



generated January 2025

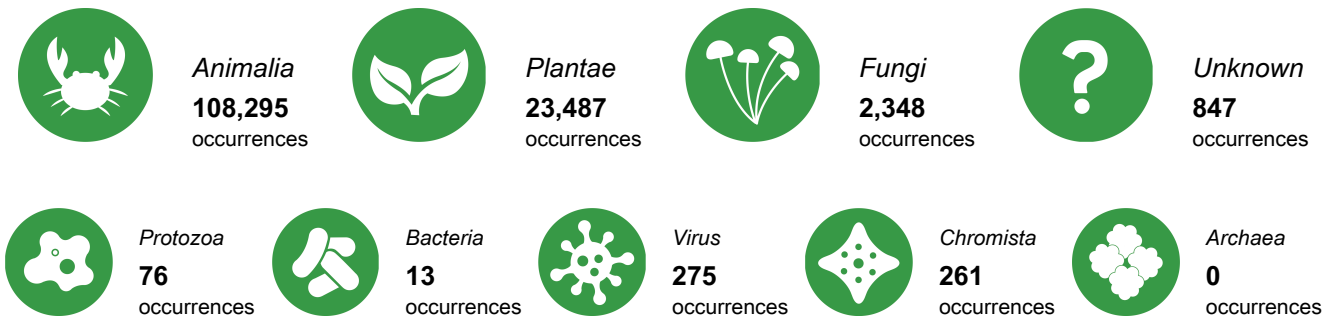
## North Macedonia

This report provides a series of summary charts, statistics and other details about the mobilization and use of open-access species data through the GBIF network, relating to users and participating institutions in North Macedonia. These metrics show status at the time of report generation, unless otherwise noted. Taken together, the elements of this report can help guide and measure progress toward the information needs for biodiversity research, as well as for national commitments on biodiversity and sustainable development.

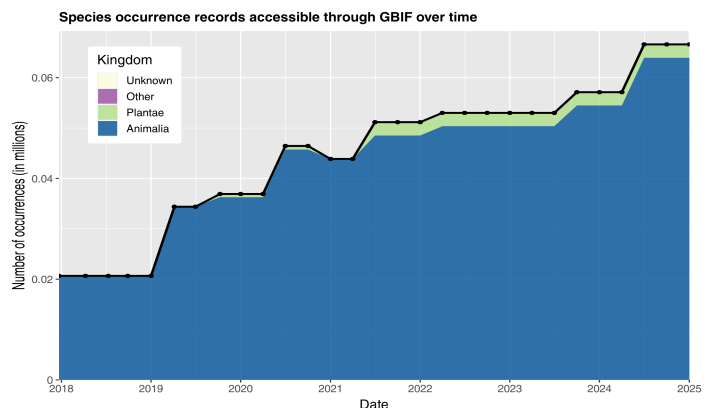
### ► Access and usage



### ► Data availability in North Macedonia



### ► Data mobilization

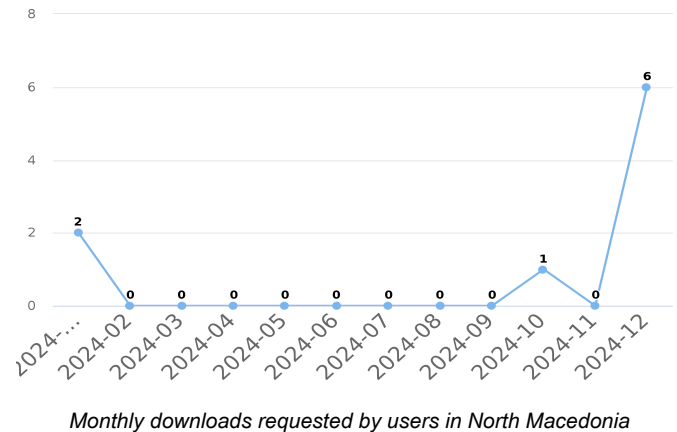
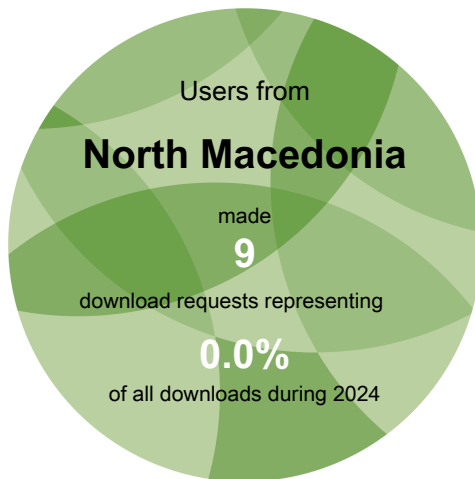


