



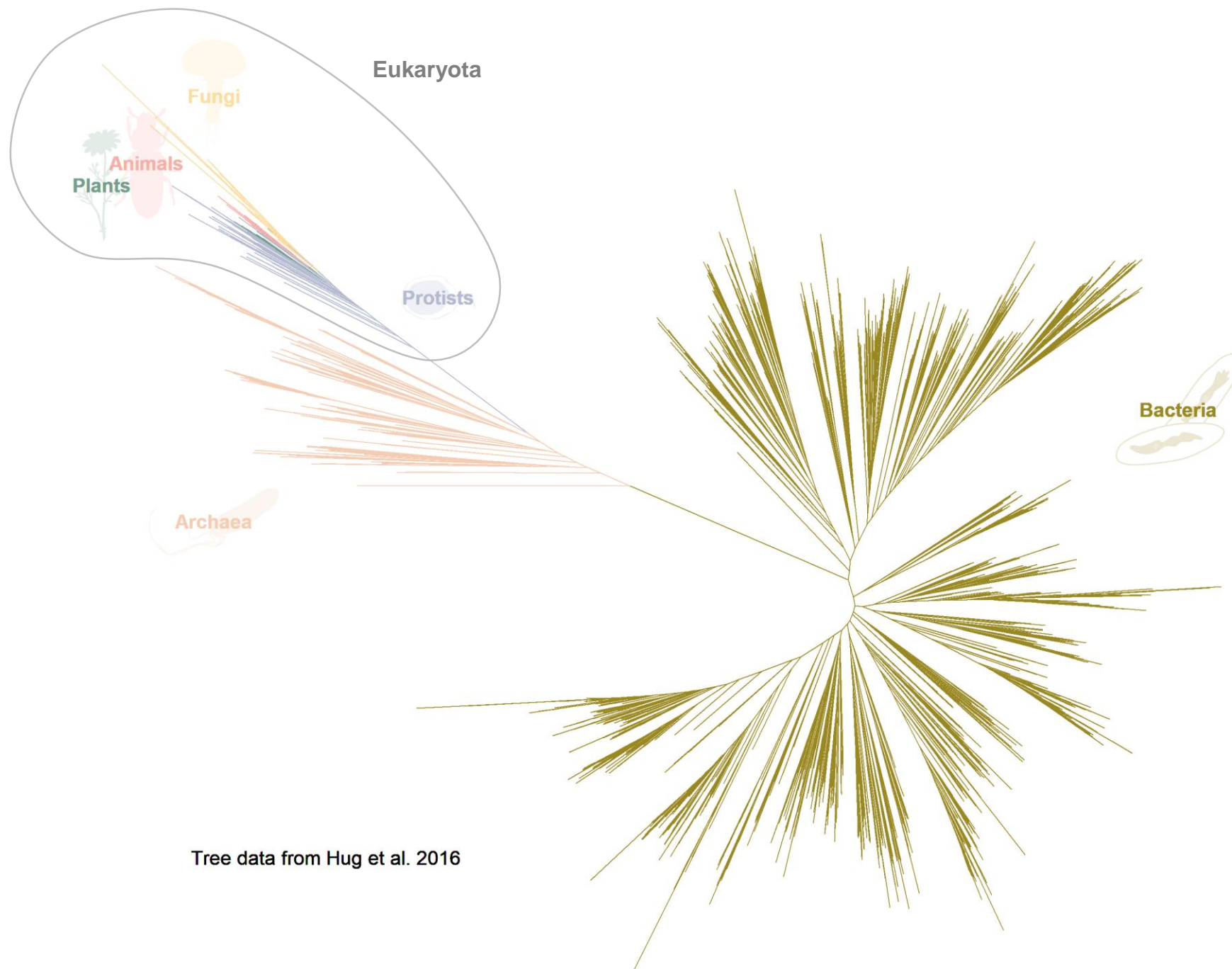
Let's talk about fungi

 @RowenaCHill

Royal Botanic Gardens
Kew

 Queen Mary
University of London

What are fungi?



