Panama
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 Panama. 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
Researchers from Panama contributed to 6 peer-reviewed articles citing GBIF use during 2023 and a total of 56 articles since 2008.

▶ Data availability in Panama
- Animalia: 6,475,320 occurrences
- Plantae: 448,462 occurrences
- Fungi: 37,309 occurrences
- Unknown: 17,621 occurrences
- Protozoa: 5,890 occurrences
- Bacteria: 23,794 occurrences
- Virus: 320 occurrences
- Chromista: 29,913 occurrences
- Archaea: 248 occurrences

▶ Data mobilization
Institutions from Panama published 1,174,846 new occurrence records during 2023 out of a total of 355,993,458 occurrence records added globally to GBIF.org.

Number of records published by institutions in Panama, categorized by kingdom
Access and usage

Data downloads on GBIF.org from users in Panama

Users from Panama made 110 download requests representing 0.0% of all downloads during 2023.

Recent peer-reviewed articles using GBIF-mediated data by co-authors based in Panama

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 Panama.

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

https://doi.org/10.1007/s10531-023-02730-8

Pirani, Arias, Charles et al. (2023) A high-quality genome for the slender anole (Anolis apletophallus), an emerging model for field-studies of tropical ecology and evolution. *G3: Genes, Genomes, Genetics.*
https://doi.org/10.1093/g3journal/jkad248

https://doi.org/10.3390/insects14080714

Shanee, Tirira, Aquino et al. (2023) Geographic Distribution of Owl Monkeys. *Owl Monkeys.*
https://doi.org/10.1007/978-3-031-13555-2_2

Kelly, Gordon, Schwarzkopf et al. (2023) Invasive wild deer exhibit environmental niche shifts in Australia: Where to from here?. *Ecology and Evolution.*
https://doi.org/10.1002/ece3.10251

See all research from this country or area gbif.org/country/PA/publications/from
### Data availability

**Total data available for selected taxonomic groups in Panama**

- **Mammals**
  - Total occurrences: 64,037

- **Birds**
  - Total occurrences: 5,792,620

- **Bony fish**
  - Total occurrences: 72,916

- **Amphibians**
  - Total occurrences: 43,268

- **Insects**
  - Total occurrences: 262,086

- **Reptiles**
  - Total occurrences: 37,608

- **Molluscs**
  - Total occurrences: 99,323

- **Arachnids**
  - Total occurrences: 18,222

- **Flowering plants**
  - Total occurrences: 390,346

- **Ferns**
  - Total occurrences: 31,069

- **Gymnosperms**
  - Total occurrences: 882

- **Mosses**
  - Total occurrences: 9,076

- **Sac fungi**
  - Total occurrences: 21,670

- **Basidiomycota**
  - Total occurrences: 10,645

---

### Change over time in records about biodiversity in Panama

**Occurrence records available about species occurring in Panama**

**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 Panama

Caracterización de Flora y Fauna en el área del proyecto “Baco Solar” en Chiriquí, Panamá.
Published by Enel Panamá
https://doi.org/10.15468/2ndfq9
See all datasets from this country or area: gbif.org/dataset/search?publishing_country=PA

Newest publishers from Panama

Enel Panamá

Occurrence records downloaded from GBIF.org, published by institutions in Panama

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

See all publishers from this country or area gbif.org/publisher/search?country=PA
Data mobilization

Data sharing with country or area of origin by national institutions in Panama

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

Top data contributors about biodiversity in Panama

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country or area</th>
<th>No. of occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Panama</td>
<td>5,686,843</td>
</tr>
<tr>
<td>2</td>
<td>United States of America</td>
<td>1,037,365</td>
</tr>
<tr>
<td>3</td>
<td>United Kingdom</td>
<td>91,993</td>
</tr>
<tr>
<td>4</td>
<td>Netherlands</td>
<td>31,734</td>
</tr>
<tr>
<td>5</td>
<td>International organization or unknown country</td>
<td>30,970</td>
</tr>
<tr>
<td>6</td>
<td>Mexico</td>
<td>22,620</td>
</tr>
<tr>
<td>7</td>
<td>Estonia</td>
<td>19,089</td>
</tr>
<tr>
<td>8</td>
<td>Germany</td>
<td>15,521</td>
</tr>
<tr>
<td>9</td>
<td>Australia</td>
<td>14,606</td>
</tr>
<tr>
<td>10</td>
<td>Spain</td>
<td>11,773</td>
</tr>
</tbody>
</table>

Table 1. Ranking of countries or areas contributing data about Panama

Top datasets contributing data about Panama

EOD – eBird Observation Dataset. 5,627,959 occurrences in Panama. (Last updated 20 Aug 2023)

Tropicos MO Specimen Data. 192,270 occurrences in Panama. (Last updated 27 Dec 2023)

NMNH Extant Specimen Records (USNM, US). 189,876 occurrences in Panama. (Last updated 2 Jan 2024)

iNaturalist Research-grade Observations. 151,222 occurrences in Panama. (Last updated 2 Jan 2024)

Snow Entomological Museum Collection. 51,583 occurrences in Panama. (Last updated 2 Jan 2024)

See all contributing countries and areas or datasets: gbif.org/country/PA/about