Number of records published by institutions in North Macedonia, categorized by kingdom



## Access and usage

### Data downloads on GBIF.org from users in North Macedonia



### Recent peer-reviewed articles using GBIF-mediated data by co-authors based in North Macedonia

The GBIF Secretariat maintains and reports on an ongoing literature tracking programme, giving priority to substantive uses of GBIF-mediated data in peer-reviewed literature while identifying the countries or areas of the authors' institutional affiliations. The citations below represent the five most recent journal articles with at least one co-author from North Macedonia.

Those interested in assisting the Secretariat in identifying additional peer-reviewed uses of GBIF-mediated data may forward relevant citations to [comms@gbif.org](mailto:comms@gbif.org).

Ciceu, Bălăcenoiu, de Groot *et al.* (2024) The ongoing range expansion of the invasive oak lace bug across Europe: current occurrence and potential distribution under climate change. *Science of The Total Environment*.

<https://doi.org/10.1016/j.scitotenv.2024.174950>

VALLADOLID, KARAOUZAS, IBRAHIMI *et al.* (2022) The Rhyacophila fasciata Group in Europe: Rhyacophila macedonica Karaouzas, Valladolid & Ibrahimi (n. sp.) from Greece, Kosovo, Republic of North Macedonia and Serbia (Trichoptera: Rhyacophilidae). *Zootaxa*.

<https://doi.org/10.11646/zootaxa.5125.2.1>

Soultan, Pavón-Jordán, Bradter *et al.* (2022) The future distribution of wetland birds breeding in Europe validated against observed changes in distribution. *Environmental Research Letters*.

<https://doi.org/10.1088/1748-9326/ac4ebe>

Pouteau, Thuiller, Hobohm *et al.* (2021) Climate and socio-economic factors explain differences between observed and expected naturalization patterns of European plants around the world. *Global Ecology and Biogeography*.

<https://doi.org/10.1111/geb.13316>

VALLADOLID, ARAUZO, CHERTOPRUD *et al.* (2021) The Rhyacophila fasciata Group in Europe: Rhyacophila fasciata Hagen 1859 and formerly synonymized species (Trichoptera: Rhyacophilidae), with new

description of *Rhyacophila fasciata* and *Rhyacophila septentrionis*  
McLachlan 1865 (stat. prom.).. *Zootaxa*.  
<https://doi.org/10.11646/zootaxa.4975.1.1>

See all research from this country or area  
[gbif.org/country/MK/publications/from](https://gbif.org/country/MK/publications/from)



## Data availability

### Total data available for selected taxonomic groups in North Macedonia



**Mammals**  
1,405  
occurrences



**Birds**  
70,146  
occurrences



**Bony fish**  
1,227  
occurrences



**Amphibians**  
409  
occurrences



**Insects**  
28,056  
occurrences



**Reptiles**  
1,203  
occurrences



**Molluscs**  
2,512  
occurrences



**Arachnids**  
780  
occurrences



**Flowering plants**  
22,558  
occurrences



**Ferns**  
253  
occurrences



**Gymnosperms**  
274  
occurrences



**Mosses**  
304  
occurrences



**Sac fungi**  
1,745  
occurrences



**Basidiomycota**  
597  
occurrences

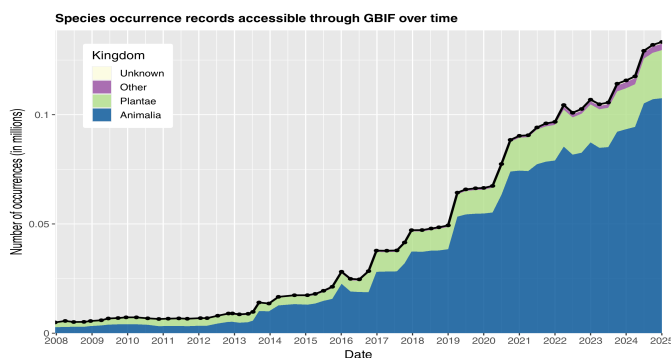
Mammals = Class *Mammalia*  
Birds = Class *Aves*  
Bony fish = Superclass  
*Osteichthyes* p.p.  
Amphibians = Class *Amphibia*