Tree data from Hug et al. 2016

They're everywhere



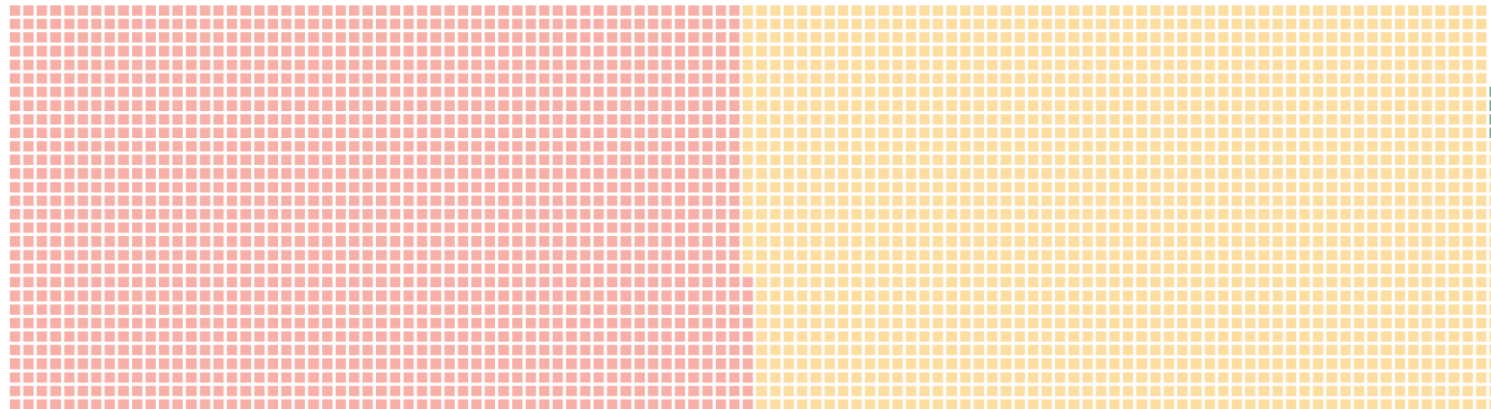
They're everywhere

Total **described** diversity

■ = 100,000 species



Total **estimated** diversity



They interact with everything

Roots and Associated Fungi Drive Long-Term Carbon Sequestration in Boreal Forest

K. E. Clemmensen^{1,*}, A. Bahr², O. Ovaskainen³, A. Dahlberg^{1,4}, A. Ekblad⁵, H. Wallander², J. Stenlid¹, R. D. Finlay¹, D. A. ...

[+ See all authors and affiliations](#)

Science 29 Mar 2013:
Vol. 339, Issue 6127, pp. 1615-1618
DOI: 10.1126/science.1231923

Article | [Open Access](#) | Published: 07 November 2019

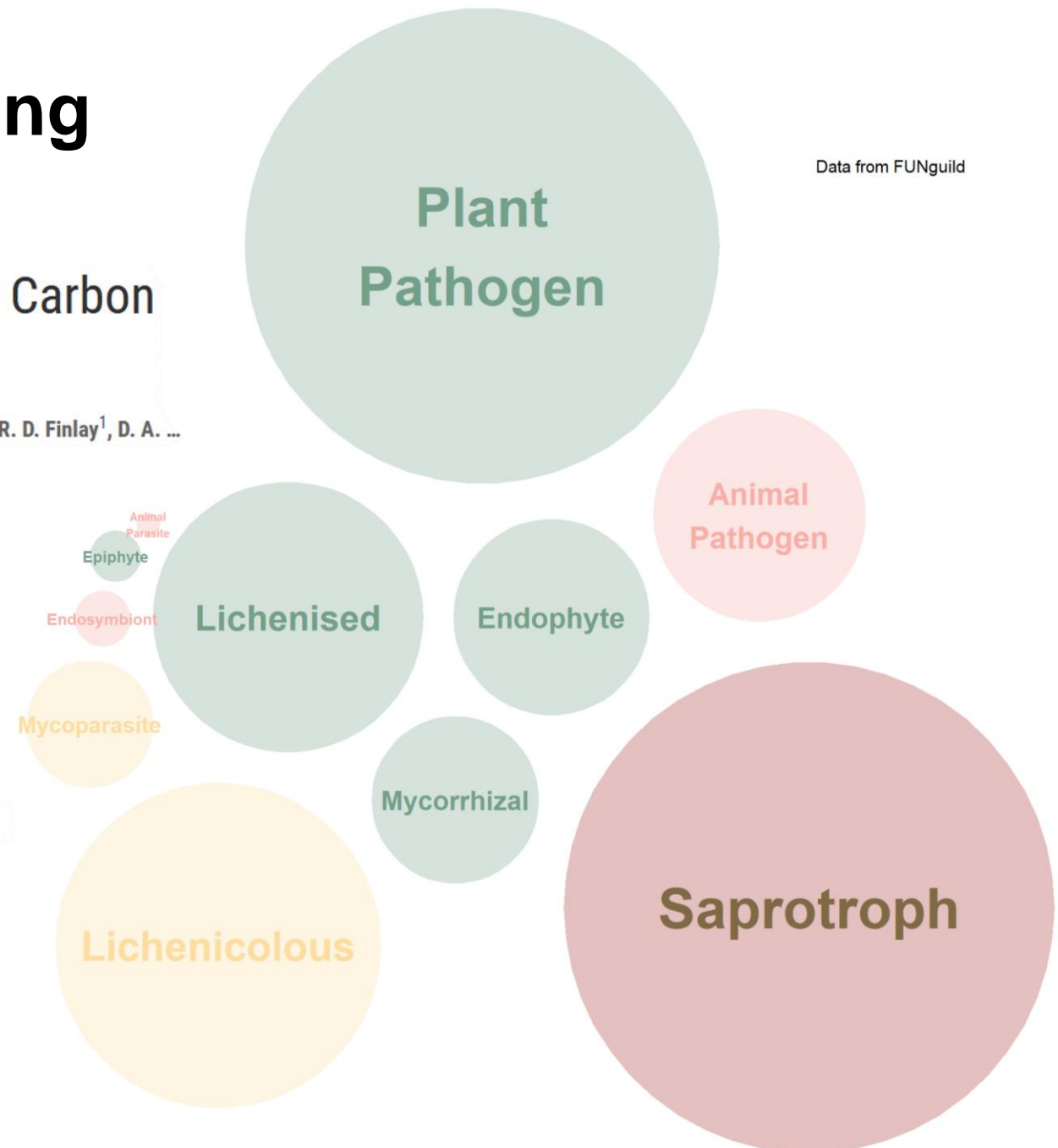
Global mycorrhizal plant distribution linked to terrestrial carbon stocks

