

Jake Dalzell

jakedalzell (at) irishplants.org

I am an experienced botanist, mycologist, and entomologist. I am deeply passionate about the ecology, evolution, and conservation of plants, fungi, oomycetes, and arthropods. I am fascinated by ecological interactions and networks, in particular antagonistic interactions like parasitism.

Education

Current PhD candidate in fungal ecology at Aberystwyth University.

First Class **BA Natural Sciences (Zoology)** at Trinity Hall, Cambridge. My third year modules were Evolution and Ecosystem Dynamics, Responses to Global Change, Evolutionary Genetics and Adaptation, and Conservation Science. My thesis projects looked at the response of ground flora to disturbance in a tropical forest in Borneo, and the effects of agriculture on invertebrate communities in Guinea-Bissau.

A-levels: A*A*A* in Biology, Maths, Further Maths; A in Spanish

GCSEs: Including A*s in Maths and Further Maths, A in English Language

Awards and Funding

DAERA PhD Studentship: How do fungal communities differ between ancient and recently restored species-rich grasslands along a connectivity gradient? (£84,000) October 2025

Irish Naturalists' Journal Grant: Recording the plant-pathogenic fungi and oomycetes of Ireland (£1,587) November 2024

Bateman Scholarship (from Trinity Hall, for getting a first in my final exams; £425) July 2024

BSBI Plant Study Grant: A Botanical Survey of the Western Islands of Strangford Lough, County Down (£500) July 2022

Publications

Dalzell, J. & Fleming, T. (2025). *Subanguina graminophila* (GOODEY, 1933), a plant-parasitic nematode new to Ireland. *Irish Naturalists' Journal*, 42. (in press)

Dalzell, J. (2024). *Contarinia dipsacearum* RÜBSAAMEN, 1921, a gall midge (Diptera: Cecidomyiidae) new to Ireland and its overlooked occurrence in Britain. *Irish Naturalists' Journal*, 41, 128–129.

Outreach

My [Field Guide to Plant Pathogens](#) aims to make the identification of wild plant pathogen species accessible to beginners. This project combines my skills in scientific illustration and web design with photos, descriptions, distribution maps, and keys.

In January 2026 I gave [a webinar](#) as part of the Botanical Society of Britain and Ireland's Botanical Skills series.

I have collaborated with a film-maker friend of mine to produce [a short documentary](#) on the plants and fungi of Killard Point National Nature Reserve.

I write a [blog](#) with posts on various topics in ecology.

I regularly contribute to Wikipedia, with over 200 edits on English Wikipedia and over 400 across all Wikimedia projects. I often write articles on pathogen species, such as the article for [Peronospora violacea](#).

In November 2024 I gave [a lecture](#) to the Belfast Naturalists' Field Club on my botanical recording project on the islands of Strangford Lough.

Non-academic roles

Jan 2024 – (ongoing) **Botany Tutor** for the Botanical Society of Britain and Ireland on their course *Identiplant: an introduction to serious botany*. I mark students' work and provide feedback.

Apr 2024 – Oct 2024 **Field Botanist** for the UKCEH on the Northern Ireland Countryside Survey. I did 2×2m quadrats of all vascular plants, took soil samples, and measured peat depths. I also did some habitat mapping. I had training in April and then surveyed full time 15th July – 27th September and 23rd – 25th October 2024. This included working in species-rich grassland and fen, woodland, upland heaths and bogs, lowland raised bog, and improved agricultural grassland.

Aug – Sep 2022 I spent two weeks doing botanical fieldwork funded by the BSBI as part of my Strangford Islands project (see below).

Voluntary roles

Sep 2024 – early 2025 **Herbarium volunteer** in the Belfast Herbarium (Museums NI). I assisted with curation and digitisation of the fungal collection.

June 2024 – September 2025 **Digital and Social Media Officer** for Wild Belfast, an organisation that aims to connect communities in Belfast with the wildlife that lives there. I also organise botanical events.

