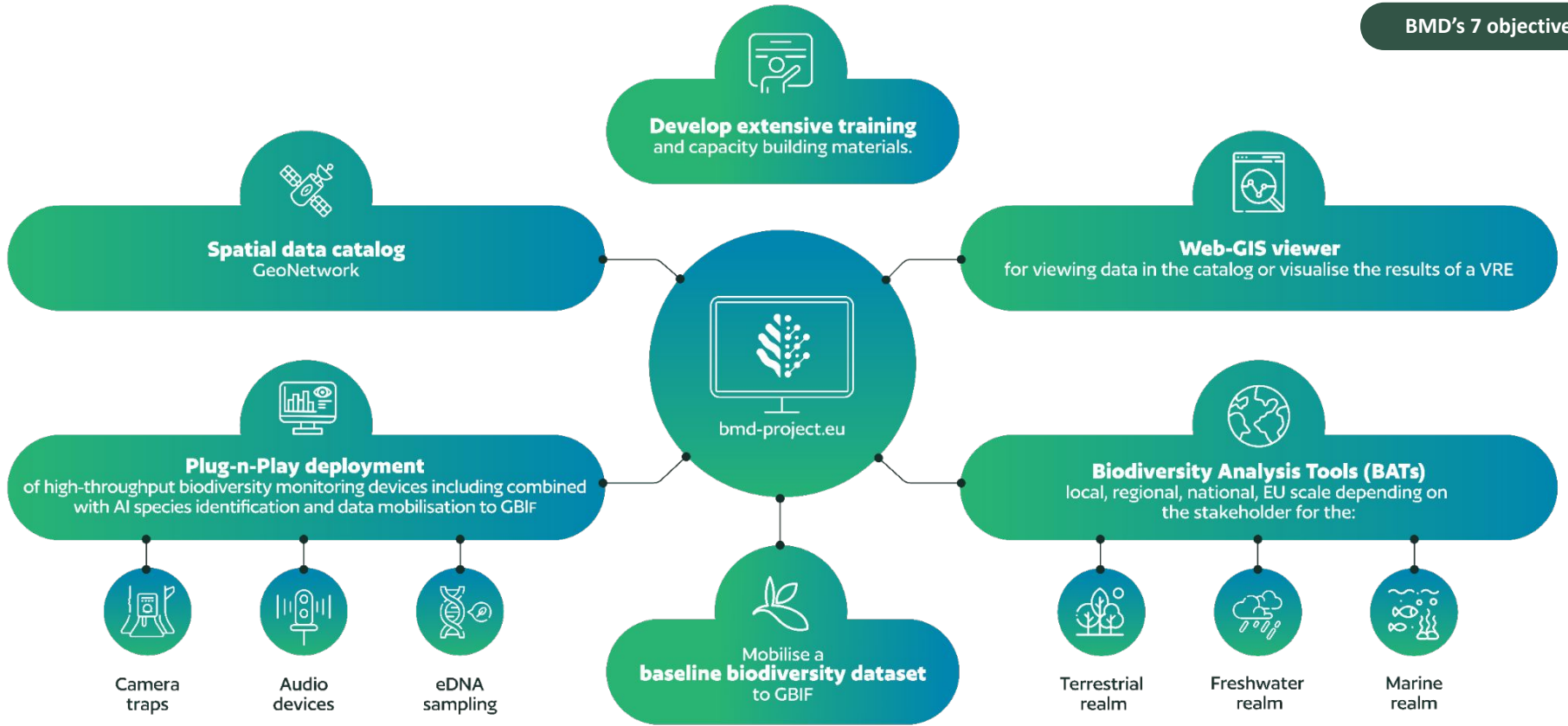
# Figure 23: Nature Positive by 2023

A measurable global goal for nature.  
Source: Locke et. al (2021).



A bison is shown in profile, facing right, in a grassy field. The entire image is covered with a semi-transparent teal gradient that is darker at the top and lighter at the bottom. The text "Seven objectives" is centered in white, bold font.