Nadejda A. Soudzilovskaia , Peter M. van Bodegom, César Terrer, Maarten van't Zelfde, Ian McCallum, M. Luke McCormack, Joshua B. Fisher, Mark C. Brundrett, Nuno César de Sá & Leho Tedersoo

Nature Communications 10, Article number: 5077 (2019) | [Cite this article](#)

11k Accesses | 8 Citations | 249 Altmetric | [Metrics](#)

Data from FUNguild



They're indispensable to us

Soy sauce and miso Alcohol Dairy

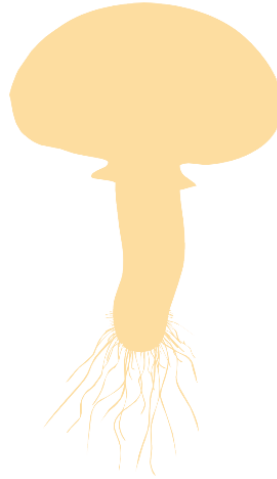
Edible fungi **Food**

Breadmaking Meat substitutes

Statins **Medicine**

Immunosuppressants

Antibiotics



Biofuels Leather and cotton processing

Manufacturing and industry

Paper manufacturing Plastics and biomaterials

Washing detergents

Bioremediation

Environmental management

Agricultural biocontrol

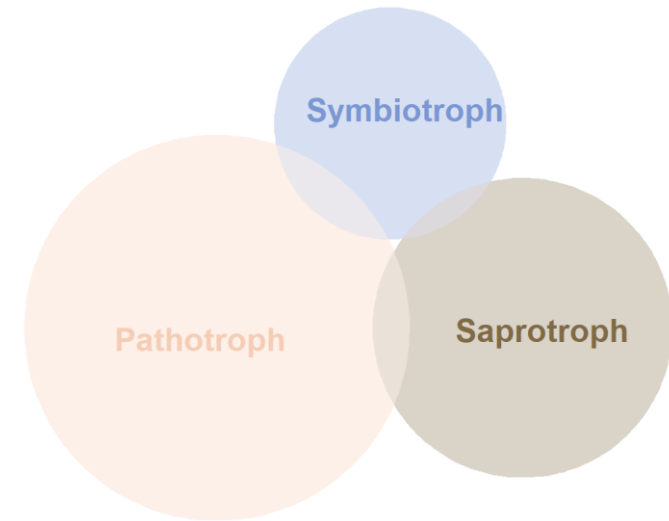
They're also a ticking time bomb

Causes of published disease-driven animal and plant extinction/extirpation events



