

The newsletter from the Botany Department at Trinity College Dublin

New People

Welcome back to [Kamila Kwasniewska](#), who joined Prof. [Jenny McElwain](#)'s group in September 2019. She works on an SFI funded Citizen Science project that aims to explore the chemical weathering potential of tephra (volcanic ash) and the carbon sequestration capacity of Irish soils. Enhanced chemical weathering can partially offset global carbon emissions by increasing the rate at which plant-respired carbon dioxide in the soil promotes the weathering of silicate rocks. This in turn may increase the rate at which carbonates are deposited in the oceans. The 'T'ephra Bag Citizen Science Experiment will focus on involving the general public – school children and their families. It aims to investigate participants' engagement and knowledge with climate change and reducing carbon emissions.



Accomplishments



Congratulations to [Anna Kaja Hoeyer](#) on passing her PhD viva, with minor corrections, on biocontrol with endophytic fungi.

She was under the supervision of [Trevor Hodkinson](#), [Brian Murphy](#) and collaborators from the University of Copenhagen.



[Mike Jones](#) wrote a book and a book chapter:

Michael B Jones, *Miscanthus* for Bioenergy Production - crop production, utilization and climate change mitigation, *Routledge*, 2020, 120pp.

Michael B Jones, Projected climate change and the global distribution of grasslands. *In*: Editor(s) David J Gibson & Jonathan A Newman, *Grasslands and Climate Change*, *Cambridge University Press*, 2019, pp. 67 – 81.

Publications

Phytotaxa: **Trevor Hodkinson** and colleagues published a new orchid species (*Dendrobium perplexum*) in the journal *Phytotaxa* "[A new species of *Dendrobium* \(Orchidaceae: Epidendroideae: Malaxideae\) described from previously perplexing specimens of the Seidenfaden collection](#)".

Mitigation and Adaptation Strategies for Global Change: **Mike Jones** and **Alwynne McGeever** collaborated with **Barry McMullin** and **Paul Price** from DCU for an article on "[Assessing negative carbon dioxide emissions from the perspective of a national "fair share" of the remaining global carbon budget](#)"



Global Change Biology Bioenergy: **Mike Jones** co-authored a paper titled "[Serious mismatches continue between science and policy in forest bioenergy](#)". This review, based on recent work by Europe's Academies of Science, finds that current policies are failing to recognize that removing forest carbon stocks for bioenergy leads to an initial increase in emissions. Furthermore it describes the current United Nations Framework Convention on Climate Change accounting rules, which allow imported biomass to be treated as zero emissions at the point of combustion and urge their revision to remove the risk of these providing incentives to import biomass with negative climate impacts.

Science Advances: **Jane Stout** and former TCD Botany PhD student **Dara Stanley**, now Assistant Professor at UCD, contributed to a global analysis showing the benefits of biodiversity for ecosystem service provision and crop production. The study confirmed the advantages of biodiversification. Showing that agricultural fields with more species, and landscapes where the variation of crops, hedges, trees and meadows are higher, are better protected from harmful insects, promote pollination, and produce higher yields. Find the TCD news item on "[A global synthesis reveals biodiversity-mediated benefits for crop production](#)" [here](#).

Jane Stout, **James Murphy** and **Saorla Kavanagh's** final report from the **EPA-funded Pollival project** has been published. The report shows that both the market and non-market values of pollinators in Ireland are currently greatly underestimated. Even if we just consider locally produced food crops, loss of pollinators in Ireland could risk a €20-59 million reduction per year in crop production. If the huge amount of animal-pollinated food we import from elsewhere are also considered, pollinator loss could cost more than €800 million per year to the Irish economy through increased import costs. Additionally, a survey of 1000 randomly selected members of the Irish population, found that over 80% of respondents were aware that bees were in decline in Ireland, and more than 90% agreed it is important to protect bees and the benefits they provide. Showing that people value the existence of pollinators, and their role in wild plant pollination was important to them. More than half the respondents supported increased taxation to enable pollinator conservation, though most preferred the introduction of tariffs on products that harm pollinators and fines for actions that damage places pollinators live, breed or eat. See the full report [here](#) and the TCD news item [here](#).

Events and Activities

PROBE night As part of European Researchers' Night, PROBE, events at TCD, **Jane Stout**, **Irene Bottero** and **Elena Zioga**, hosted about eighty 6th class students from local primary schools for a pollinator workshop. The students learned about insects and why they are important to people, about bees in particular and how they communicate, where they live, and the role pollination plays in our diets.

