

[The Trinity College Dublin Botany Department Newsletter](#)

Accomplishments

Botany welcomes **Francesco Martini**, a plant ecologist who joined **Jane Stout**'s research group to work on the **FOR-ES project**, a collaboration between Trinity College Dublin (**TCD**), University College Dublin (**UCD**), and **Coillte** - funded by the Department of Agriculture, Food and the Marine (**DAFM**). He is looking forward to contributing to the **assessment of ecosystem services provided by Irish forests** and he is keen to learn more about using **Natural Capital Accounting** to achieve this goal. His previous work focused on the study of **forest regeneration dynamics and plant-animal interactions** in subtropical Asia and European primary forests. Raised in Italy, he moved to **China** to continue his postgraduate studies. He received a **PhD** from Guangxi University, whe-



re he studied **seedling dynamics and patterns of insect herbivory** across species and communities in four subtropical forests. He then moved to **Taiwan** for a first **postdoctoral** position to work on a long-term seedling dataset from a forest dynamic plot (Fushan, part of the ForestGEO Network), exploring the **impacts of rainfall fluctuations and masting on biotic interactions and seedling demography**. Later, he spent a second postdoc in **Prague** analyzing a large dataset of primary forests monitoring plots looking at the key factors driving the density of forest regeneration in the last remnants of untouched primary forests in Europe. *Out of work interests:* basketball, running, hiking and travelling!

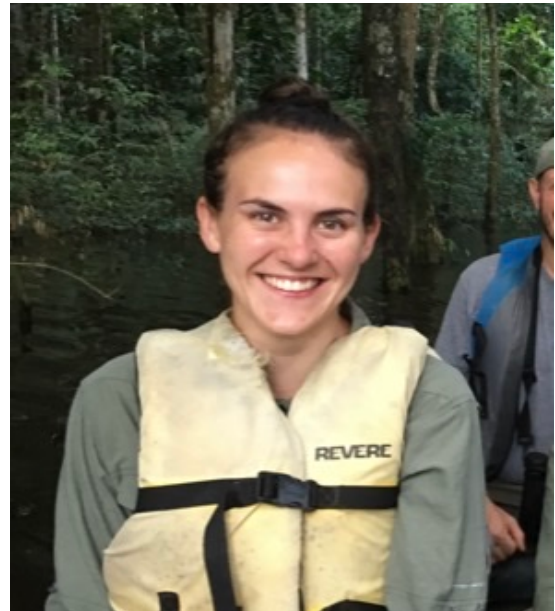
Accomplishments

TERRAFORM welcomes five new researchers!

TERRAFORM is a five-year research project funded by **ERC** and will contribute to discovering how plants TERRAFORMed the Earth, how plant functional traits evolved over the past 300 million years, and establish a new methodological framework to extract the full untapped potential data resources from fossil plants.



Katie O'Dea has joined the group as a **Research assistant**, with a bachelor's degree in **Environmental Science** (UCD) and an amazing research experience in tropical rainforest at the **Iwokrama Rainforest, Guyana**. Katie has also worked at **Schneider Electric**, a multinational that delivers automation, digitization and energy management solutions with focus on sustainability.



Catarina Barbosa has joined the group as a **PhD student**, with a bachelor's degree in **Biology** (FCUP, Portugal) and a master's in **Palaeontology** (U. Évora/FCT-UNL, Portugal). She has specifically worked on the floristic endemism of the carboniferous **Douro Basin**, which is the largest river basin in the Iberian Peninsula, with description of new species. She is also a vibrant musician with a bug for the drums!



Accomplishments

Antonietta Knetge has joined the group as a **PhD student**, with a bachelor at University College Cork (**UCC**) with a dissertation focusing on the **pioneer flora of Lower Carboniferous Kiltorcan, Ireland**. She has knowledge in Quaternary macrofossil diversity and quantification in Northern Italy and Greece, along with skills on charcoal identification to determine fire dynamics.



Christos Chondrogiannis and **William J. Matthaeus** have joined the group as **post-docs**. Christos comes from Greece, where he has completed his PhD in **Plant Physiology** (University of Patras), and is truly passionate about research in plant ecophysiology, interactions of plants with abiotic/biotic stresses, photosynthesis and plant-water relations. William comes from Texas (US) and got his PhD in **Biology** at the Baylor University, where he has previously worked as a research and teaching assistant between 2013-2020.



Accomplishments

Welcome to **Ian Clancy**, originally from Aughrim in Co. Wicklow., who has joined the Botany Dpt. as a **PhD student** on the Teagasc funded **Carbosol project** - supervised by **Dr. Matt Saunders** (TCD) and **Prof. Gary Lanigan** (Teagasc). With a background in **Geography** (BSc DCU) and in **Climate Change** (MSc Maynooth University), he will investigate on a project about **carbon and GHG dynamics of peatlands that have been converted to grassland agriculture**".