Data from Fisher et al. 2012

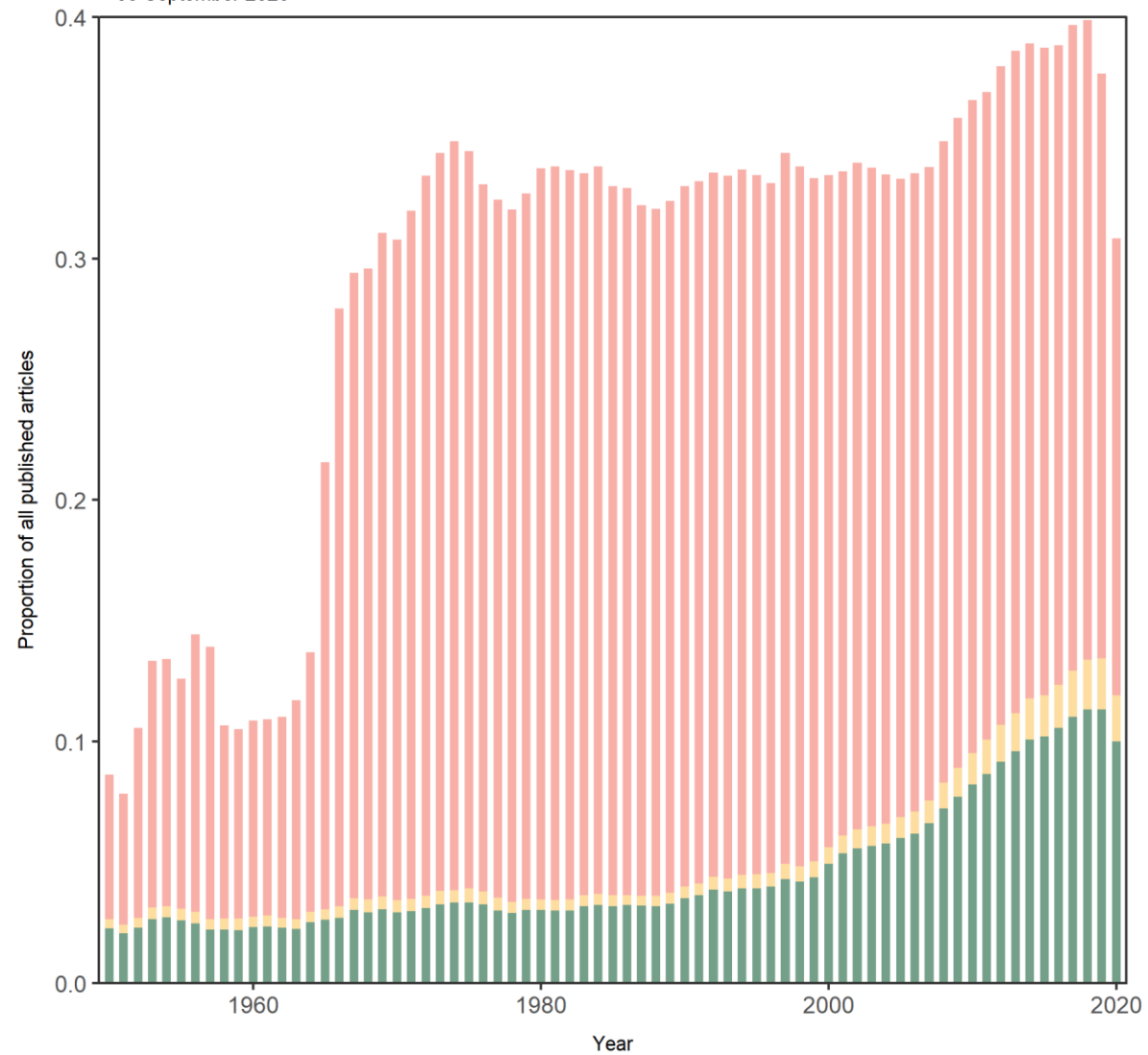
Data from FUNguild



What's the issue?

Representation of the eukaryote kingdoms in Europe PMC

03 September 2020





Names - common, scientific, regions etc...



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2 September 2020

☐ Fungi *kingdom* (343)



☐ Plantae *kingdom* (43556)



☐ Animalia *kingdom* (76457)



“

No one will protect what they don't care about; and **no one will care about what they have never experienced**

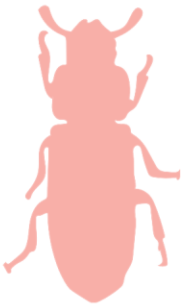
- David Attenborough

”

