

You've got questions, but  
need data!

Accessing trait data from TRY, BIEN, and  
other sources

There are a number of great trait databases (and datasets) available

- Many journals (and even governments!) are making it mandatory to publish data
- New open source repositories are making it easier than ever to access this data
- Let's talk about a few databases/sets (that may be useful for your projects)...

Databases (multiple combined datasets)

# The TRY plant traits database

<https://www.try-db.org/TryWeb/Home.php>

6.9 million records

148,000 plants



# TRY

- Pros
  - Lots of data!
  - Can separate by species and/or traits
- Cons
  - Data can hard to sort through
  - Data access is kind of a pain
  - Not all data is openly available

# The Botanical Information and Ecology Network (BIEN)

<http://bien.nceas.ucsb.edu/bien/>

206 million records

486,000 plants



# BIEN

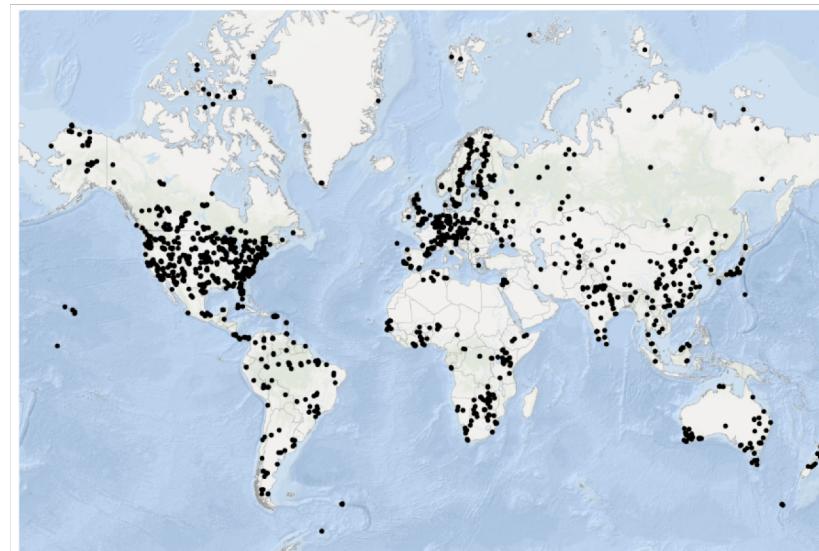
- Pros
  - Tons of data
  - Data can be accessed via an R package or web interface
    - Lots of great tools on the BIEN website!
- Cons
  - Data is mostly occurrence
  - Not as many traits a TRY

# Fine-Root Ecology Database (FRED)

<https://roots.ornl.gov/>

105,000 records

300 root traits



# FRED

- Pros
  - Lots of data on roots
  - Good spatial coverage
  - Seems easily accessible
- Cons
  - Only roots

# Grass Portal

<http://www.grassportal.org/index.html>

Grass traits, names, locations!



# Datasets

# GLOPNET

<https://www.nature.com/articles/nature02403#supplementary-information>

2,600 records

All leaf traits (SLA, nutrients, and gas exchange)

Article | Published: 22 April 2004

## The worldwide leaf economics spectrum

Ian J. Wright , Peter B. Reich [...] Rafael Villar

*Nature* **428**, 821–827 (22 April 2004) | Download Citation 

# Maire et al. (2016)

<https://datadryad.org/resource/doi:10.5061/dryad.j42m7>

2,400 records

All leaf traits (SLA, nutrients, and gas exchange)

Also includes climate and soil data

Data from: Global effects of soil and climate on leaf photosynthetic traits and rates

Maire V, Wright IJ, Prentice IC, Batjes NH, Bhaskar R, van Bodegom PM, Cornwell WK, Ellsworth D, Niinemets Ü, Ordoñez A, Reich PB, Santiago LS

Date Published: June 20, 2016

DOI: <https://doi.org/10.5061/dryad.j42m7.2>



# China Plant Traits Database

<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecy.2091>

1,215 species

All leaf traits (SLA, nutrients, and gas exchange)

Boreal - tropical



Data Papers | Free Access |

The China Plant Trait Database: toward a comprehensive regional compilation of functional traits for land plants

Han Wang , Sandy P. Harrison, Iain C. Prentice, Yanzheng Yang, Fan Bai, Henrique F. Togashi, Meng Wang, Shuangxi Zhou, Jian Ni

First published: 20 November 2017 | <https://doi.org/10.1002/ecy.2091> | Cited by: 4

# Leaf Carbon Exchange (LCE) Database

<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecy.1992>

98 species

Leaf traits (SLA, nutrients, and gas exchange)

Basic plant size information

Boreal - tropical



Data Papers | Free Access |

LCE: leaf carbon exchange data set for tropical, temperate, and boreal species of North and Central America

Nicholas G. Smith , Jeffrey S. Dukes

First published: 20 August 2017 | <https://doi.org/10.1002/ecy.1992> | Cited by: 2

Corresponding Editor: W. K. Michener.