Accomplishments

Welcome to **Luke Quill** who has joined us just right after getting his bachelor's degree here at the Botany Dpt. He will be working as a **PhD student** in the **NuReCycle project** under the supervision of **Carla Harper** and **Trevor Hodkinson**, funded by the **Kinsella Challenged-Based E3 Multi-Disciplinary Project Award**.

*“My research focuses on **native Irish nutrient-accumulator plant species and their associated mycorrhizal fungi**. This project aims towards producing a more sustainable approach to our agricultural system in which nutrients, such as phosphorus, can be accumulated and recycled rather than lost to our already vulnerable waterways.*



Botany welcomes also **Pongsakorn Kunasit (Cesar)**, who comes from Thailand. He holds a master's degree in Biology and has previously worked on pollen morphology and morphometrics of tropical plants. Cesar will be here a **PhD student** to work on the **systematics of Malvaceae-Grewioideae of the Indochinese Peninsula** - supervised by **Prof. Trevor Hodkinson** and funded by **Her Royal Highness Princess Maha Chakri Sirindhorn Scholarship**.



Accomplishments

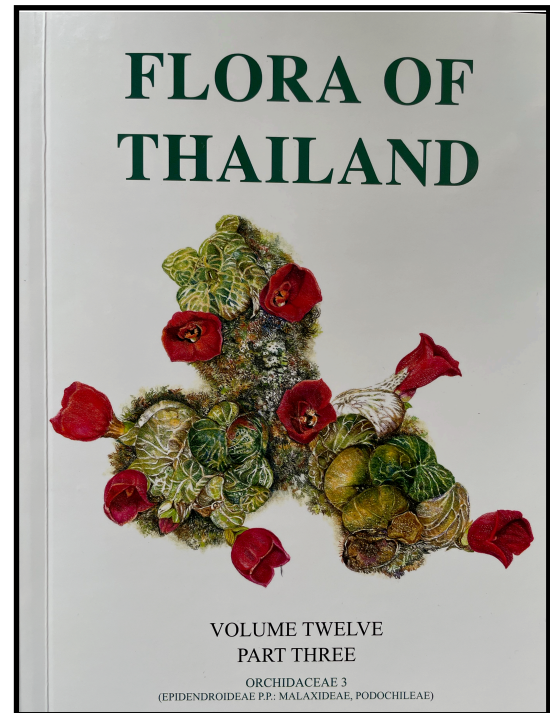
And welcome to **Richard Slevin** who has joined us straight after his bachelor in Botany as a **Research Assistant** in the **Plant Ecophysiology Research Group** under the supervision of **Matthew Saunders**. His role is to assist the group in any research being conducted. *"I am mainly focused on the use of Eddy Covariance Towers to calculate the flux of GHG's between ecosystems and the atmosphere."* Using this technology, he will be monitoring the **carbon dynamics of an agricultural cropland with *Hordeum spp* grown on an organic soil** to see how this unique combination of soil and plant physiology may result in an abnormal rate of carbon emissions and exports from the site. *"I am highly fascinated by plant physiology, ecophysiology, sustainable resource management, and most importantly trees."*



Phytobooks

Another new part of the **Flora of Thailand (Vol. 12;3)** of which **John Parnell** is an editor has just been published. The whole of Volume 12 is entirely dedicated to the **Orchids of Thailand**, **350 pages long and with 88 colour photographs**. At least two further parts will be forthcoming to complete the Orchids of Thailand.

The Thai Orchid flora is huge, without exaggeration: *did you know that there are more species of Orchids in Thailand than there are species of Angiosperm in Ireland?*



Conferences

European Geosciences Union 2022 - Vienna 3–8 April 2022

Congratulations to **Dr Alina Premrov**, for being an excellent co-convenor of the **SSS9.7 session - *Soil organic and inorganic carbon stocks and dynamics in agro-ecosystems: mechanisms, measurements and modelling strategies*** at the **EGU 2022 General Assembly** ([link](#)). She also gave two presentations about:

- ***'ECOSSE biogeochemical modelling of soil organic carbon from Irish grassland systems - challenges and opportunities'***, (research that was performed under **SOLUM project** (P.I. **Dr Matthew Saunders**).
- ***'Insights into using HAIR2014 tool for estimating soil pesticide risks in Irish grasslands for selected herbicide active substances'*** (research performed under **POSHBEE project** (WP leaders **Dr Jane Stout** and **Dr Matthew Saunders**).



