A global database of ant species abundances

Heloise Gibb  
*La Trobe University*

Rob R. Dunn  
*NC State University*

Nathan J. Sanders  
*Københavns Universitet*

Blair F. Grossman  
*La Trobe University*

Manoli Photakis  
*La Trobe University*

See next page for additional authors

Follow this and additional works at: https://scholarworks.uvm.edu/casfac

Part of the Climate Commons

**Recommended Citation**


This Article is brought to you for free and open access by the College of Arts and Sciences at ScholarWorks @ UVM. It has been accepted for inclusion in College of Arts and Sciences Faculty Publications by an authorized administrator of ScholarWorks @ UVM. For more information, please contact donna.omalley@uvm.edu.
Authors

This article is available at ScholarWorks @ UVM: https://scholarworks.uvm.edu/casfac/63
A global database of ant species abundances


1 Department of Biology, Environment and Evolution, La Trobe University, Melbourne, 3086, Victoria, Australia
2 Department of Ecology, North Carolina State University, Raleigh, North Carolina 27695 USA
3 Center for Macroecology, Evolution, and Climate, Natural History Museum of Denmark, University of Copenhagen, Universitetsparken 15, DK-2100, Copenhagen Ø, Denmark
4 Department of Environmental Science, University of Girona, Montilivi Campus s/n, 17071, Girona, Spain
5 Naturhistorisches Museum Bern, Bernaerstrasse 15, 3005, Bern, Switzerland
6 CSIRO Ecosystem Sciences, Tropical Ecosystems Research Centre, PMB 44, Winnellie, Northern Territory 0822 Australia
7 Departamento de Eutología y Conservación de la Biodiversidad, Estación Biológica de Doñana, Facultad de Ciencias Naturales y Exactas, Universidad del Valle, Cali, Colombia
8 Departamento de Botánica, Universidade Federal Pernambuco, Avenida Prof. Moraes Rego s/n, Cidade Universitária, Pernambuco, Brazil
9 Department of Earth, Ocean and Ecological Sciences, University of Liverpool, Liverpool, L69 3GP United Kingdom
10 Departamento de Biologia, Universidade Federal do Amazonas-UFAM, Manaus, Amazonas, Brazil
11 Department of Earth, Ocean and Ecological Sciences, University of Liverpool, Liverpool, L69 3GP United Kingdom
12 Department of Zoology and Entomology, Centre for Invasion Biology, University of Pretoria, Pretoria 0002 South Africa
13 Institut de Recherche sur la Biologie de l’Insecte et Département, d’Aménagement du Territoire Université, Češké Budějovice, 370 05 Czech Republic
14 Institute for Environmental Sciences, University Koblenz-Landau, FortstraÃe 7, 76829, Landau in der Pfalz, Germany
15 Department of Life Sciences, University of Parma, Parco Area delle Scienze 11/A, Parma 43124 Italy
16 Société d’Histoire Naturelle Alcide-d’Orbigny, 57 rue de Gergovie, 63170, Aubière, France
17 Instituto de Ciencias Biológicas, Escuela Politécnica Nacional, Avenida Ladrón de Guevara, E11253, Quito, Ecuador
18 Harvard Forest, Harvard University, 324 North Main Street, Petersham, Massachusetts 01366 USA
19 Departments of Biology and Environmental Conservation, University of Massachusetts, Morrill Science Center and Holdsworth Hall, 611 North Pleasant Street, Amherst, Massachusetts 01003 USA
20 Faculty of Arts, Business and Law, Tropical Forests and People Research Centre, University of the Sunshine Coast, 90 Sippy Downs Drive, Sippy Downs, Queensland 4556 Australia
21 Institute of Entomology, Biology Centre of Academy of Sciences Czech Republic and Faculty of Science, University of South Bohemia, Branišovská 31, České Budějovice, 370 05 Czech Republic
22 Forest Ecology and Conservation Group, Imperial College London, Silwood Park Campus, Buckhurst Road, Ascot, SL7 7PY United Kingdom
23 Department of Biology, University of Utah, Salt Lake City, Utah 84112 USA
24 Entomology, California Academy of Sciences, San Francisco, California, USA
25 Western Ecological Research Center, U.S. Geological Survey, San Diego Field Station 4165 Spruce Road, Suite 200, San Diego, California 92101 USA
26 Appalachian Laboratory, University of Maryland Centre for Environmental Science, Frostburg, Maryland 21532 USA
27 Department of Biology, University of Vermont, Burlington, Vermont 05405 USA
28 Astron Environmental Services, Perth, Western Australia, Australia
29 Department of Environment and Agriculture, Curtin University, G.P.O. Box U1987, Perth, Western Australia 6845 Australia

Manuscript received 5 September 2016; revised 22 November 2016; accepted 29 November 2016. Corresponding Editor: William K. Michener.
Abstract. What forces structure ecological assemblages? A key limitation to general insights about assemblage structure is the availability of data that are collected at a small spatial grain (local assemblages) and a large spatial extent (global coverage). Here, we present published and unpublished data from 51,388 ant abundance and occurrence records of more than 2,693 species and 7,953 morphospecies from local assemblages collected at 4,212 locations around the world. Ants were selected because they are diverse and abundant globally, comprise a large fraction of animal biomass in most terrestrial communities, and are key contributors to a range of ecosystem functions. Data were collected between 1949 and 2014, and include, for each geo-referenced sampling site, both the identity of the ants collected and details of sampling design, habitat type, and degree of disturbance. The aim of compiling this data set was to provide comprehensive species abundance data in order to test relationships between assemblage structure and environmental and biogeographic factors. Data were collected using a variety of standardized methods, such as pitfall and Winkler traps, and will be valuable for studies investigating large-scale forces structuring local assemblages. Understanding such relationships is particularly critical under current rates of global change. We encourage authors holding additional data on systematically collected ant assemblages, especially those in dry and cold, and remote areas, to contact us and contribute their data to this growing data set.

Key words: abundance; ants; database; disturbance; Formicidae; geo-referenced; habitat; local assemblage; occurrence; pitfall trap; Winkler trap.