# Seven objectives



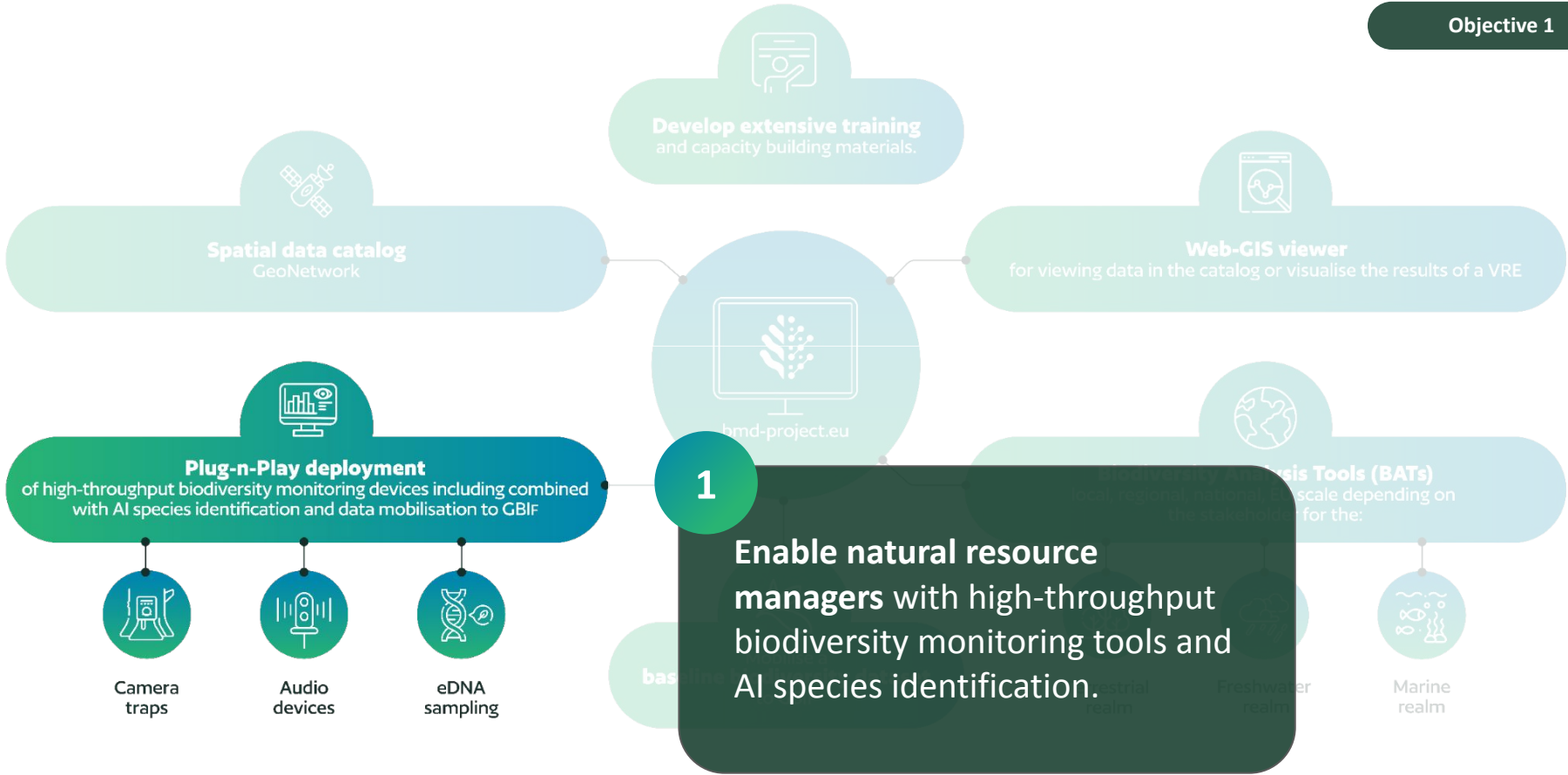
Year 1

Year 2

Year 3

Year 4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48





1

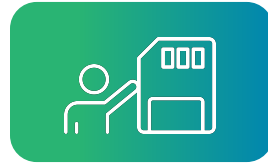
Enable natural resource managers with high-throughput biodiversity monitoring tools and AI species identification.