Projects

FOREST Project Stakeholder Workshop

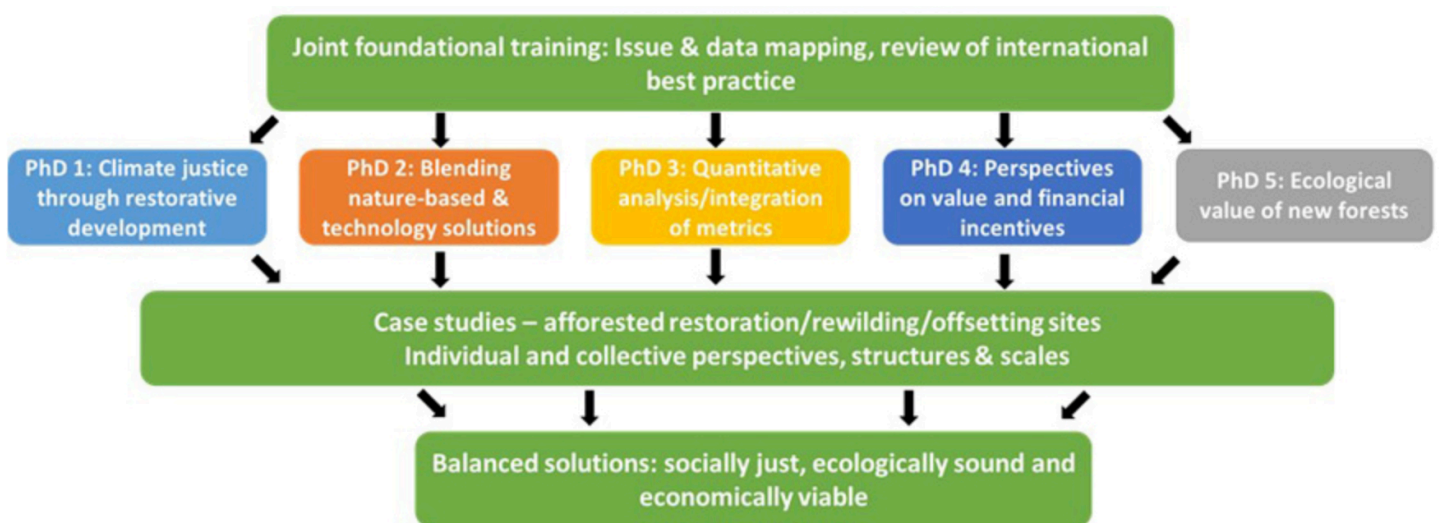
The FOREST project ([website](#)), led by PI's in Botany, Geography, Statistics, Engineer and Business, including our own Professors **Jane Stout** and **Fraser Mitchell**, held its first stakeholder workshop on **September 8th**. The project aims to explore the challenges, opportunities, and trade offs involved in **delivering a socially, environmentally sustainable and financially viable afforestation programme in Ireland**. We invited stakeholders from a wide range of organisations and backgrounds to Trinity to introduce them to the project and its aims, and to seek their view on what sustainable forestry in Ireland means for them.



FOREST Project Team (Left-to-Right): Sarah McCormack, Caroline Brophy, Susan Murphy, Fraser Mitchell, Tasbiul Nibir, Eleanor Denny, Laquiqige Zhu, Martha O'Hagan Luff, Jane Stout, Kate Harrington. (Team also includes Paddy Gaynor and Roisin Gowen)

FOREST Project Stakeholder Workshop

The variety of attendees, including **ecologists, foresters, investors, landowners and representatives from various government bodies**, facilitated active and informative discussions. Strategically splitting them into groups we asked them what a 'good' forest looks like from their perspective, what conflicts and challenges they see, and what knowledge gaps are they aware of. Everyone engaged in sharing their views, clearly appreciating the forum to talk, and the objective questioning of the Trinity team PI's steering the sub-group discussions.



The outcomes need to be digested in full, but some broad consensus on certain issues was clear including **the need to value the benefits of forests beyond wood products, the need prepare our future forests for climate change, and the need for a sustainable financial model for carbon credits**. Our FOREST team also had a chance to network and meet some key stakeholders with whom to follow up on individual project issues. With lots of notes and thoughts to collate and analyse further, the event serves as a base for the Projects ongoing collaborative work, and was of huge benefit for all involved.

Phytoart

From our Artist in Residence - Siobhan McDonald



Siobhan is back from her latest exhibition in **Linz** (Austria) on **September 7th**, at **Ars Electronica: Planet B** ([website](#))- curated by **Christl Baur**. Her work is also on view at the **Royal West of England Academy** and **The Weisman Museum, USA**. Please yourself with a virtual exhibition of her works ([link](#)) and don't miss the **new film installation mediating on the sentience of ice. An excerpt of the film can be viewed [here](#)**. The artist embarked on an expedition to explore this beautiful and vital **Arctic ice** which holds a memory that extends for millions of years into the past. The film explores the slow workings of geological processes found deep in permafrost. **By painting on transient matter such as mycelium and ice from different moments in history and letting them melt, the artist wishes to express the infinite concept of Ensō.** Ensō is rooted in Japanese calligraphy and closely related to the concept of wabi-sabi — the Japanese idea of the transience of all things. Ensō is a circle that has since ancient times been written with canes or sticks in mid-air.

