PHYTOBYTES

JANUARY 2022

The Trinity College Dublin Botany Department Newsletter

Accomplishments

Welcome back to **Anne Dubéarnès** who is delighted to come back to the Botany Department as a **Research Fellow**. She will be **teaching** on several undergraduate modules about **plant systematics**, **biodiversity** and **conservation**, and will help take care of the Herbarium in her role as **Assistant Curator.**

She will also continue her research on the **taxonomy of tropical *Primulaceae***, and on the estimation of **extinction risks of vascular plant species** at a global scale.

Welcome to **Dr Magdalena Matysek** who has joined the department as a **Post-doctoral Research Fellow** on the SFI/ Microsoft funded **Terrain-AI project.** Magdalena will work in the ***Plant Ecophysiology Research Group*** to assess the **carbon and greenhouse gas dynamics of peatland rehabilitation activities**.

PHYTOBYTES JANUARY 2022

Publications

- **Matt Saunders** is a co-author of a recent article published in **Nature Communications** on the *Impact of the 2018 European heatwave on water relations and productivity in forest ecosystems*.

- **Catherine Farrell** and **Jane Stout** published three recent articles entitled:

- *Natural capital approaches: shifting the UN Decade on Ecosystem Restoration from aspiration to reality* (**Restoration Ecology**). This article highlights a number of initiatives globally that are applying natural capital approaches for national accounting, business support and health and wellbeing.

- *Developing peatland ecosystem accounts to guide targets for restoration*. (**One Ecosystem**). This article outlines the approach to developing peatland extent and condition accounts at catchment scale to prioritise areas for restoration.

- *Applying ecosystem accounting to develop a risk register for peatlands and inform restoration targets at catchment scale: a case study from the European region* (**Restoration Ecology**). This article outlines the approach to developing peatland services and benefits accounts and developing a risk register of flows to prioritise areas for restoration.

Fundings and Projects

- **Matt Saunders** is part of a team that has been awarded a **Horizon Europe grant** to work on a **pan-African climate observation and data infrastructure** that will utilise and further develop the best available science and science-based services in Africa to take action on climate change as outlined in the **Paris Agreement** and the **UN Sustainable Development Goals**.

The project combines **partners from Africa and Europe** with diverse experience, backgrounds and viewpoints to co-design and implement the research capacity required for **climate change observation** that meets scientific and societal demands and expectations.

- For those interested in following the fruits of the **Peatlands Gathering 2021** and the **COP26**, all videos are available on the **website** and on **YouTube**.

- **TERRAFORM Project** has a **Twitter account**! For those who are interested, you can follow any update and news by following **@TERRAFORM_H2020**

Phytobooks

Flora of Thailand (Volume 15, Part 1)

The latest volume of the Flora of Thailand, of which **John Parnell** is an editor, has just been published by the Forest Herbarium, Department of National Parks, Wildlife and Plant Conservation, **Bangkok**.

Though 235 +XVI pages in length it is only the first of three parts covering the **family *Rubiaceae*** of which there are ca. **524 species in Thailand** with many, probably most, being trees or shrubs: **quite a contrast to the ca. 12 species in Ireland**, all of which are herbaceous.

Trinity College Botanic Garden

Hosted on Trinity Botanic Garden's website, the **'5 in Five' video series showcases 5 native plants in their natural habitats** in five minutes.

Most of you will remember the very first film in Botany's **'5 in Five' video series**. ***'Shingle Beaches'*** was created by **Jenny McElwain** in **May 2020** as sort of 'lockdown lozenge' for the Covid blues and was an ideal opportunity to address the ongoing issue of plant blindness (*see Phytobytes May 2020 issue*).

