

The Trinity College Dublin Botany Department Newsletter

Accomplishments



Farewell, congratulations, and thanks to **Simon Hodge**, who has started a lectureship position in applied ecology in the School of Agriculture at UCD.

He will be replaced on the **Farm-Ecos project** by **Michelle Larkin**, who has just completed her PhD on pollinators and results-based payment schemes in the Burren, under the supervision of **Dara Stanley** at NUIG. Welcome **Michelle!**



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(Semi-)farewell and huge thanks to **Aoibheann Gaughran**, who has been managing the **Aras Biodiversity Audit** over the past 12 months. This involved a huge amount of fieldwork for Aoibheann (at all hours of the day and night!), as well as coordinating field teams, learning some botany, teaching us about mammals, and writing an excellent report giving management recommendations. Thanks to everyone who was involved in the project – lots of wonderful photos of the project [here](#). **Aoibheann** is now working as a Teaching Fellow in Zoology, teaching Statistics and Plant-Animal Interactions.

Publications

Science of The Total Environment: **Alina Premrov** and **Matthew Saunders** with co-authors have recently published an article entitled "[CO₂ fluxes from drained and rewetted peatlands using a new ECOSSE model water table simulation approach](#)" which presents, among others things, improved model CO₂ predictions for drained peatlands upon application of newly developed drainage factor for ECOSSE model rainfall inputs. Work aims to contribute to IPCC Tier 3 emissions reporting for organic soils.

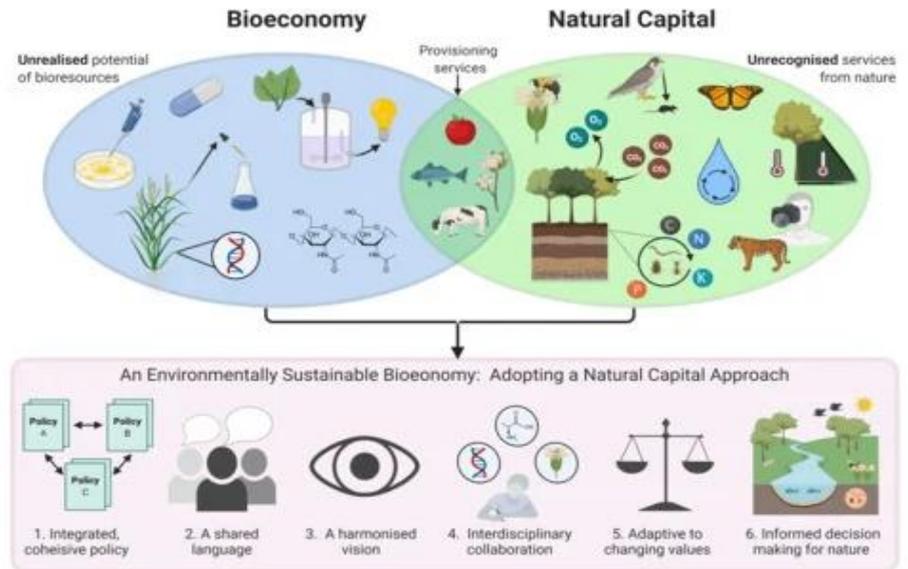
EPA Catchments Newsletter: **Catherine Farrell** wrote a piece about our work on the INCASE (Irish Natural Capital Accounting for Sustainable Environments) project that you can find [here](#) on page 28.

Aoife Delaney and **Jane Stout** had their work on shea pollination profiled in **The Conversation – Africa** "[Plant diversity makes West Africa's shea trees bear more fruit](#)"

Sustainability: Andrew Neill and Jane Stout published a paper in the "Sustainable Bioeconomy" special issue of the journal Sustainability. The article is titled "[A Natural Capital Lens for a Sustainable Bioeconomy: Determining the Unrealised and Unrecognised Services from Nature](#)" and is available with open access.

This is the first publication from Andrew's PhD project and presents an environmental perspective on the bioeconomy.

Visual Abstract:



Projects and Funding

Brian Murphy and Trevor Hodkinson received US patent approval for a method for improving the mean dry shoot weight, mean dry grain weight, and suppressing seed-borne infection in a cereal crop.

