Plant traits in ecology

Fig. 4. Predicted geographic trends in maximum leaf size. Each grid blue are those where there may be no effective thermal constraint on

Test (map) theoretical predictions of key traits
Wright et al. (2018) Science
Who collects trait data (in ecology)?
Who collects trait data (in ecology)?

- Community ecologists
- Ecosystem modellers
- Conservation biologists
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- Community ecologists
- Ecosystem modellers
- Conservation biologists

Who archives, shares or standardizes their trait data?
Austraits is about collaboration.
Austraits is about collaboration.

To build a comprehensive dataset of plant traits for the Australian flora

GALLAHER + WRIGHT
Austraits is about collaboration.

Trait data collated from published & peer-shared datasets

GALLAGHER + WRIGHT + 88 DATA CUSTODIANS
Austrafts is about collaboration.

Trait data mined from taxonomic treatments & species descriptions
GALLAGHER + WRIGHT + 88 DATA CUSTODIANS + ALLEN + 7 HERBARIA + CSIRO

e.g.
- Flora of Australia
- Flora of South Australia
- WA Florabase
- Flora of NSW
- EUCLID, WATTLE
AustraItS is about collaboration.

Make the process transparent and the data easily accessible for all users.

GALLAGHER + WRIGHT + 88 DATA CUSTODIANS + ALLEN + 7 HERBARIA + CSIRO + FALSTER + ANDREW
Austraits is about collaboration.
Austraights is about collaboration.

TRANSPARENT?

- Script every step and build a workflow pipeline
Austraits is about collaboration.

TRANSPARENT?

- Script every step and build a workflow pipeline

  e.g. Harmonizing trait names and units
Austraights is about collaboration.

TRANSPARENT?

- Provide standardized metadata and configuring
Austraits is about collaboration.

TRANSPARENT?

- Provide standardized metadata and configuring

**source:**
- key: Butler_2011
- bibtype: Article
- author: Don W. Butler, Sean M. Gleason, Ian Davidson, Yusuke Onoda, Mark Westoby
- year: 2011
- title: 'Safety and streamlining of woody shoots in wind: an empirical study across 39 species in tropical Australia'
- journal: New Phytologist
- volume: 193
- pages: 137--149
- publisher: Wiley-Blackwell
- url: http://dx.doi.org/10.1111/j.1469-8137.2011.03887.x
Austraits is about collaboration.

TRANSPARENT?

- Provide standardized metadata and configuring traits

**people:**
- name: Don Butler
  institution: Queensland Herbarium
  role: collector
- name: Mark Westoby
  institution: Macquarie University
  role: lab_leader
- name: Rachael Gallagher
  institution: Macquarie University
  role: contributor

**dataset:**
- year_collected_start: 2008
- year_collected_end: 2008
- description: LMA, height and leaf size data for 43 species collected by Don Butler
- collection_type: field
- sample_age_class: adult
- sampling_strategy: unknown
- original_file: Butler_2011.pdf
- notes: .na
Austraits is about collaboration.

TRANSPARENT?

- Document all changes made to the raw data

Version control via GitHub
Austraits is about collaboration.

TRANSPARENT?

- Make the data easily accessible for all users
  - Public release of Austraits v.1.0
  - Publish a data descriptor (in prep)
  - R package
  - Online portal → ATLAS OF LIVING AUSTRALIA
What data is currently in Austraits?

- 330,000 trait observations across 17,000 species

- 120 individual datasets

- 102 raw traits: 65 numerical, 37 categorical
Key traits: maximum height (m)
Challenges?

1. MAKE CLEANING EFFORTS COMMUNAL
Challenges?

1. MAKE CLEANING EFFORTS COMMUNAL
2. SHARING EXPERTISE & APPROACHES

Steering Committee & Technical Team

Ecological Society of America Meeting, New Orleans August 4-5 APPLY!
Thanks

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Australian Government
Australian Research Council