## Traditional monitoring with cameras and audio devices



Camera with  
batteries & SD cards



Manual data  
collection



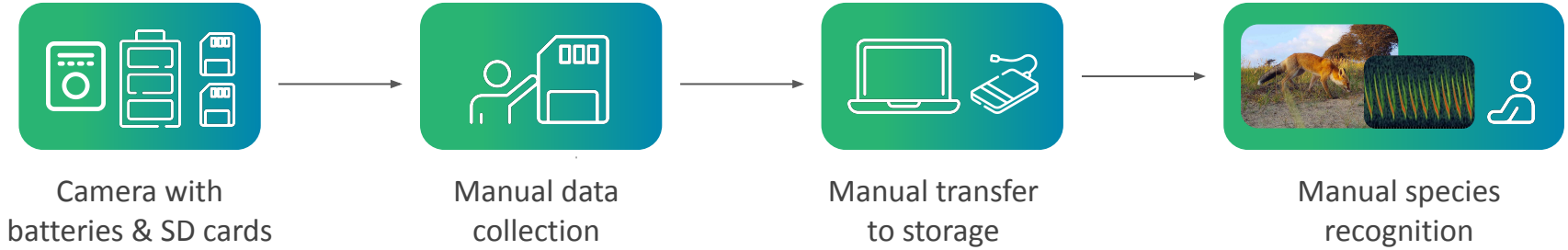
Manual transfer  
to storage



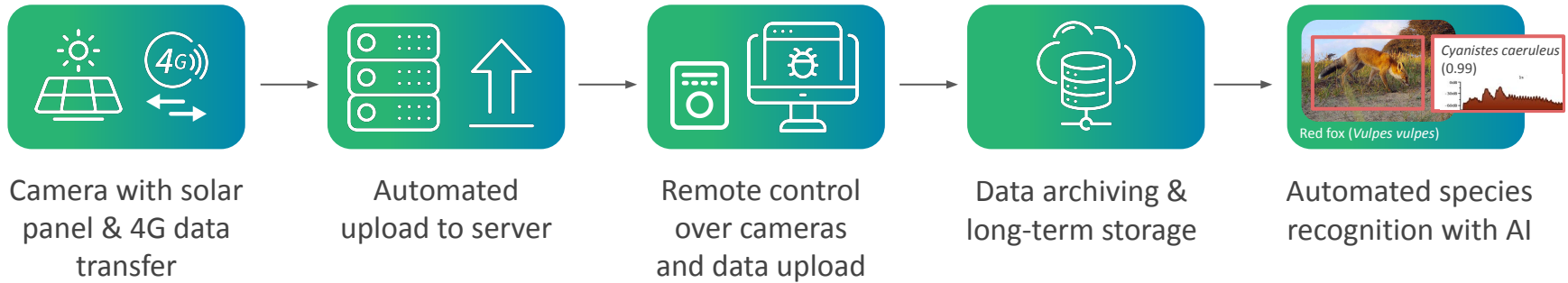
Manual species  
recognition



## Traditional monitoring with cameras and audio devices



## Autonomous monitoring with cameras