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Dataset Open

Global Wood Density Database v.2 (GWDD v.2)

Creators

- [Fischer, Fabian Jörg^{1, 2, 3}](#)
[Chave, Jerome²](#)
[Zanne, Amy⁴](#)
[Jucker, Tommaso¹](#)
[Fajardo, Alex^{5, 6, 7}](#)
[Fayolle, Adeline^{8, 9}](#)
[Ferreira de Lima, Renato Augusto¹⁰](#)
[Vieilledent, Ghislain^{11, 12, 13}](#)
[Beeckman, Hans¹⁴](#)
[Hubau, Wannas^{14, 15}](#)
[De Mil, Tom^{16, 14}](#)
[Wallenus, Daniel¹⁴](#)
[Aldana, Ana María¹⁷](#)
[Alvarez-Davila, Esteban¹⁸](#)
[Alves, Luciana¹⁹](#)
[Apgaua, Deborah Mattos Guimarães²⁰](#)
[Arcanjo, Fátima^{21, 22}](#)
[Bastin, Jean-Francois²³](#)
[Bilous, Andrii²⁴](#)
[Birnbaum, Philippe²⁵](#)
[Blyshchuk, Volodymyr²⁴](#)
[Borah, Joli²⁶](#)
[Boukili, Vanessa^{27, 28}](#)
[Camarero, J. Julio²⁹](#)
[Casas Caro, Luisa Fernanda³⁰](#)
[Cazzolla Gatti, Roberto³¹](#)
[Chambers, Jeffrey Q³²](#)
[Chimbioputo Fabiano, Ezequiel³³](#)
[Choat, Brendan³⁴](#)
[Conti, Georgina³⁵](#)
[Cornwell, Will³⁶](#)
[Dar, Javid Ahmad^{37, 38}](#)
[Das, Ashesh Kumar³⁹](#)
[Dobler, Magnus⁴⁰](#)
[Dougabka, Dao⁴¹](#)
[Edwards, David^{42, 43}](#)
[Evans, Robert⁴⁴](#)
[Falster, Daniel⁴⁵](#)
[Fearnside, Philip⁴⁶](#)
[Flores, Olivier⁴⁷](#)
[Fyllas, Nikolaos⁴⁸](#)
[Gerard, Jean^{49, 50}](#)
[Goodman, Rosa⁵¹](#)
[Guibal, Daniel^{49, 50}](#)
[Henao-Diaz, Luis Francisco^{17, 52}](#)
[Hervé, Vincent⁵³](#)
[Hietz, Peter⁵⁴](#)
[Homeier, Jürgen^{55, 56}](#)
[Ibanez, Thomas, Paul⁵⁷](#)
[Ilic, Hugo^{58, 59}](#)
[Jansen, Steven⁶⁰](#)
[Kalita, Rinku Moni^{61, 39}](#)
[Kenzo, Tanaka⁶²](#)
[Kindermann, Liana⁴⁰](#)
[Kothandaraman, Subashree^{63, 64}](#)
[Kotowska, Martyna^{65, 66}](#)
[Kubota, Yasuhiro^{67, 68}](#)
[Langbour, Patrick^{49, 50}](#)
[Lawson, James⁶⁹](#)
[de Lima, André Luiz Alves⁷⁰](#)
[Link, Roman Mathias⁷¹](#)
[Linstädter, Anja⁴⁰](#)
[López, Rosana⁷²](#)
[Macinnis-Ng, Cate⁷³](#)
[Magnago, Luiz⁷⁴](#)
[Martin, Adam Robert⁷⁵](#)
[Matheny, Ashley Michelle⁷⁶](#)
[McCarthy, James⁷⁷](#)
[Miller, Regis B⁷⁸](#)
[Nath, Arun Jyoti⁷⁹](#)
[Nelson, Bruce⁸⁰](#)
[Njana, Marco⁸¹](#)
[Nogueira, Euler Melo^{82, 83}](#)
[Oliveira, Alexandre⁸⁴](#)
[Oliveira, Rafael⁸⁵](#)
[Olson, Mark⁸⁶](#)
[Onoda, Yusuke⁸⁷](#)
[Paul, Keryn⁸⁸](#)
[Piotto, Daniel⁸⁹](#)
[Radtke, Phil⁹⁰](#)
[Razafindratsima, Onja⁹¹](#)
[Ramananantoandro, Tahiana⁹²](#)
[Read, Jennifer⁹³](#)
[Richardson, Sarah⁷⁷](#)
[de la Riva, Enrique G⁹⁴](#)
[Rodriguez Reyes, Oris^{95, 96}](#)
[Rolim, Samir⁸⁹](#)
[Rolo, Victor⁹⁷](#)
[Rosell, Julieta A.⁹⁸](#)
[Salguero-Gomez, Roberto^{99, 100}](#)
[Santini, Nadia^{101, 102}](#)
[Schuldt, Bernhard^{71, 103}](#)
[Schwendenmann, Luitgard¹⁰⁴](#)
[Sellin, Arne¹⁰⁵](#)
[Staples, Timothy¹⁰⁶](#)
[Stevenson, Pablo R¹⁷](#)
[Sundarapandian, Somaiah¹⁰⁷](#)
[van der Sande, Masha¹⁰⁸](#)
[Thibaut, Bernard¹⁰⁹](#)
[Tng, David²⁰](#)
[Torezan, Jose Marcelo²²](#)
[Villanueva, Boris^{110, 111}](#)
[Weiskittel, Aaron¹¹²](#)
[Wells, Jessie¹¹³](#)
[Wright, S Joseph¹¹⁴](#)
[Zieminska, Kasia¹¹⁵](#)

