

Task group on mobilization and use of biodiversity data for research and policy on human diseases

The discovery, access and appropriate use of primary biodiversity data are critical for research on human health, zoonotic and vector-borne diseases. This field represents a particular type of use of species occurrence data published by institutions around the world through the Global Biodiversity Information Facility, and the demand for broader data in this sector is repeatedly indicated in the scientific literature, e.g. “[vector](#)” and “[disease](#)”.

Through GBIF.org, researchers are able to locate, download and freely use a large volume of data showing where occurrence of vector, host and reservoir species have been recorded (through observations, specimen collection, DNA sampling and other sources of evidence) and shared by the GBIF network of data publishers. These records support models exploring the existing patterns, assessing risks, and predicting the potential spread of human diseases. GBIF.org does not currently distinguish between occurrences associated with a particular disease, nor does it enable filtering of such data on vectors, reservoirs, and hosts known to be associated with diseases either globally or within countries. While human-related, medical data are aggregated and handled elsewhere, the World Health Organization’s [Global vector control response 2017–2030](#) calls for additional efforts to streamline the complementary biodiversity data on human diseases:

Entomological, epidemiological and intervention data are often managed separately without linkage, resulting in insufficient information on the impact of vector control interventions on entomological parameters and pathogen transmission... Database development and management experience is needed to ensure linkage of entomological, epidemiological and intervention data into a comprehensive monitoring and evaluation platform that ideally incorporates geo-referencing. Skills in information and communication technologies as well as behavioural change communication and community and local authority engagement are also required.

As part of a broader global strategy on improving the completeness, relevance and fitness for use of biodiversity data, GBIF is convening a task group on mobilization and use of biodiversity data for research and policy on human diseases aiming to improve the coverage and representation of such data, supporting the variety of uses required and requested by this research community. The task group will capture the best available experiences, information and recommendations related to the major data holders and users, prioritize the data targets by diseases, taxa, and regions, document improvement needs in existing content, standards, vocabularies, and GBIF services, and suggest improvements in the functionality of GBIF.org for domain-specific needs. While the focus of the task group will be on the needs of research, it may also consider the best means of organizing data useful for policy needs such as biodiversity indicators for IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) and the post-2020 global biodiversity framework, Essential Biodiversity Variables (EBVs), Sustainable Development Goals (SDGs), in particular SDG3 Ensure healthy lives and promote well-being for all at all ages and its relevant targets, as well as the One Health and Planetary Health agendas.

In addition to improving coverage and use of the data types supported by GBIF today, an important consideration of the task group will be the requirements to identify the data mobilization targets for species occurrences and other types of data relating to human diseases, such as species interactions, traits, sequence- and multimedia-based data, and links to external biomedical and human data. This does not presuppose that all such data will be directly accessible through GBIF.org, but may suggest functionalities that would clearly link data shared through GBIF with other data sources in the future.

The Task Group is established with **six objectives**:

1. Help design and identify sources and contacts for data **mobilization campaigns** to improve data coverage to help research on human health (*Pilot campaign I: malaria and yellow fever: mosquitos*).
2. Screen existing GBIF uses and consult with the professional community to define a clear **set of questions** that can be (better) addressed with (more and better) data mediated by GBIF.
3. Help review and communicate **messages** to support data mobilization campaigns and to promote GBIF use and data curation.
4. Evaluate **fitness for use** of data content, standards, vocabularies, and GBIF services to support research on vector borne diseases and suggest improvements for future development of GBIF.
5. Continue **prioritization and scoping** of activities on diseases and taxa for the task group
6. Identify key actors and possible funding sources suitable to support data mobilization and to enhance use of biodiversity data in research on human diseases, as the reports from the task group group is expected to guide **funding** priorities for mobilization of relevant data.

Mandate

1. Develop a schedule and activities for the Task Group
2. Liaise with other experts and define the data mobilization targets and data use priorities essential for the research community.
3. Liaise with on-going initiatives and projects to document best practices using data for research on wild hosts, vectors, and reservoirs of human diseases.
4. Analyze roles of biodiversity data and suggest improvements for GBIF's current and potential contribution to reaching societal goals, including Sustainable Development Goal 3: Ensure healthy lives and promote well-being for all at all ages.
5. Consult with and encourage experts in management and use of biodiversity data on human diseases to document and share repeatable tools and data management solutions in active use by the community, and to document the shortcomings and needs.
6. Consult widely and determine key questions that need to be addressed for community- specific needs on data availability and data use, including improvements in discovery and access, data mobilization, data and metadata publishing, data complementarity, and data processing at institutional, national, regional, and global

levels, community specific benefits for data sharing and solutions to promote open data.

