

manIAS: A community-driven data model and data exchange format for the management of invasive alien species and wildlife

Lien Reyserhove[‡], Jasmijn Hillaert[‡], Tim Adriaens[‡], Peter Desmet[‡], Bram D'hondt[‡], Quentin J Groom[§], Damiano Oldoni[‡]

[‡] Research Institute for Nature and Forest (INBO), Brussels, Belgium

[§] Meise Botanic Garden, Meise, Belgium

Corresponding author: Lien Reyserhove (lien.reyserhove@inbo.be), Damiano Oldoni (damiano.oldoni@inbo.be)

Abstract

Invasive alien species (IAS) are recognised as one of the major threats to biodiversity. The [European Union \(EU\) Regulation 1143/2014](#) on the prevention of introduction and spread of invasive alien species imposes an obligation on Member States to develop management responses against a list of IAS of Union Concern and requires reporting on those interventions. However, the actors involved in IAS management are typically diverse and include authorities, managers, businesses and non-governmental organizations (NGOs). Reporting on management actions, if performed at all, is often crude and does not capture essential information. Data on management are heterogeneous both in quality and format as well as what information is captured. They are recorded using a plethora of tools, are managed in data silos and not openly available.

Here, we propose a community-driven data model and data exchange format for IAS and wildlife management data, called [manIAS](#) (*management of Invasive Alien Species*, Fig. 1). This was drafted in two consecutive workshops (Oldoni et al. 2022), building on the experience of the managerial community, combined with the existing european network of wildlife professionals (ENETWILD) standard (Body et al. 2020) for management reporting in the framework of animal health. We feel the development of such a data model is necessary and can bring multiple benefits within and outside the IAS management community. First, the data model can create awareness with data providers and project managers on the minimum quality standards for reporting on IAS management such as the target species, the management objective, the methods used, the effort spent, the results of the action and any encountered non-target effects. Second, the data exchange format will allow for easy aggregation of management data across taxa, regions, management actors and projects. Such exchanges of data on management, for example through visualisations, are necessary for running coordinated management programmes. Thirdly, it will ease the reporting on management for the EU IAS Regulation since

authorities will have to spend less time in collecting and standardizing data from different actors. Lastly, the standardisation will allow more straightforward analysis of the effectiveness of management methods and the efficiency of control programmes.

Keywords

invasive species, IAS Regulation, open data, standard

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Author contributions

Initial draft: TA, DO; review & editing: LR, TA, BD, PD, QG, JH, DO; conceptualization: DO, JH, BD, LR, TA; funding acquisition: TA, PD; project administration: DO.

Conflicts of interest

References

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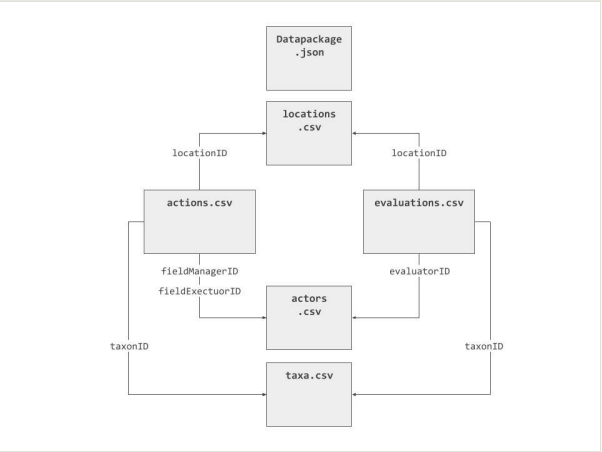


Figure 1.
Draft version of the manIAS data model and format. The model captures management actions on taxa and their effectiveness as evaluations. Actions and evaluations are carried out by actor(s) at a location. The data can be formatted as a Frictionless Data Package, with the csv files, their fields and relationships documented in a data package .json file.