Insects = Class *Insecta*  
Reptiles = Class *Testudines*,  
*Sphenodontia*, *Squamata* &  
*Crocodylia*  
Molluscs = Phylum *Mollusca*

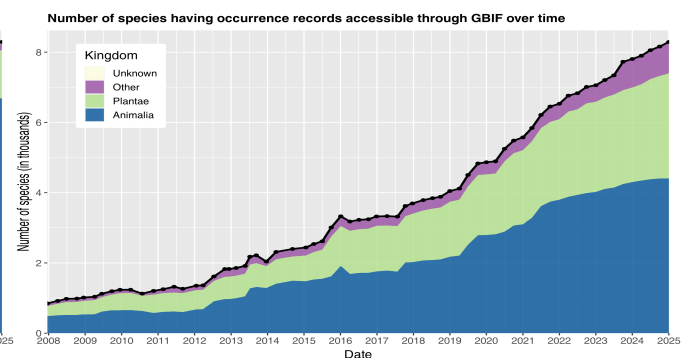
Arachnids = Class *Arachnida*  
Flowering plants = Phylum  
*Magnoliophyta*  
Gymnosperms = Superclass  
*Gymnospermae*

Ferns = Phylum *Pteridophyta*  
Mosses = Phylum *Bryophyta*  
Sac fungi = Phylum *Ascomycota*  
Basidiomycota = Phylum  
*Basidiomycota*

## Change over time in records about biodiversity in North Macedonia



Occurrence records available about species occurring in North Macedonia



Species for which at least one occurrence record is available in North Macedonia

### WHY MIGHT THE AMOUNT OF MOBILIZED DATA DECREASE?

Datasets are sometimes removed by publishers, but more often decreases in the number of records are due to the removal of duplicate records and datasets.

**SPECIES COUNTS** represent the number of binomial scientific names for which GBIF has received data records, organized as far as possible using synonyms recorded in key databases like the Catalogue of Life



## Most recent datasets from publishers in North Macedonia

Classic localities of endemic vascular plants from the Western Balkans. *Published by Macedonian Ecological Society*

<https://doi.org/10.15468/hf2e8b>

Classic localities of cave dwelling Arthropoda (excl. Coleoptera) from the Western Balkans. *Published by Macedonian Ecological Society*

<https://doi.org/10.15468/qhezg8>

Classic localities of terrestrial Mollusca from the Western Balkans. *Published by Macedonian Ecological Society*

<https://doi.org/10.15468/8gf8cu>

Distributional data on high altitude endemic taxa of vascular plants from western Balkans. *Published by Macedonian Ecological Society*

<https://doi.org/10.15468/4cfhz6>

Distributional data on high altitude endemic taxa of beetles (Coleoptera) from neighbouring border areas of western Balkans. *Published by Macedonian Ecological Society*

<https://doi.org/10.15468/mrj6pv>

Classic localities of fishes from the Western Balkans. *Published by Macedonian Ecological Society*

<https://doi.org/10.15468/m9na8d>

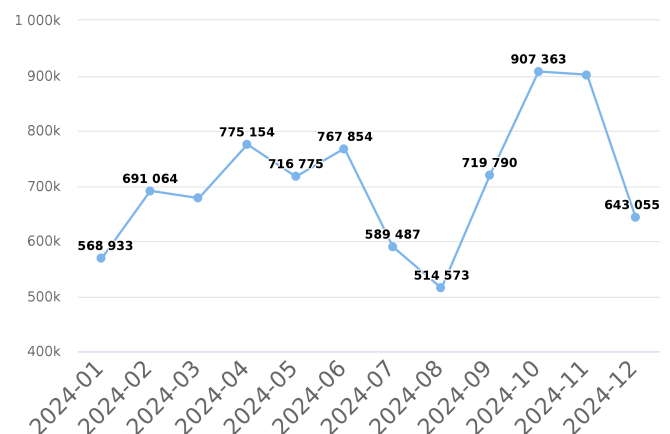
See all datasets from this country or area: [gbif.org/dataset/search?publishing\\_country=MK](https://gbif.org/dataset/search?publishing_country=MK)