Tropical forest mural inauguration

Many thanks to London-based mural artist, [Josephine Hicks](#), whose latest masterpiece now spans three walls of our historic Botany Building. The mural celebrates plant biodiversity and a strong history of collaboration and research between Trinity and Thai botanists.

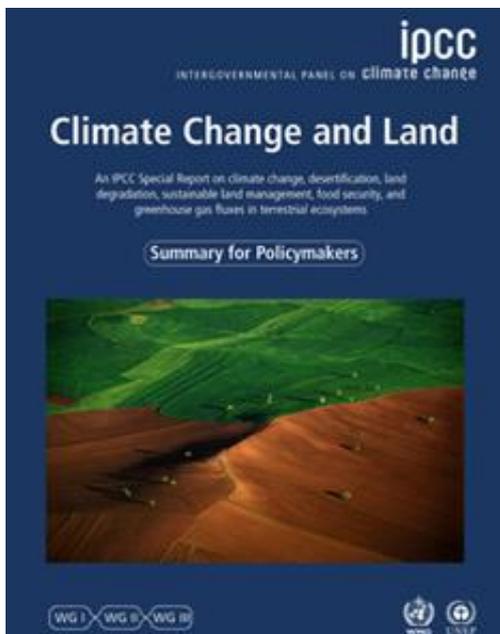
More info, pictures and what [Jenny](#) and [Jo](#) had to say about it in the Trinity News item [here](#).



Meetings and Conferences

[Jane Stout](#) acted as chair and rapporteur for a session on environmentally sustainable farming and fishing at a **DAFM open policy debate on Ireland's Agri-food strategy to 2030**. The aim of the session was to consider how farming and fishing can improve their environmental credentials, particularly around climate mitigation and adaptation, water and air quality, biodiversity and soils, whilst also contributing to Ireland's fulfilment of the SDGs. Taoiseach Leo Varadkar, and Ministers Creed and Doyle, all spoke at the conference, emphasising the need for more environmental sustainability in the sector.

[Jane Stout](#) also gave a talk on the importance of pollinators and the Trinity Campus Pollinator Plan at a sustainability festival held in the Trinity Biosciences Institute and has contributed to a campus-wide biodiversity campaign where you can vote for pollinator-friendly spring bulb planting, see [here](#).



On Wednesday 16th October, the **Oireachtas Joint Committee on Climate Action** reviewed the recently published *IPCC Special Report on Climate Change and Land*. Dr [Eamon Haughey](#) gave evidence to the committee, outlining key findings from the report.

The key findings were:

- Land is a critical resource upon which we all rely, but it is under increasing pressure from humans and climate change.
- Through sustainable management, land can be an important part of the solution to climate change, but land cannot do it all.
- Reducing greenhouse gas emissions from all sectors is essential if global warming is to be kept to well below 2°C.

Members of the committee were particularly interested in what the findings of the IPCC report mean for Ireland and our land use. Representatives from The Department of Agriculture, Food and the Marine and Teagasc also gave evidence outlining what is being done in the agriculture sector to tackle climate change.

The Special Report on Climate Change and Land was approved by governments in, Geneva, Switzerland, August 2019. It is the second of three special reports of the current IPCC assessment cycle, building on the Special Report on Global Warming of 1.5°C approved in 2018. The full Special Report is available [here](#).

(EcoEvo) Blog Posts

Jane Stout wrote a blog titled "[Wildflowers – to plant or not to plant?](#)" in which she gives advices on what to do to help stop bee decline. For other pollinator conservation dos and don'ts, see her blog [here](#).



Want to learn more? Check out the [EcoEvo Blog](#), where Trinity's Botany and Zoology departments discuss their work and reflections in research. The latest posts include ...



[A Mosaic of Birds in Madagascar](#)
by Fionn Ó Marcaigh



[Meet the new editorial team for 2019/20](#)
by Jenny Bortoluzzi & Floriane O'Keeffe



[Worthless wetland?](#)
By Jane Stout

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HAPPY HALLOWEEN



PHYTOBYTES needs your input! Whether you are student or staff, please send any news you have, big or small, to Marine (valmierm@tcd.ie) with the subject heading "Phytobytes". Let's share the latest news and always be aware of what is happening at Botany!