

... free and open access to biodiversity data

GBIF and GEOSS

The **Global Biodiversity Information Facility (GBIF)** works to make the world's biodiversity data freely accessible and universally available to all via the Internet by

- **developing a biodiversity information infrastructure and informatics tools:** GBIF has an established and evolving information architecture that is implemented using standards for interoperability developed within the biodiversity (www.tdwg.org) and broader geospatial (www.opengeospatial.org) communities.
- **promoting digitisation and sharing of primary scientific biodiversity data:** GBIF species records provide a historical baseline for monitoring biodiversity change over time. Many GBIF-shared records are from natural history museums that have been collecting data for more than 250 years.

The **Group on Earth Observations (GEO)** is dedicated to developing and instituting a **Global Earth Observation System of Systems (GEOSS)**. Of the nine GEOSS societal benefit areas, GBIF can most significantly contribute to “understanding, monitoring and conserving Biodiversity” as well as to the Health, Water, Agriculture, Ecosystems, Disasters, Climate, and Energy societal benefit areas.

One of the **GEOSS Interoperability Process Pilot Projects** uses **GBIF data** to explore the impact of climate change on biodiversity. This project demonstrates the power of linking biodiversity and climate change research infrastructures to enable scientists to conduct new, broad-scale ecological analyses. By providing a basis for predicting impacts of climate change on biodiversity, these analyses provide an essential benchmark against which to forecast the future.

Ecological models like this are built using the infrastructure being developed by GEOSS and drawing upon the information infrastructure and data available via GBIF (data.gbif.org).

GBIF mobilises scientific biodiversity data for many purposes, including decision-making, research endeavours and public use. <http://data.gbif.org>

GBIF is a network of data providers who retain ownership and control of their data, but who have linked their databases using common standards. Linked databases provide a more robust representation of biodiversity than any single dataset.

Through the GBIF network these digital biodiversity data are made openly and freely available on the Internet for everyone. GBIF supports open source software, open access to data and information exchange with countries of origin. <http://www.gbif.org>

GBIF may be of particular benefit to developing countries that need free and open access to the wealth of primary biodiversity data held in developed country institutions.

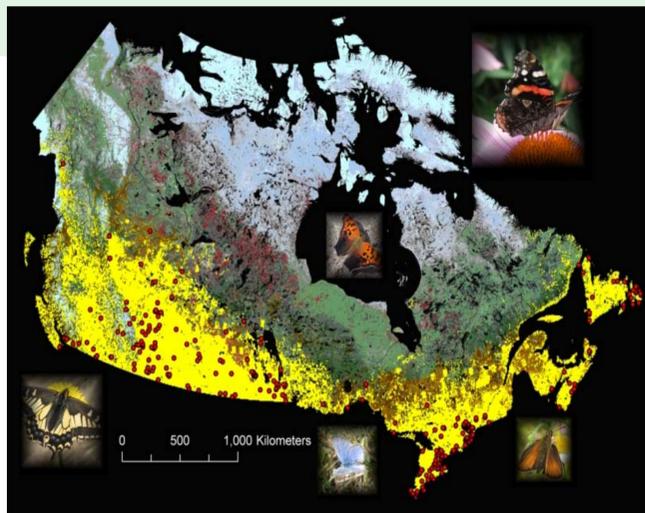
GBIF is a dynamic, growing partnership. All countries and international organisations who want to work together to mobilise scientific biodiversity data are invited to become GBIF Participants.

GBIF invites institutions and individuals to support scientific research, the work of the biodiversity conventions, and open access to scientific data by sharing data via the GBIF network. See www.gbif.org/DataProviders/HowTo

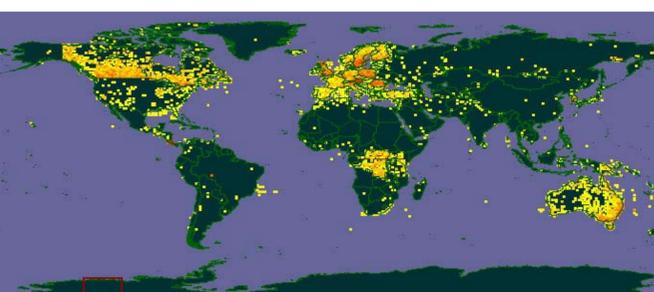
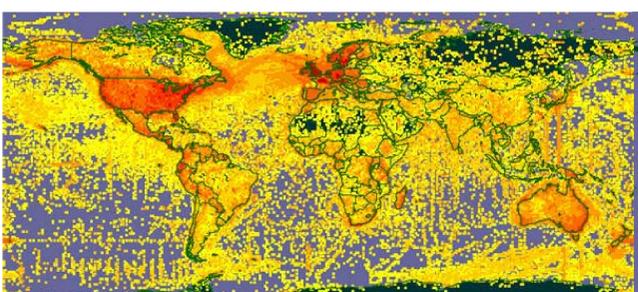
*GBIF supports the formation of a **Biodiversity Observation Network** under GEO to monitor the status and trends of the world's biological resources.*



Speyeria atlantis (W. H. Edwards, 1862)
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Kerr, J., H. Kharouba and D. Currie, 2007. The macroecological contribution to global change solutions. Science 316: 1581 - 1584.



Left: Density map of all georeferenced occurrence records (81,645,159) available via the GBIF data portal as of 2007.10.13
Middle: Density map of 2,275,154 georeferenced occurrence records for Lepidoptera (butterflies and moths) available via the GBIF data portal as of 2007.10.13
Right: Inachis io L. (Peacock butterfly). Photo © Derek Robertson. Used with permission.