Skills

I have excellent field and taxonomy skills in botany, mycology, and entomology. I have several thousand hours experience working with the Irish flora, both casually recording as a hobby and working professionally on surveys including the Northern Ireland Countryside Survey. I also record plant-pathogenic fungi and oomycetes, finding many species new to Ireland and several potentially new to science (pending phylogenetic work). I have experience working with invertebrates too, particularly gall-forming species: one of my finds last year was a gall midge that had not been seen in Britain and Ireland since 1947 and was the first Irish record (*Contarinia dipsacearum*).

I am also experienced at teaching others ecological field skills. I am a tutor on the BSBI's Identiplant course for intermediate botanists, and I also have been involved in running several field days through the BSBI and Wild Belfast (a wildlife advocacy group in Belfast). In 2025 I will be running a field course for beginner botanists with Wild Belfast, and several field days focusing on plant pathogens.

I have a good knowledge of both R and Python, including best practices for reproducible research and version control using Git. I regularly use R for data analysis and visualisation, and I have experience using Generalised Linear Models, Principal Component Analysis, and other community ecology techniques. I have made one small contribution to the ecological network R package bipartite (<https://github.com/biometry/bipartite/pull/33>) and I am eager to make further contributions to community packages. I have used Python for climate modelling as part of a university course and have also constructed a dynamic spatial species competition model. I am now using Julia for ecological modelling (<https://github.com/jed76/Epidemiology-modelling>).

I am experienced with Microsoft Office, ImageJ, and illustration in Krita and GNU Image Manipulation Program. I am skilled in web design including working with Wordpress, Hugo, and handwritten HTML/CSS. I can use QGIS to make distribution maps. I am quick to pick up new skills.

Research Projects

[My PhD at Aberystwyth University] 2025 – ongoing: How do fungal communities differ between ancient and recently restored species-rich grasslands along a connectivity gradient? (see https://irishplants.org/my_PhD.html)

2024 – 2025: Recording the plant-pathogenic fungi and oomycetes of Ireland (see https://irishplants.org/plant_pathogens/INJ_Project.html)

- Casual recording and in-depth surveys of plant pathogen communities
- Lots of microscopy!

2022 – 2024: Plants of Strangford Islands (see <https://irishplants.org/islands.html>)

- I have been systematically recording the flora of islands in Strangford Lough. So far I have visited fourteen islands.
- I have begun to analyse these data from an island biogeography perspective and hope to publish my work in 2025.
- I have presented a poster on this project at a conference of the Botanical Society of Britain and Ireland and given a talk to the Belfast Naturalists' Field Club (available on [YouTube](#)).

2023: Dynamic spatial model of a hemiparasite and its hosts ([see summary here](#))

- I replicated a paper from 2009 by Cameron et al., which modelled the population dynamics of Yellow Rattle, grasses, and forbs in a simulated grassland.

- I improved the visualisation of the model and the simulation of seed dispersal.
- I have published an [accessible resource about the use of Yellow Rattle in species-rich grassland creation](#), including a figure explaining population dynamics based on the output of my model.

[University of Cambridge] November 2022 – March 2023: eDNA work with flora of Tristan da Cunha (vegetation history)

[University of Cambridge] March 2023: a three-day mini project comparing plant parasite and host physiology in a grassland in Portugal ([see writeup here](#))

[University of Cambridge] September 2023 – January 2024: The effect of disturbance along trails on the ground flora of Danum Valley Conservation Area, Sabah, Borneo

[University of Cambridge] January 2024 – April 2024: The effects of small-scale agriculture on arthropod communities in Guinea-Bissau

- Identifying arthropods to order
- Data analysis with Generalised Linear Mixed Models
- Community ecology analysis with PCA and PERMANOVA

Interests

While at the University of Cambridge I was both a member and then captain of the Botanical University Challenge team (a general knowledge quiz about plants, with teams from universities across Britain and Ireland). In 2023 we came second, and in 2024 we won! I spend my free time pursuing my interests in Gaelic language and linguistics, sean-nós singing, science fiction, and kayaking.