Number of UK undergraduate courses for eukaryote kingdoms



25



172

Number of mentions in undergraduate biology module descriptions

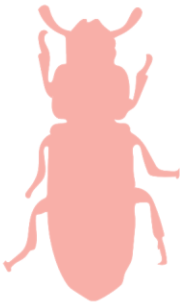


82



8

Birmingham
Belfast
Liverpool
Nottingham

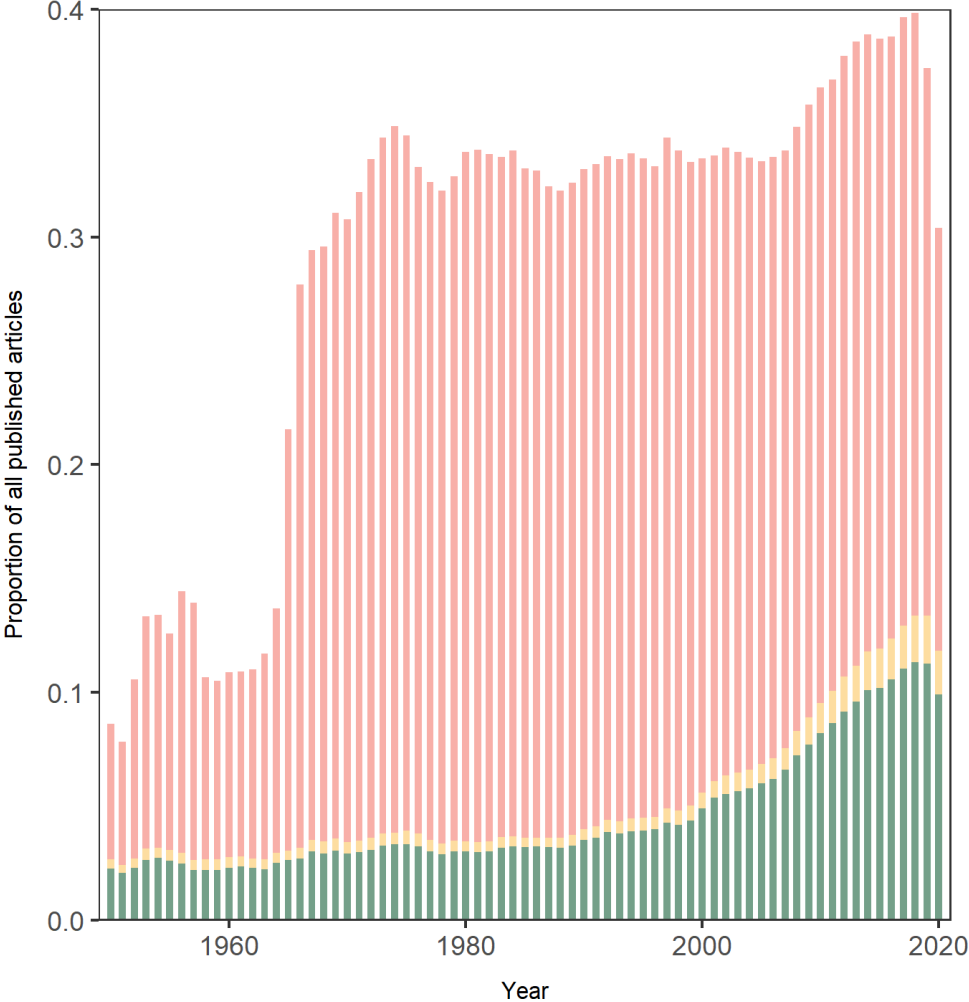


128

Number of mentions in undergraduate biology module descriptions

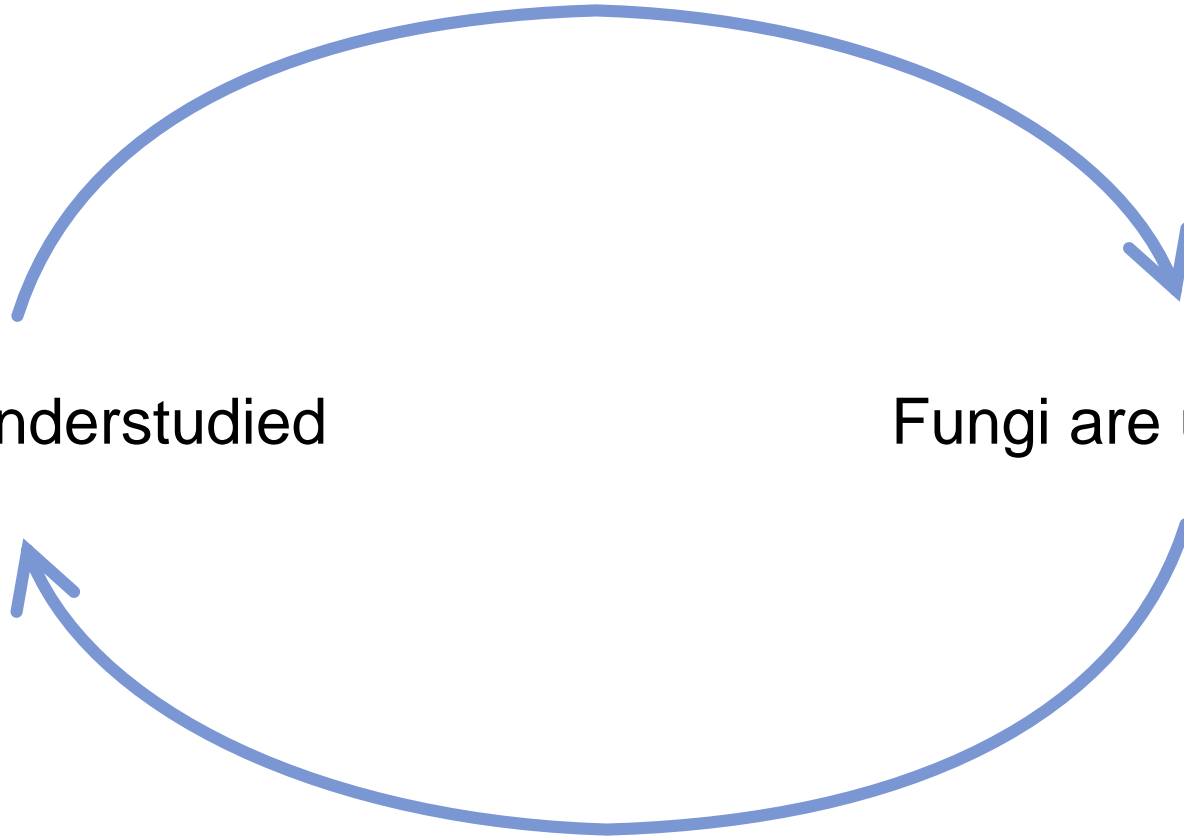
Representation of the eukaryote kingdoms in Europe PMC

25 August 2020



Fungi are understudied

Fungi are undertaught



What's the way forward?

