Task Group on Data Fitness for Use in Research on Invasive Alien Species

The discovery, access and appropriate use of primary biodiversity data are critical for invasive alien species (IAS) research. This field represents a very significant use of species occurrence data published by institutions around the world through the Global Biodiversity Information Facility. Of 407 peer-reviewed studies citing use of GBIF as a source of data during 2015, no fewer than 69 journal papers dealt with invasive alien species.[1]

Through GBIF.org, researchers are able to locate, download and freely use a large volume of data showing where IAS occurrences have been recorded (both through observation and specimen collection) and shared by the GBIF network of data publishers. These records relate both to the native and introduced ranges, an important facility when researchers create models predicting the potential spread of IAS based on environmental niches. However, GBIF.org does not currently distinguish between occurrences inside or outside a species' native range, nor does it enable filtering of data on species known to be invasive either globally or within countries.

As part of a broader global strategy on fitness for use of biodiversity data, GBIF is convening a Task Group on Data Fitness for Use in Research on Invasive Alien Species (DFFU-IAS) **aiming** to help improving the fit of data on invasive alien species to the variety of significant uses required and requested by this research community. DFFU-IAS will capture the best available experiences, document limitations in existing 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 indicators of progress towards Aichi Biodiversity Target 9 and the development of Essential Biodiversity Variables (EBVs).

An important consideration of the Task Group will be the requirements to combine occurrence data with other types of data relating to IAS: for example, checklists of species known to be invasive in particular countries, information on species traits and pathways of introduction. 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.

The activities of the Task Group will be informed by ongoing work in GBIF to improve the functionality of its data services by enabling users to filter for relevant data fit for particular purposes.

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

1. Based on domain-specific data use experience, to make recommendations on improving data availability and data use, data mobilization, data and metadata publishing, and data processing. The Task Group is expected to deliver a vision of the ideal data serving the

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[1] See http://www.gbif.org/mendeley/invasives for an up to date list of IAS-related papers using data accessed through GBIF.org

needs of the IAS research community, as well as past, current and expected data modifications, cleaning steps, analyses and visualization needs. Among the outcomes, specific recommendations are expected in the report, defining how GBIF-mediated data could be filtered to deliver optimal subsets for particular IAS research applications.

2. To document best practices from ongoing initiatives using IAS-related data, and to collect information on repeatable tools (such as data filters) and data management solutions. This will involve consulting with existing IAS related initiatives, and the broader biodiversity data community, for example through surveys, direct engagement with relevant academic societies and attendance at conferences. The aim should be to bring together a wide range of relevant stakeholders, and catalyse activities around use of biodiversity data for research on IAS.

3. Based on information from GBIF Secretariat about current developments relating to quality and fitness for use, to make recommendations for GBIF.org improvements on enhancing existing functions and current activites, and to provide guidance in the development of training and outreach materials to help data users to build upon the currently available resources and to share the new developments.

Mandate

1. Develop a schedule and activities for the Task Group

2. Liaise with other experts and define the data use priorities essential for the IAS research community.

3. Liaise with on-going initiatives and projects to document best practices initiatives using data for research on IAS

4. Consult with and encourage IAS experts to document and share repeatable tools and data management solutions

5. Provide guidance, where relevant, in the development of training and outreach materials to help data users to build upon the currently available resources and to share the new developments

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, and data processing at institutional, national, regional, and global levels.

7. Accommodate feedback from the IAS community into summarised recommendations

8. Develop recommendations for improvements in GBIF.org functionality by creating targeted data use profiles.

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 a report to the Executive Secretary of GBIF, on or before 1 November, 2016.

Timeline

The Task Group will operate for a period of seven months, and is expected to begin in March 2016 after the members have been confirmed by the Executive Committee. A first report will be presented to GBIF Secretariat by 15 August 2016. The first report will be presented to the 23rd GBIF Governing Board in October 2016, and the final report, after consulting with GBIF

community to collect feedback, will be delivered to GBIF S by 1 November 2016, after which the Task Group shall be dissolved.

Timeline	Activity
February 2016	GBIF EC approves candidate members of the Task Group. Candidate members invited.
March 2016	Establishment of the Task Group. Wireframes for the reports, identification of the priority directions. Initial teleconference. Communication and writing tasks distributed among the Task Group members.
April 2016	First teleconference meeting of FFU members to collate initial inputs from Task Group members collated and to refine the work plan. Key stakeholders, GBIF, TDWG and IAS community invited to contribute: consultation open.
July 2016	Comments / inputs from key stakeholders and broader community collated into the first (intermediate) report. First in-person meeting of the Task Group to collectively draft first round report (Europe).
August 15, 2015	First report presented to GBIF S.
October 2015	Consultation closed. Revise report based on inputs. Second in-person meeting of the Task Group to write up the final report (Australia).
November 1, 2015	Final report delivered.

Mode of operation

The Task Group will deliver its recommendations to the GBIF Governing Board through the Secretariat. The Task Group will be coordinated by, and report through, the Programme Officer for Content Analysis and Use at the GBIF Secretariat. The Task Group shall mostly operate remotely through email and associated collaborative tools such as wiki, Skype, Google Doc, and conference calls; but will hold up to two face-to-face meetings focussed on consolidating and writing its report. Travel, accommodation and other essential costs related to these meetings will be met from the budget for the GBIF Work Programme 2014-16. The task force may arrange the face-to-face meetings as satellite to other events of interest[1, 2], or use those opportunities to hold additional meetings.

Task Group membership

The Task Group shall be comprised of **6 members** reflecting global representation and the variety of IAS research schools, taking into account also gender balance. The members are invited based on the priority list of candidates offered by the GBIF S and the Chair of the Task Group for the approval by the GBIF Executive Committee. The Task Group is expected to consult widely within the IAS research community and GBIF community, including GBIF stakeholders and the GBIF Secretariat will provide support for this consultation in the form of mailing lists, discussion groups, etc. The task group is intended to be the core team that will author the report, but will consult widely with other experts, institutions, initiatives & projects. The Task Group is chaired by Associate Professor **Melodie A. McGeoch** of the Monash University, Australia.

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