Conference Abstract

OPEN

ACCESS

Mangal: An open infrastructure for ecological interactions

Steve Vissault[‡], Dominique Gravel[‡], Timothée Poisot[§]

‡ Université de Sherbrooke, Sherbrooke, Canada § Université de Montréal, Montréal, Canada

Corresponding author: Steve Vissault (s.vissault@yahoo.fr)

Received: 10 Jun 2019 | Published: 18 Jun 2019

Citation: Vissault S, Gravel D, Poisot T (2019) Mangal: An open infrastructure for ecological interactions. Biodiversity Information Science and Standards 3: e37037. https://doi.org/10.3897/biss.3.37037

Abstract

BISS Biodiversity Information Science and

Interactions among species is at the heart of ecology. Despite their importance, studying ecological interactions remains difficult due to the lack of standard information and the disparity of formats in which ecological interactions are stored (Poisot et al. 2015). Historically, ecologists have used matrices to store interactions, which tend to easily decontextualize interactions from fieldwork when metadata is missing. To overcome these limitations, we designed Mangal - a global ecological interactions database - which serialize ecological interaction matrices into nodes (e.g. taxon, individuals or population) and edges. This database offers the opportunity to store information on traits, environment and homogenized taxonomy through unique taxonomic identifiers such as Encyclopedia of Life (EOL), Catalogue of Life (COL), Global Biodiversity Information Facility (GBIF) and Integrated Taxonomic Information System (ITIS). Here, we present the new release of Mangal including more than 120,000 interactions, 1,300 networks from 172 scientific publications distributed across the globe. We explore the content, illustrate case studies and present templates in order to contribute to this open infrastructure. For this purpose, we developed and maintained two packages/clients from popular scientific languages: R and Julia to facilitate data access, curation and network deposits on the database (Source code).

© Vissault S et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Keywords

ecological networks, web services, open platform, Julia, R

Presenting author

Steve Vissault

Presented at

Biodiversity_Next 2019

Funding program

FONCER - BIOS² Training program

References

 Poisot T, Baiser B, Dunne J, Kéfi S, Massol F, Mouquet N, Romanuk T, Stouffer D, Wood S, Gravel D (2015) mangal - making ecological network analysis simple. Ecography 39 (4): 384-390. <u>https://doi.org/10.1111/ecog.00976</u>