“

No one will protect what they don't care about; and **no one will care about what they have never experienced**

- David Attenborough

”

Kew Science Festival



Kew Science @KewScience · Jul 15, 2019

From fungi quests and the DNA factory, to lab tours and debates - come and get involved with our science @kewgardens this weekend 20 - 21 July
[#KewSciFest expi.co/01nOqB](https://expi.co/01nOqB)

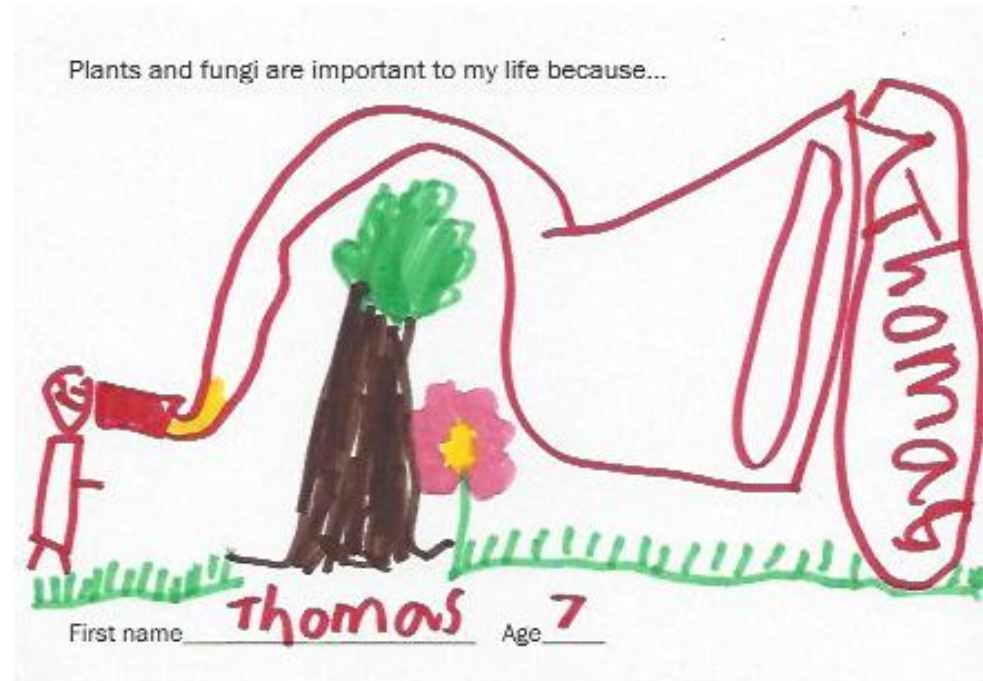
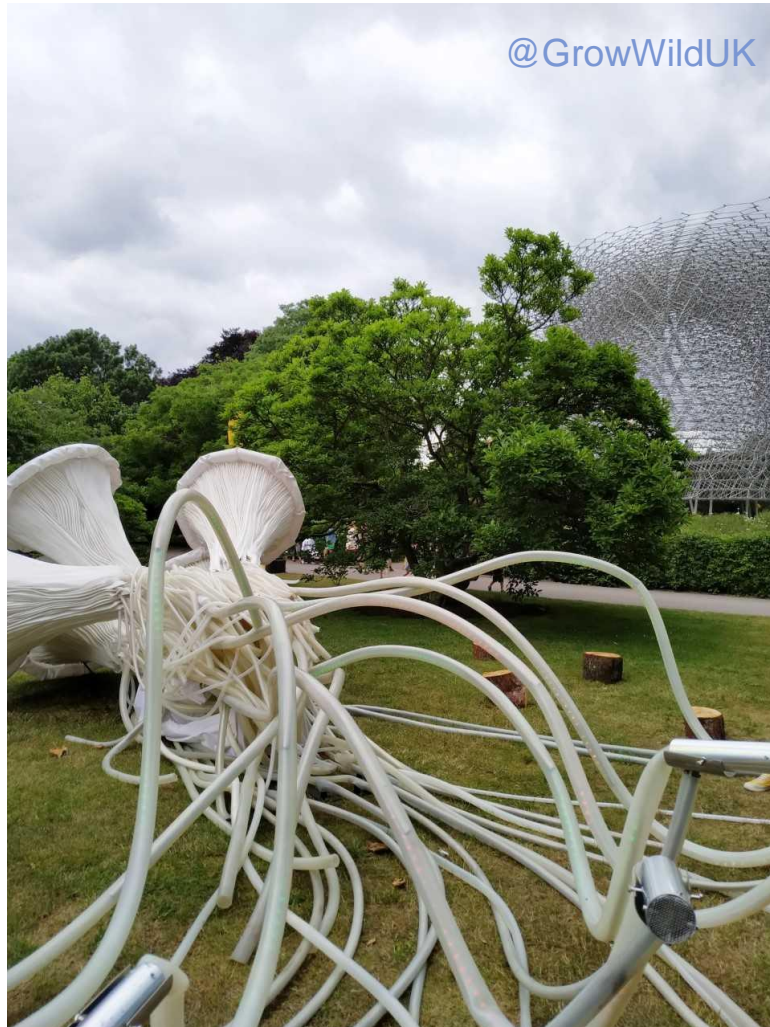