and audio devices

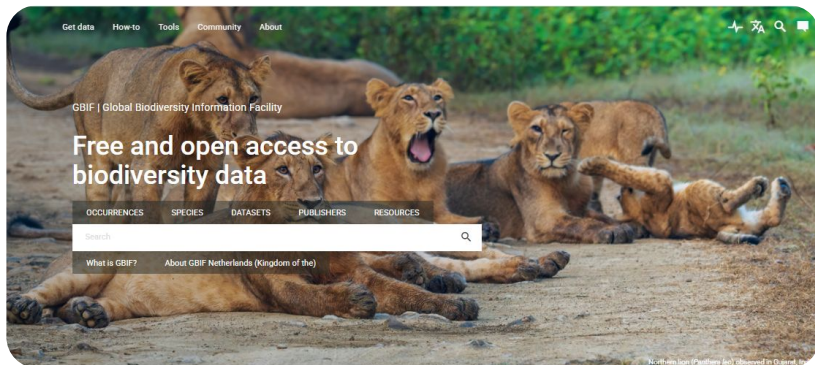
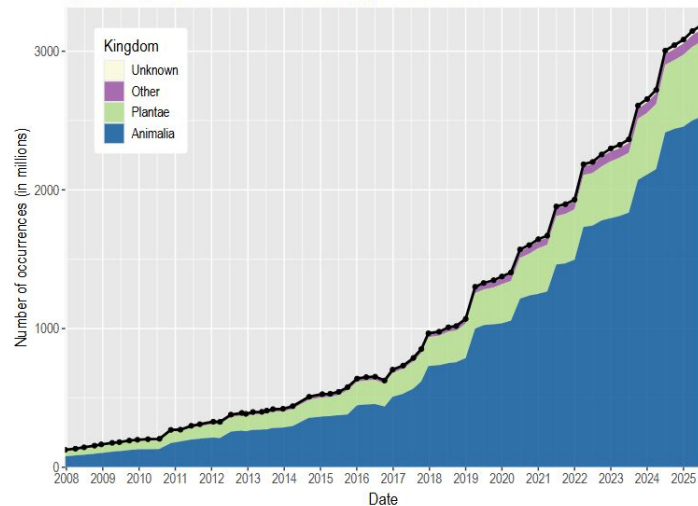


## Mobilisation of biodiversity data to the Global Biodiversity Information Facility – GBIF.org from:

1. Historical baseline assessments
2. Environmental Impact Assessments (EIAs)
3. N2000 Standard Data Forms (SDFs)
4. National checklists via CoL ChecklistBank
5. Etc.