Phytoart

From our Artist in Residence - Siobhan McDonald

INVISIBLE SEAM

Siobhan McDonald

*A slow distillation of deep time,
temperature,
atmosphere
and biosphere.*

*Hand-blown glass vessel filled
with 20,000-year-old glacial
water and 2.00 ml of future air.*



A footage from the film installation

Publications



Congratulats to everyone for all these latest brilliant publications!

[Click on the title to read the full article!](#)

- **Neill A**, O'Donoghue C, **Stout JC** (2022) **Conceptual integration of ecosystem services and natural capital within Irish national policy: An analysis over time and between policy sectors**. Ecosystem Services 57: 101468
- Tsakiridis A, O'Donoghue C, Ryan M, Cullen P, Ó hUallacháin D, Sheridan H, **Stout J** (2022) **Examining the relationship between farmer participation in an agri-environment scheme and the quantity and quality of semi-natural habitats on Irish farms**. Land Use Policy 120, 106284
- Thompson LJ, Smith S, **Stout J**, White B, **Zioga E**, Stanley D. (2022) **Bumblebees can be exposed to the herbicide glyphosate when foraging**. Environmental Toxicology and Chemistry.
- **White, C.D.**, Collier, M.J., **Stout, J.C.** (2022) **Anthropogenic Induced Beta Diversity in Plant–Pollinator Networks: Dissimilarity, Turnover, and Predictive Power**. Frontiers in Ecology and Evolution, 2022, 10, 806615
- Hodge S, **Bottero I**, Dean R, Maher S, **Stout JC**. **Stem-nesting Hymenoptera in Irish farmland: empirical evaluation of artificial trap nests as tools for fundamental research and pollinator conservation**. Journal of Pollination Ecology 31: 110-123
- López-Ballesteros A, Delaney A, Quirke J, **Stout JC**, **Saunders M**, Carolan J, White B, Stanley DA (2022) **Assessing availability of European plant protection product data: an example evaluating basic area treated**. Peer J

Publications

- Holden NM, **Neill AM**, **Stout JC**, O'Brien D, Morris MA **Biocircularity: a framework to define sustainable, circular bioeconomy Circular Economy and Sustainability** (2022).
- **Matthaeus WJ**, Montañez IP, **McElwain JC**, Wilson JP and White JD (2022) **Stems matter: Xylem physiological limits are an accessible and critical improvement to models of plant gas exchange in deep time**. *Frontiers in Ecology and Evolution*
- Hodge S, Schweiger O, Klein A-M, Potts SG, Costa C, Albrecht M, de Miranda J, Mand M, De la Rúa P, Rundlöf M, Attridge E, Dean R, Bulet P, Michez D, Paxton RJ, Babin A, Chauzat M-P, Cougoule N, Laurent M, Martel A-C, Paris L, Rivière M-P, Dubois E, Arafah K, Askri D, Voison SN, Kiljanek T, **Bottero I**, Dominik C, Tamburini G, Pereira-Peixoto MH, Wintermantel D, Breeze TD, Cini E, Senapathi D, de Prisco G, Medrzycki P, Hagenbucher S, Knauer A, Schwarz JM, Raimets R, Martínez-López V, Ivarsson K, Hartfield C, Brown MJF, **Stout JC**. (2022) **Design and planning of a transdisciplinary investigation into farmland pollinators: rationale, co-design, and lessons learned**. *Sustainability*
- S. Lindsay, D.J. Middleton, B.C. Ho, K.Y. Chong, I.M. Turner, Ali Ibrahim, M. Alonso-García⁴, W.F. Ang, P.S. Ashton, P. Athen, S. Atkins, Bazilah Ibrahim, H.J. Beentje, C.M. Boo, P.C. Boyce, G.L.C. Bramley, S. Buerki, M.W. Callmander, S. Chantanaorrapint, M. Cheek, C.-W. Chen, J. Chen, L.M.J. Chen, Chew, P.T., R. Chong, L.M. Choo, R.C.K. Chung, M.J.E. Coode, S.C. Chua, D. Cicuzza, R.P.J. de Kok, G.W.H. Davison, W.J.J.O. de Wilde, H. Duis-termaat, **A. Dubéarnès** et al. (2022). **"Flora of Singapore: Checklist and bibliography"**. *Garden's Bulletin Singapore* 74(Suppl. 1): 3 – 860.

! WE ARE ALL PHYTOBYTES !



If you think that you have any news that should be posted in our newsletter,
please send an email to the **editor Diego Dylan Bianchi - dbianchi@tcd.ie**