↻ 19

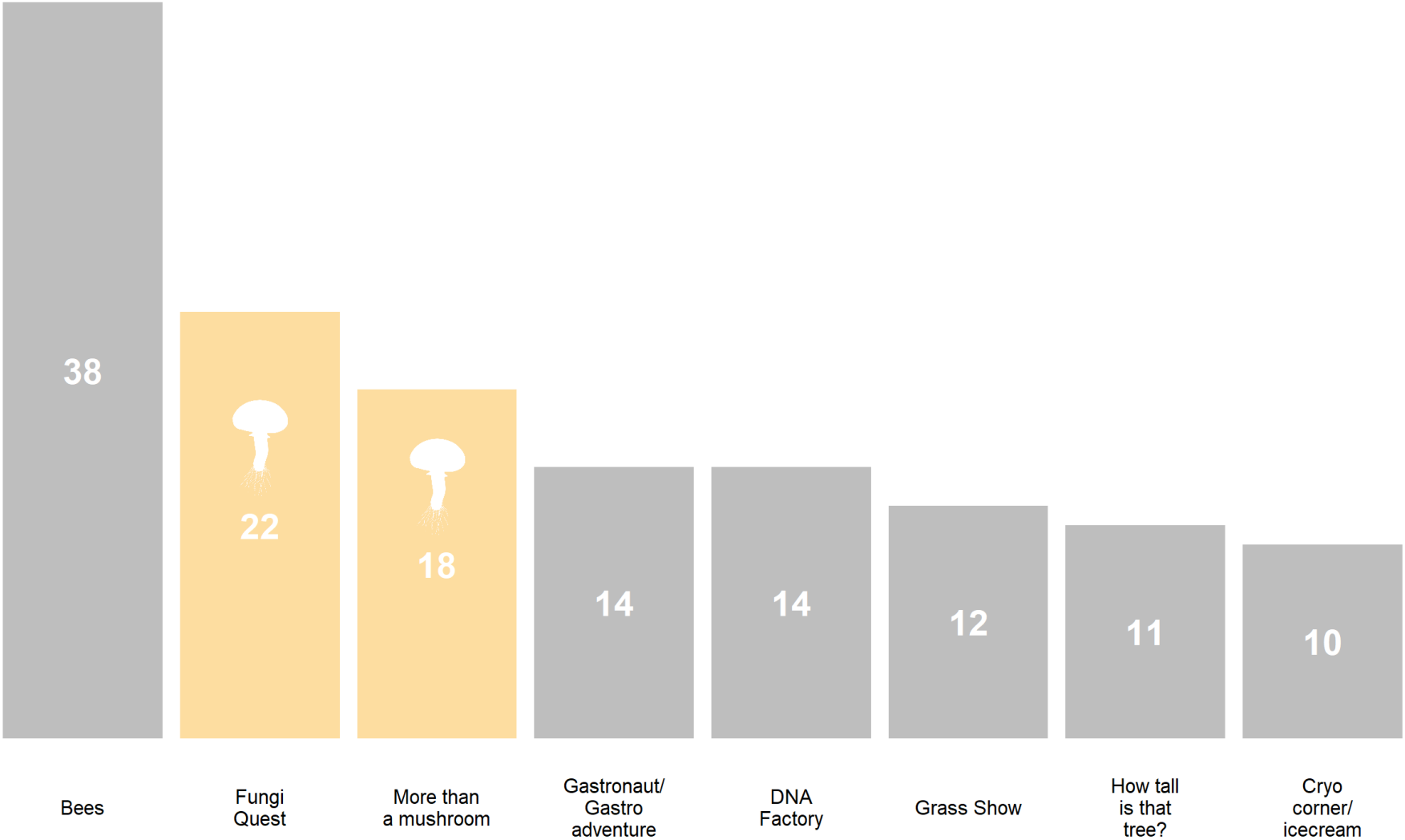
♡ 37



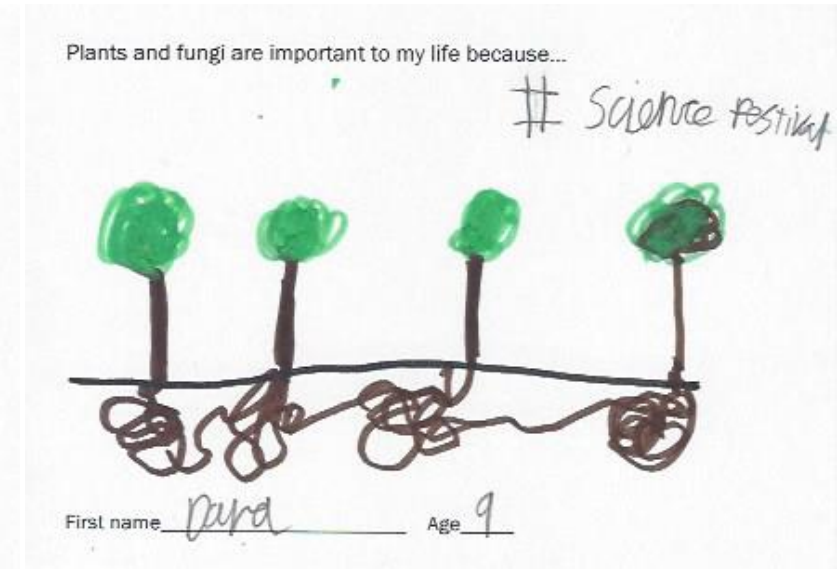
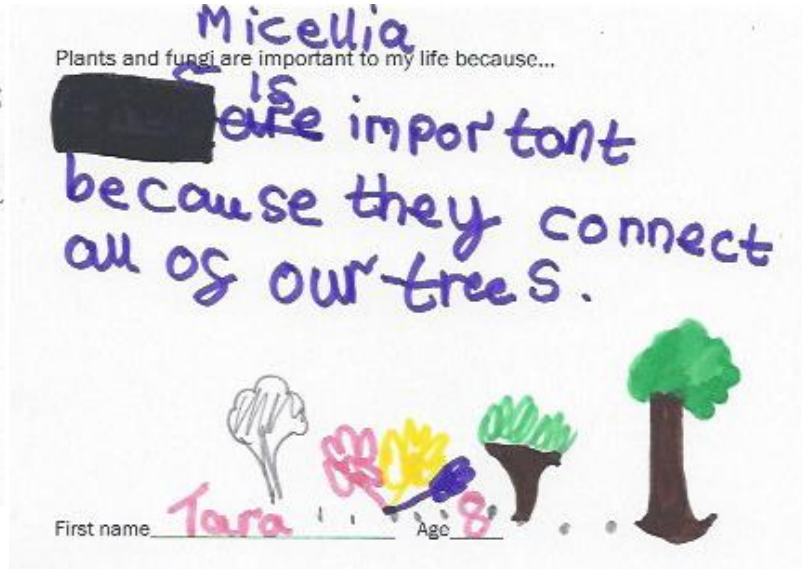
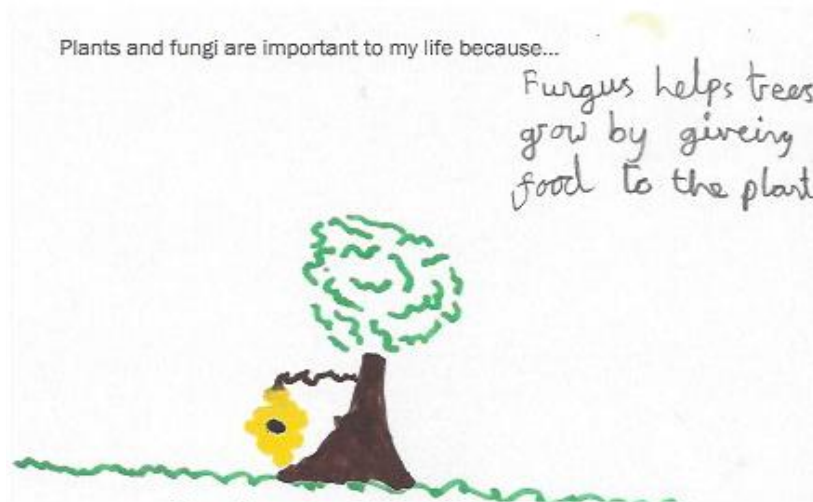
Kew Science Festival



Visitors' most enjoyed activities at Kew Science Festival 2019 (out of 39 total activities)



Kew Science Festival



“ That pollution is affecting the fungi and therefore that will affect the trees. I didn't know that before.

That fungi helps plants. I thought only plants helped plants.

I learnt that fungi aren't useless. Cause you might think - what's the point of a fungus? Disgusting. But I don't think that, cause it has lots of cures.

”



British Mycological
Society promoting fungal science



Fungi provide both challenges and answers

Give people the opportunity to learn about fungi



GROW WILD
FLOWERS TO THE PEOPLE

 github.com/Rowena-h

 [@RowenaCHill](https://twitter.com/RowenaCHill)

Thanks to Mimi Tanimoto for the Kew
Science Festival Survey Results

Thanks for listening!



stateoftheworldsfungi.org