Description

The Global Wood Density Database v.2

The Global Wood Density Database v.2 (GWDD v.2) is a collection of 109,626 taxonomically standardized wood density records and 15,093 additional bark density records. Data include measurements at different levels of aggregation (individual, species) and both

georeferenced records and values from the literature. For a full description of the database, please see the corresponding manuscript. (*Fischer et al. 2026. Beyond species means – the intraspecific contribution to global wood density variation. New Phytol.* <https://doi.org/10.1111/nph.70860>). It includes and supersedes the GWDD v.1 (*Zanne et al. 2009, https://doi.org/10.5061/dryad.234*).

When using the GWDD v.2 in your work, please cite *Fischer et al. 2026* as well as this repository using the corresponding DOI (10.5281/zenodo.16919509).

If you would like to report an issue or suggest improvements for future updates of the GWDD, please do so on github: <https://github.com/fischer-fjd/GWDD/issues>

Aggregated wood density data

We provide pre-aggregated wood density data, with wood density estimates at species, binomial species and genus level. Wood density estimates are derived from hierarchical (random effects) models and provided both as simple species mean values (*wsg_est*) and as species mean values for trunks (*wsg_est_trunk*) and branches (*wsg_est_branch*) separately. In addition, we provide raw wood density means (*wsg_raw*), but we do not recommend using them for practical purposes due to outliers for poorly sampled species.

gwddagg_v2.x_species: pre-aggregated wood density values for 17,261 species, including infraspecific epithets; comprises 16,828 taxonomically resolved species well as 433 values with uncertain taxonomic status

gwddagg_v2.x_binomial: pre-aggregated wood density values for 16,905 binomial species

gwddagg_v2.x_genus: pre-aggregated wood density values for 3,198 genera

Raw wood density data

In addition, we also provide the underlying raw wood density database. This collection contains one metadata file and raw data files in .csv format. Since special characters (e.g., in the references) can be distorted by operating systems when reading in .csv files, we also provide all data in .RData format, which can be loaded into R with the `load()` function.

columns_gwdd_v2.x: metadata for all the columns included in the GWDD v.2

gwdd_v2.x: the GWDD v.2, including all 109,626 wood density records

gwdd_v2.x_withbark: the GWDD v.2, including all 109,626 wood density records and 15,093 additional bark density records

Files

gwdd_v2.2.csv

Files (171.8 MB)

Name	Size
gwdd_v2.2.csv md5:646454bd0ebcecb201fe081d0efde8fe	73.4 MB

Name	Size
gwdd v2.2.RData md5:97a1f050d5cfdb283e7b2d493f85eddc	4.3 MB
gwdd v2.2 withbark.csv md5:b93ed0e08d757a8156d25e5c8d87b914	85.8 MB
gwdd v2.2 withbark.RData md5:40315033f5f0e2b31dd935e884e89605	4.2 MB
gwddagg v2.2 binomial.csv md5:2ce721e791fca2b5eb17c31f81a59228	1.7 MB
gwddagg v2.2 genus.csv md5:f9e7ccb930ffa22a433ec2f19af035bb	233.6 kB
gwddagg v2.2 species.csv md5:a8f0317b62e9412df00bffc329015c89	2.1 MB

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Version v1 [10.5281/zenodo.16919510](https://doi.org/10.5281/zenodo.16919510)

Aug 21, 2025

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Citation

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Style

APA

Export

JSON

Technical metadata

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Modified

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