Its wide popularity led to the production of **another five videos in 2020:**

- ***Coastal Meadows*** – Jane Stout
- ***Peatlands*** – Fraser Mitchel
- ***Woodland Ferns*** – Steve Waldren
- ***Urban Spaces*** – Marcus Collier
- ***Native Trees*** – Michelle Murray

The series has gathered a loyal and growing following, clocking up **thousands of views on Trinity's YouTube channel** and earning the endorsement of a variety of interest groups from around the country. **By the end of 2021 the 5 in Five production team** – a dynamic partnership between **Trinity Botany** and **Peter Lang** of Photic Design - together with a sparkling line-up of inspiring in-house and guest presenters **released an additional five films:**

Spring Hedgerows – Jenny McElwain

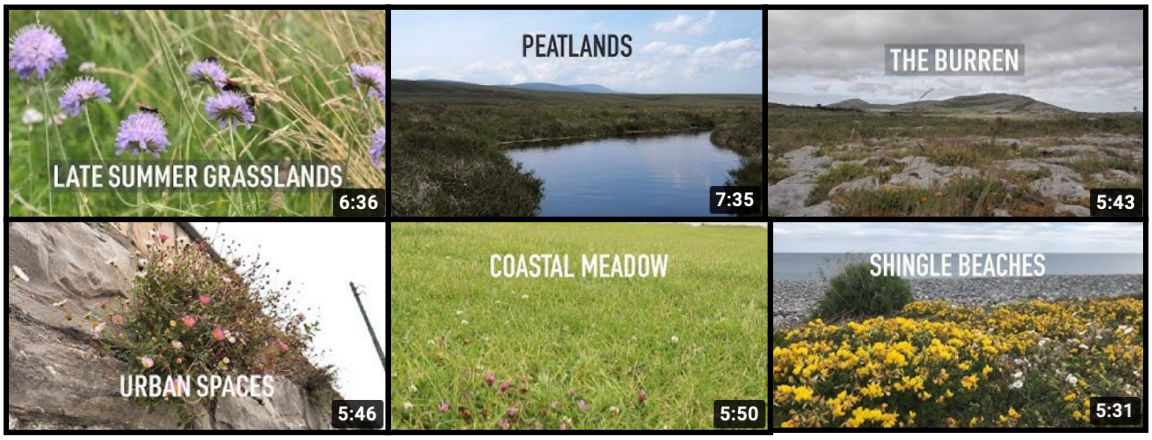
Bog and Fen – Catherine Farrell

The Burren – Mary Birmingham (**Guest**), The Burren Sanctuary

Late Summer Grasslands – Maria Long (**Guest**), National Parks & Wildlife Service

Mushrooms – Carla Harper

Thanks to everyone who has been involved in these productions, especially to our guest presenters: **we now have 11 films** in our 5 in Five **public access library**, and are already busy **planning our 2022 line-up**. The 2022 series will have a special focus on some of **Ireland's rare and threatened species** – look out for more news on this in coming issues. **Until then, you can watch and share all of the videos at these links (Youtube, Trinity Botanic Garden).**



PHYTOBYTES

JANUARY 2022

We are hiring!

A **Technical Research Assistant** position is available in the **TERRAFORM project** to support all research activities within the newly established SFI/TCD jointly funded **Variable Atmosphere and Light (VAL) Lab.**

The successful candidate will be working closely with the research team, providing technical research support focusing on the day-to-day running and **preventative maintenance of plant climate-controlled chambers**, troubleshooting technical issues, providing general **assistance with plant growth and experimentation**, and assisting with user training when necessary.

For more information, please visit the TCD vacancies website.