## Newest publishers from North Macedonia

Macedonian Ecological Society

See all publishers from this country or area  
[gbif.org/publisher/search?country=MK](https://gbif.org/publisher/search?country=MK)

## Occurrence records downloaded from GBIF.org, published by institutions in North Macedonia

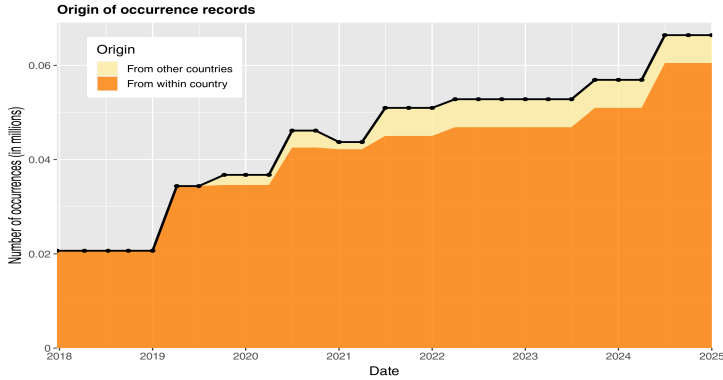


Number of occurrence records downloaded via  
GBIF.org published by institutions in North Macedonia

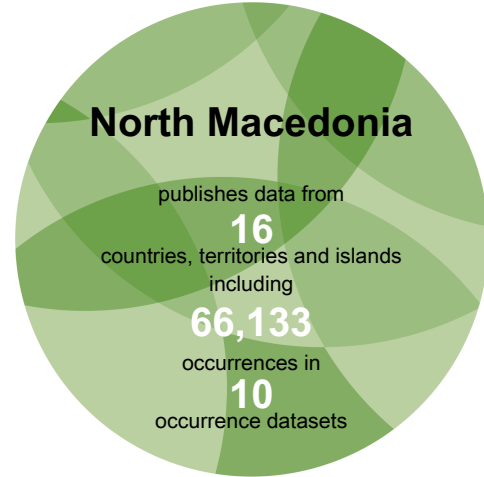


## Data mobilization

### Data sharing with country or area of origin by national institutions in North Macedonia



Data sharing with country or area of origin



The chart above shows the number of records shared over time by publishers within North Macedonia, with separate colours for records about species occurring within undefined and those occurring elsewhere.

### Top data contributors about biodiversity in North Macedonia

Rank	Country or area	No. of occurrences
1	North Macedonia	60,650
2	Netherlands	25,406
3	United States of America	11,629
4	Germany	5,748
5	United Kingdom	5,426
6	International organization or unknown country	4,306
7	Colombia	3,835
8	Spain	3,801
9	Austria	3,027
10	Poland	2,540

Table 1. Ranking of countries or areas contributing data about North Macedonia

### Top datasets contributing data about North Macedonia

EOD – eBird Observation Dataset. *58,865 occurrences in North Macedonia.* (Last updated 27 Sep 2024)

Observation.org, Nature data from around the World. *16,641 occurrences in North Macedonia.* (Last updated 3 Jan 2025)

iNaturalist Research-grade Observations. *9,021 occurrences in North Macedonia.* (Last updated 30 Dec 2024)

EBCC Atlas of European Breeding Birds. *4,552 occurrences in North Macedonia.* (Last updated 8 Sep 2017)

A global database for the distributions of crop wild relatives. *3,829 occurrences in North Macedonia.* (Last updated 9 Feb 2024)

See all contributing countries and areas or datasets: [gbif.org/country/MK/about](https://gbif.org/country/MK/about)