

Atlantic flower–invertebrate interactions: A data set of occurrence and frequency of floral visits

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Abstract

Encounters between flowers and invertebrates are key events for the functioning of tropical forests. Assessing the structure of networks composed of the interactions between those partners leads to a better understanding of ecosystem functioning and the effects of environmental factors on ecological processes. Gathering such data is, however, costly and time-consuming, especially in the highly diverse tropics. We aimed to provide a comprehensive repository of available flower–invertebrate interaction information for the Atlantic Forest, a South American tropical forest domain. Data were obtained from published works and “gray literature,” such as theses and dissertations, as well as self-reports by co-authors. The data set has ~18,000 interaction records forming 482 networks, each containing between one and 1061 interaction links. Each network was sampled for about 200 h or less, with few exceptions. A total of 641 plant genera within 136 different families and 39 orders were reported, with the most abundant and rich families being Asteraceae, Fabaceae, and Rubiaceae. Invertebrates interacting with these plants were all arthropods from 10 orders, 129 families, and 581 genera, comprising

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2419 morphotypes (including 988 named species). Hymenoptera was the most abundant and diverse order, with at least six times more records than the second-ranked order (Lepidoptera). The complete data set shows Hymenoptera interacting with all plant orders and also shows Diptera, Lepidoptera, Coleoptera, and Hemiptera to be important nodes. Among plants, Asterales and Fabales had the highest number of interactions. The best sampled environment was forest (~8000 records), followed by pastures and crops. Savanna, grasslands, and urban environments (among others) were also reported, indicating a wide range of approaches dedicated to collecting flower–invertebrate interaction data in the Atlantic Forest domain. Nevertheless, most reported data were from forest understory or lower strata, indicating a knowledge gap about flower–invertebrate interactions at the canopy. Also, access to remote regions remains a limitation, generating sampling bias across the geographical range of the Atlantic Forest. Future studies in these continuous and hard-to-access forested areas will yield important new information regarding the interactions between flowers and invertebrates in the Atlantic Forest. There are no copyright restrictions on the data set. Please cite this data paper if the data are used in publications and teaching events.

KEYWORDS

ecological networks, florivory, flower visitors, focal plant observation, food web, herbivory, mutualism, neotropical forests, plant–animal interactions, pollen survey, pollination, tropical forest interactions

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The complete data set is available as Supporting Information and is also available in Zenodo at <https://doi.org/10.5281/zenodo.6330088>.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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