2

**Support FAIR sharing** of  
baseline and legacy  
biodiversity data.


**Species occurrence records accessible through GBIF over time**

**3,509,418,243**

Occurrence records


**117,538**

Datasets


**2,563**

Publishing institutions


**13,583**

Peer-reviewed papers using data



Kunming - Montreal

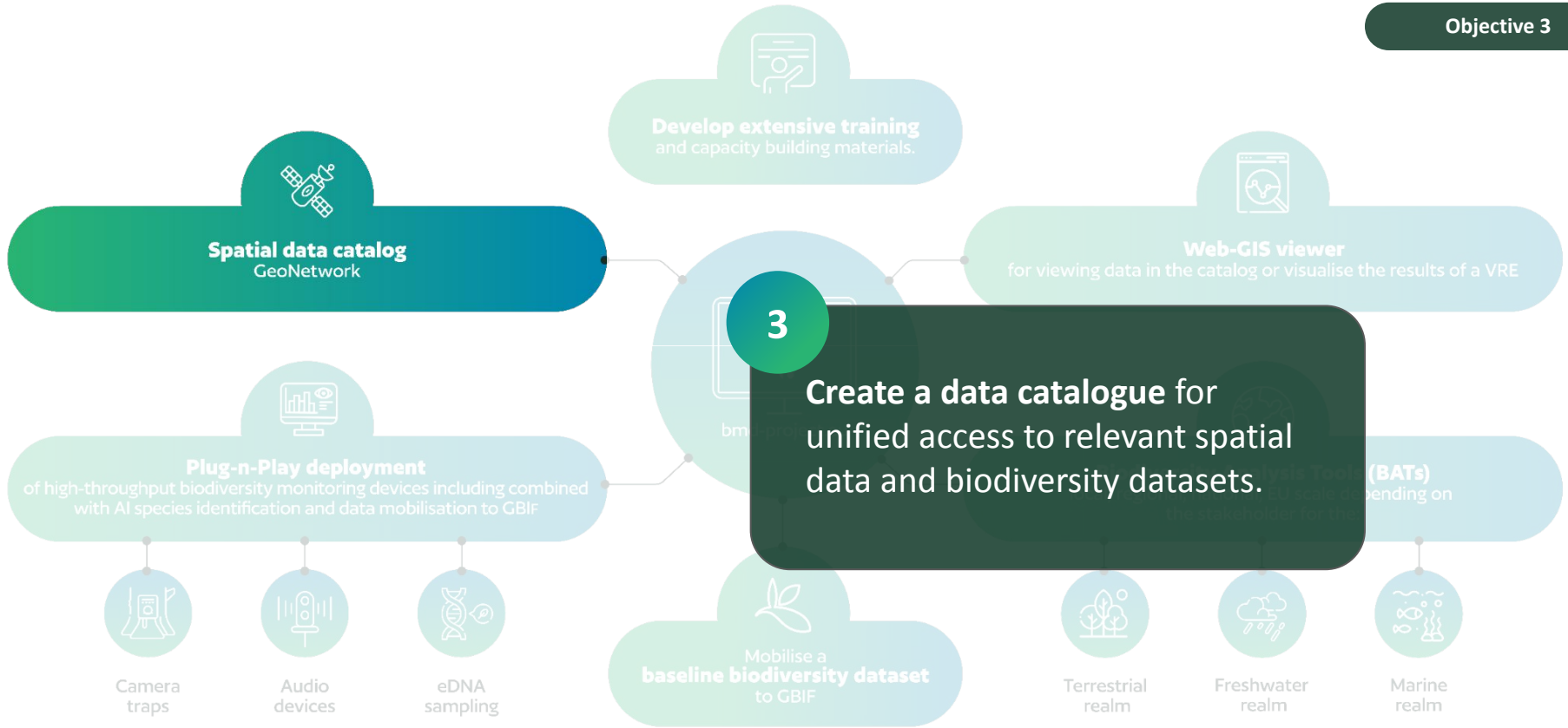
# GLOBAL BIODIVERSITY FRAMEWORK

Objective 2

21

Ensure That Data and Knowledge are Available and Accessible to Guide Biodiversity Action