[B Murphy, T Hodkinson, F Doohan 2020- US Patent 10,765,084](#)

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Jane Stout, with Yvonne Buckley and Ian Donohue, in collaboration with the SFI Research Centre for Energy, Climate and Marine (MAREI), have a new project starting: "Nature + Energy" looking at the biodiversity and ecosystem services delivery from terrestrial wind farms, developing natural capital accounts and guidelines for biodiversity-friendly management.

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Congratulations to Cian White, who has taken up a research assistant role on the [FarmZeroC](#) project with Jane Stout, and spent the summer sampling plants, pollinators, birds, and bats at Shinagh Dairy Farm in West Cork.



FarmZeroC aims to demonstrate that dairy farming can meet two pillars of sustainability: carbon neutrality and biodiversity conservation. A **life cycle assessment** is being carried out to account for the benefits delivered by various technologies (improved animal genetics, feed additives, slurry chemical amendments, renewable energy) and improved management practices (adopting mixed species swards and increasing carbon sequestration), with early results indicating that by adopting the available technologies and practices it is possible to halve the kg

of carbon emitted per litre of milk. A **biodiversity survey** was carried out by Cian to establish a baseline of what species and habitats occur on the farm. Recommendations are being developed as to how the farm managers can maintain what biodiversity currently exists while increasing habitat quantity and quality.

Currently, natural habitat cover occupies 7% of farm area, the majority of which is hedgerow contributing 4%. By converting sitka spruce plantations to native forestry, introducing field margins on south-facing hedges, and allowing permanently waterlogged areas of fields to become wetland, Shinagh Dairy farm can reach 10% habitat cover, meeting the target set out in the **EU's 2030 Biodiversity strategy**, with minimal impact on productive fields. This would demonstrate that the biodiversity on intensive dairy farms can be maintained and improved and that carbon emissions from dairy can be drastically reduced without a significant effect on milk productivity.

Meetings and Conferences

Jane Stout gave a talk to the Trinity Retired Staff Association, the Howth and Sutton Horticultural Society, and to the UCD Graduate Diploma in Design Thinking for Sustainability, and presented the EPA-funded [INCASE project](#) at **Environment Ireland**, Ireland's environmental policy and management conference, organised by the EPA.

Jane also featured in a podcast on art and nature, available [here](#).

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Catherine Farrell featured on a pre-budget discussion with the **Irish Rural Link**, arguing that the budget needed to include financial support for nature alongside the CEO of Social Justice Ireland, and former president of the Irish Farmers Association. Watch [here](#).

Events and Activities

Botany Cocktails Party

On Friday, 23rd October, all members of the Botany department have been cordially invited to join a virtual cocktail party! Cocktail dress and black tie were encouraged to give us all a break from loungewear and pyjamas.

A competition for the best botanical cocktails inspired everyone to surpass themselves, resulting in an impressive range of unique and ambitious cocktails (and mocktails) that only botanists could have come up with.

Huge thanks to everyone for this lovely social event, and big congratulations to our winner:

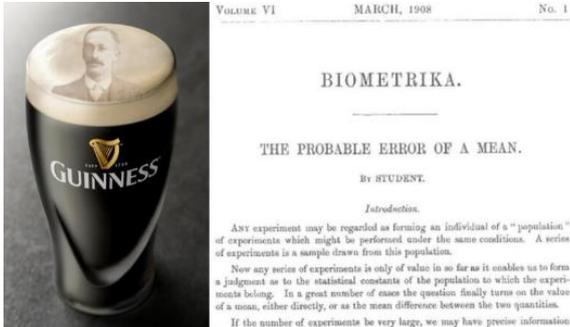
- **Trevor Hodkinson** for a double win with his "Monkanthus Giganteus", earning the title of the most Fancy Cocktail name in addition to the best presentation!
- **Carla Harper** deserves without a doubt her distinction for the Cocktail with the most species diversity with her "Million Microbe Mocktail".
- **Daniel Kelly** and his "Trinidadian Sunset" scored the prize, without surprise, for the Cocktail with the most fascinating story behind it is.



Recommended read : [the Drunken Botanist](#)

EcoEvo Blog Posts

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 ...



[Guinness and t-tests: To Gosset!](#)
by James Orr



[New Editors for a New Academic Year](#)
by Erika Soldi and Sam Preston



[Shy birds hiding evolutionary insights: cryptic sexual dimorphism in the Sulawesi Babbler](#)
by Fionn Ó Marcaigh



[Boating in Ankobohobo, or The Importance of Bird Areas](#)
by Fionn Ó Marcaigh

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