7. Identify key actors and possible funding sources suitable to support data mobilization and to enhance data use of biodiversity data in research on human diseases, as the reports from the Vectors group is expected to guide funding priorities for mobilization of relevant data.
8. Accommodate feedback from the community into summarized recommendations.

Outputs

The main deliverable will be a set of practical guidelines and recommendations around the issues defined under the Terms of Reference presented in the form of short reports to the Executive Secretary of GBIF every six months, starting from 31 December, 2020.

Timeline

The task group will operate for a period of 24 months, starting from July 2020 after the members have been confirmed by the GBIF Secretariat. A first report will be presented by 31 December 2020, the second by 30 June 2021, the third by 31 December 2021, and final report by 30 June 2022. Summary findings from the intermediate and final reports will be presented to the GBIF Governing Board in 2021 and 2022, and will be published at GBIF.org. The duration of the task group can be extended or reduced according to progress in joint discussions between group members and GBIF Secretariat. The task group members may decide to stay available for communications with the GBIF Secretariat, and following the delivery of the final report, are free to prepare publication(s) based on this work.

<i>Timeline</i>	<i>Activity</i>
Summer 2020	Candidate members agree to work on the Task group. Election of first chair. GBIF Secretariat approves candidate members of the Task Group.
September 2020	Teleconference meeting to refine the work plan and identify priority directions.
October 2020	Establishment of the Task Group and announcement at GBIF.org.
November-December 2020	Launch of data mobilization campaign.
December 2020	Revision of first period of task group operation, first report, electing the next chair
February 2021	Revision and prioritization of available funding opportunities.
June 2021	Assessment of the data mobilization campaign, revision of the priorities and scoping for data mobilization calls. Second report, election of next chair.
September 2021	Possible start for funded calls for data mobilization grants or other forms of funded campaigns.

December 2021	Revision of the data mobilization campaign and calls. Data use landscape and fitness for use recommendations. Third report, election of next chair.
June 2022	Writing final report, group dissolved, or extension decision.
30 June 2022	Final report delivered.

Mode of operation

The task group will deliver its recommendations to the GBIF Governing Board through the Secretariat. The group will be coordinated by, and report through, the Scientific Officer at the GBIF Secretariat. The group will mostly operate remotely through email and associated collaborative tools such as Google Docs and conference calls; when international meetings and travel become possible, the group may hold up to two face-to-face meetings per year. Travel, accommodation and other essential costs related to these meetings will be met from the GBIF Work Programme, subject to available resources. The task group may arrange face-to-face meetings as satellites to other events of interest, or use those opportunities to hold additional meetings.

Task Group membership

The task group shall be comprised of initially **seven (7) members** reflecting global representation and the variety of research approaches. Additional members could be invited and added to the group, if agreed by the group and approved by the current group chair and GBIF S. The Task Group is expected to consult widely within the research community and the GBIF community, including GBIF stakeholders. The GBIF Secretariat will provide support for this consultation. The task group is intended to be the core team that will author the reports, but will consult widely with other experts, institutions, initiatives & projects. The Chair is elected for each of the six-month periods; rotation is expected, but the same person can be re-elected.

GBIF Secretariat contact

Dmitry Schigel (dschigel@gbif.org), GBIF Scientific Officer

Appendix

Task group membership

Chair (July-December 2020)

- **[Marianne Sinka](#)**
Senior Postdoctoral Researcher, [Oxford Long-Term Ecology Lab, University of Oxford](#), United Kingdom

Members

- **[Florence Fouque](#)**
Scientist, Focal Point for Vectors, Research For Implementation Unit, [The Special Programme for Research and Training in Tropical Diseases, World Health Organization](#), Switzerland
- **[Quentin Groom](#)**
Senior Research Scientist, Biodiversity Informatics, [Meise Botanic Garden](#), Belgium
- **[Sylvie Manguin](#)**
Full Research Professor/Director, [Institut de Recherche pour le Développement \(IRD\)](#), France
- **[Thomas Orrell](#)**
Research Biologist, [Smithsonian Institution, National Museum of Natural History](#), | Chair, [GBIF Science Committee](#), United States
- **[Paloma Helena Fernandes Shimabukuro](#)**
Researcher, [Instituto René Rachou, Fundação Oswaldo Cruz](#), Brazil
- **[Carlos Zambrana-Torrel](#)**
Associated Vice President for Conservation and Health, [EcoHealth Alliance](#), United States
- **[Dmitry Schigel](#)**, *Task group coordinator*
Scientific Officer, GBIF Secretariat, Denmark