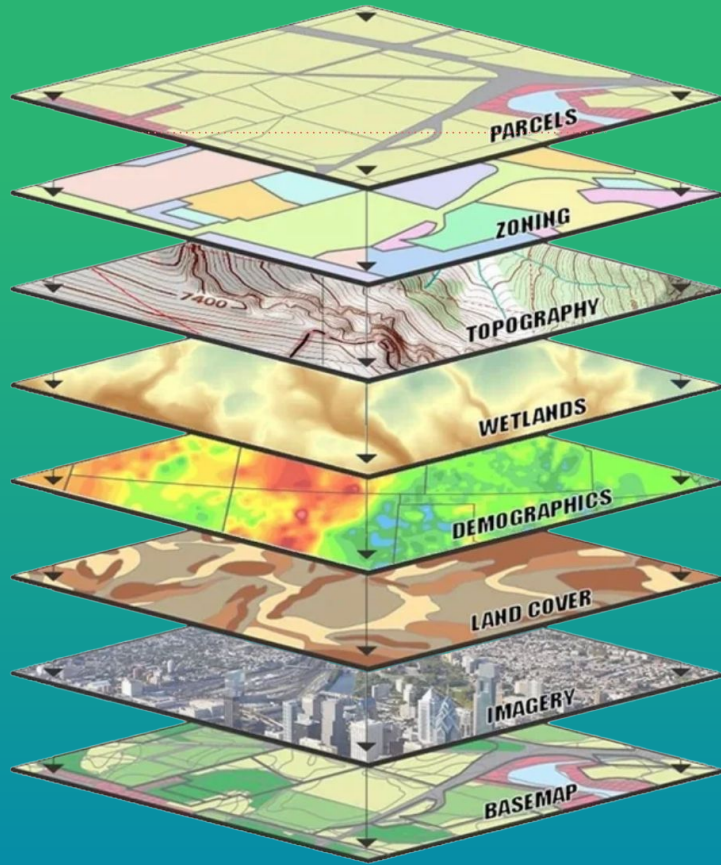


<input type="checkbox"/> <p><b>Sentinel-3 OLCI Water Reduced Resolution (NTC)</b></p> <p>This collection provides Sentinel-3 OLCI Level-2 Water Reduced Resolution products containing data on water-leaving reflectance, ocean color, and more.</p> <p><a href="#">3 links</a></p>	Category: Datasets	
<input type="checkbox"/> <p><b>Sentinel-5P Level 2 Cloud (RPRO)</b></p> <p>This Collection provides Sentinel-5P Level-2 Cloud products, which contains high-resolution imagery of cloud parameters.</p> <p><a href="#">3 links</a></p>	Category: Datasets	
<input type="checkbox"/> <p><b>Sentinel-3 OLCI Land Full Resolution (NRT)</b></p> <p>This collection provides Sentinel-3 OLCI Level-2 Land Full Resolution products containing data on global vegetation, chlorophyll, and water vapor.</p> <p><a href="#">3 links</a></p>	Category: Datasets	
<input type="checkbox"/> <p><b>Sentinel-3 SRAL Land Radar Altimetry - Sea Ice (NTC)</b></p> <p>This Collection provides Sentinel-3 SRAL Level-2 Land Altimetry Sea Ice products, which contains estimations of the radar freeboard over the Arctic and Antarctic sea ice.</p> <p><a href="#">3 links</a></p>	Category: Datasets	
<input type="checkbox"/> <p><b>Global surface water 1984 - 2021</b></p> <p>This dataset is intended to show different facets of the spatial and temporal distribution of surface water over the last 38 years. The European Commission's Joint Research Centre developed this new water dataset in the framework of the Copernicus Programme. This maps the location and temporal distribution of water surfaces at the global scale over... more</p> <p><a href="#">3 links</a></p>	Category: Datasets	
<input type="checkbox"/> <p><b>Sentinel-3 SYNERGY Aerosol Optical Depth (NTC)</b></p> <p>This Collection provides the Sentinel-3 Synergy Level-2 Aerosol Optical Depth product, which is a downstream development of the Sentinel-2 Level-1 OLCI FR and SLSTR Radiances and Brightness Temperatures products. The dataset provides both retrieved and diagnostic global aerosol parameters at super-pixel (4.5 km x 4.5 km) resolution in a single Net... more</p> <p><a href="#">3 links</a></p>	Category: Datasets	
<input type="checkbox"/> <p><b>Natura 2000 - version end 2023</b></p> <p>Natura 2000 is an ecological network of protected areas, set up to ensure the survival of Europe's most valuable species and habitats. Natura 2000 is based on the 1979 Birds Directive and the 1992 Habitats Directive. Natura 2000 is the key instrument to protect biodiversity in the European Union. The European database of Natura 2000 sites consists... more</p> <p><a href="#">2 links</a></p>	Category: Datasets	
<input type="checkbox"/> <p><b>Bio-ORACLE</b></p> <p>This dataset provides 26 physical, chemical, biological, and topographic data layers with global coverage, uniform grid system, at a spatial resolution of 0.05 degrees, and a temporal resolution of 10 decadal steps, from 2000 to 2100, of which: 19 essential physical, chemical and biological variables, are presented as 6 statistics* for surface and... more</p> <p><a href="#">4 links</a></p>	Category: Datasets	

**3**

**Create a data catalogue** for unified access to relevant spatial data and biodiversity datasets.





4

**Build a pipeline** to harmonise spatio-temporal and taxonomic data.



ChecklistBank

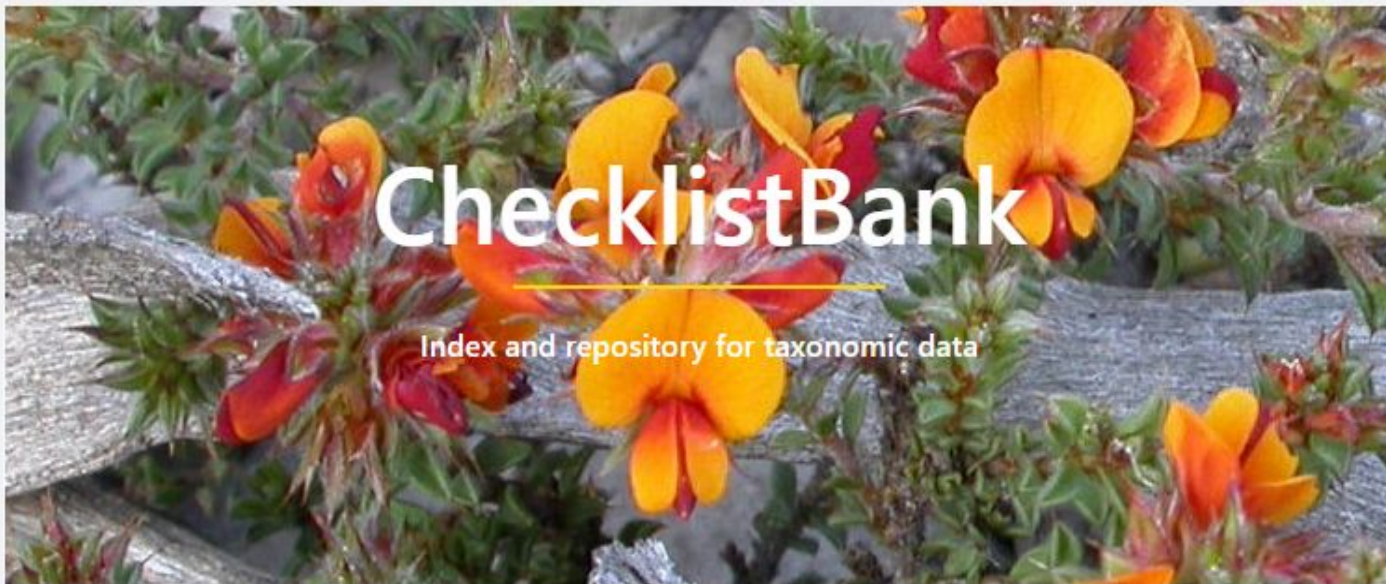
ini

About

Datasets

Tools

Dataset: 2014



Species in Catalogue of Life

2,232,257

Name Usages in ChecklistBank

280,798,612

Datasets in ChecklistBank

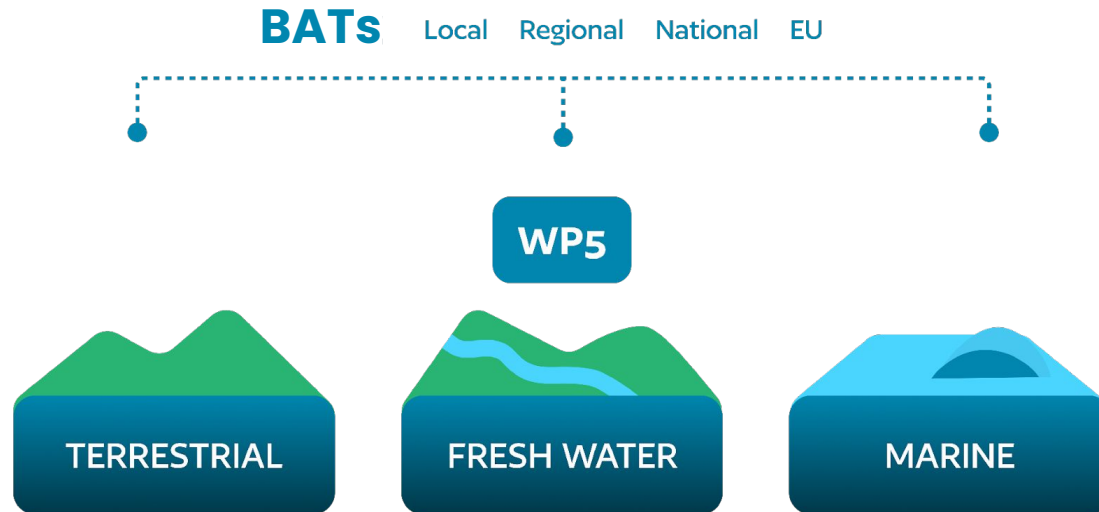
61,533

Latest COL Checklist

2025-09-11



Co-designed with stakeholders, these on-demand tools enable analysis of biodiversity trends, drivers of change, and impacts across all realms to support targeted action and policy.





# BMD stakeholders



**Public, private and third-sector managers of natural resource sites**  
with responsibility for site-level strategic delivery of biodiversity conservation.



**Government agencies**  
at multiple levels (Europe, national and regional) with responsibility for reporting under the Nature Directives.



**Policymakers**  
in the domain of the EU Green Deal, EU biodiversity strategy for 2030 and the EU nature restoration regulation.

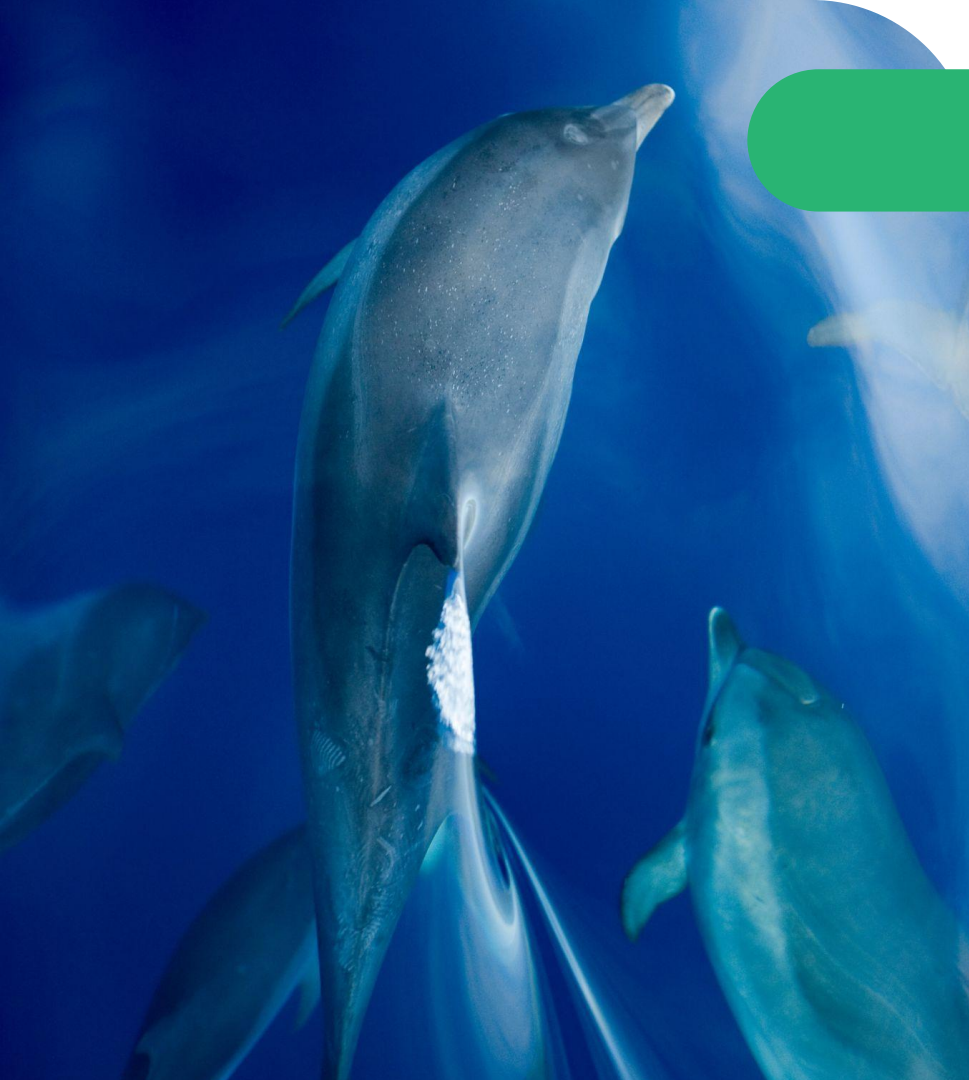


**Private sector**  
with reporting obligations under the Corporate Sustainability Reporting Directive.



**Academia**  
in the Natural and Life Science domains.





# Get involved!





# Follow us!



Biodiversity Meets Data



@bmd-project.eu



bmd-project.eu



Co-funded by  
the European Union

BMD receives funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101181294. Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the EU nor REA can be held responsible for them.