Research outputs

- As a part of the **Lichen_ART project**, **Kamila Kwasniewska** monitored the nitrogen dioxide (NO_2) traffic-related air pollution in **three Dublin locations and one in Co. Wicklow**. The **NO_2 pollution** is harmful to human health, causing respiratory system problems and aggravation of heart disease symptoms. With sunlight and volatile organic compounds, it **is involved in the ground-level ozone formation**, which causes **damage to plants, including sensitive lichens.**

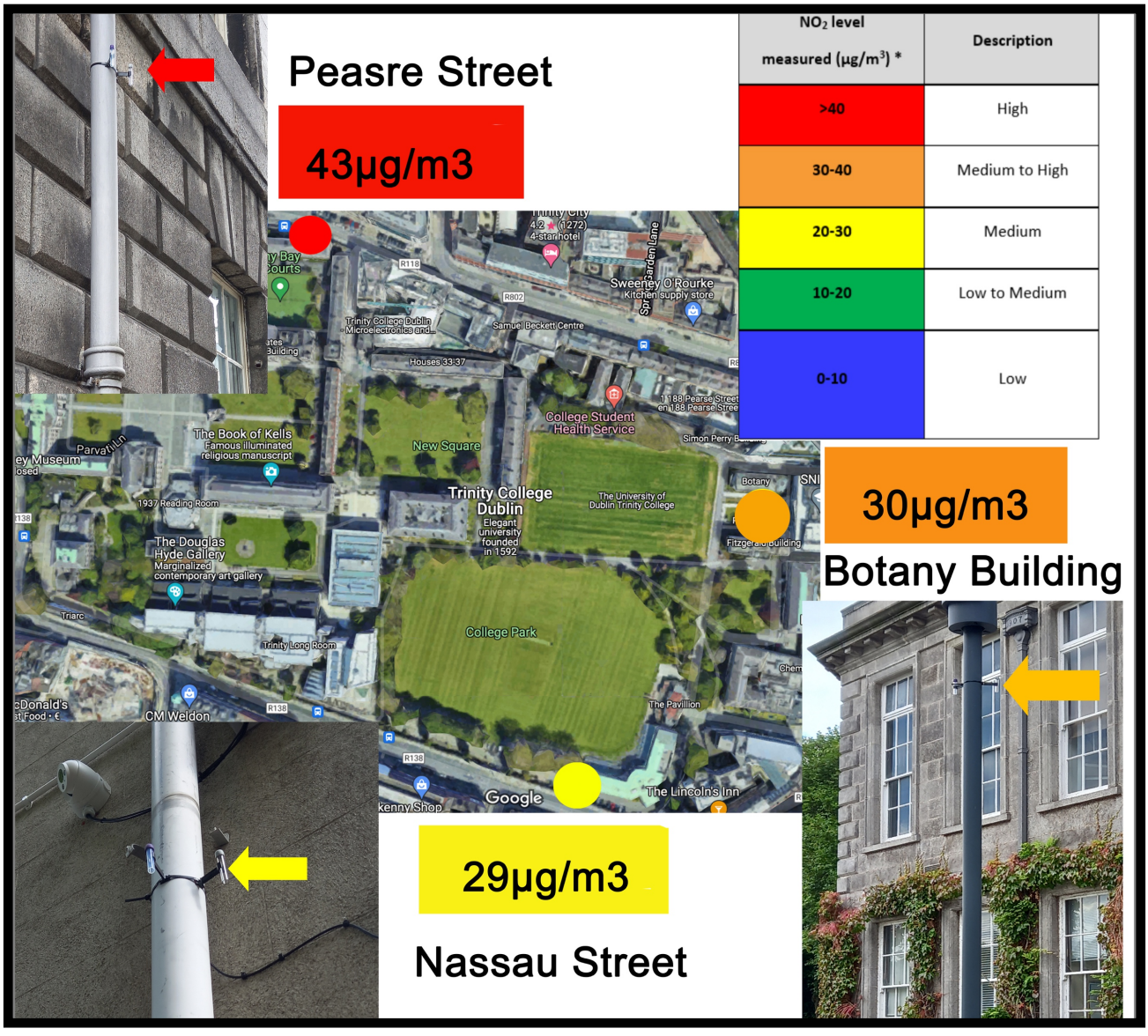
PHYTOBYTES

JANUARY 2022

The first round of monitoring, carried out for one month in **October 2021**, **revealed <u>medium to high</u> NO2 pollution on the TCD campus**, as it follows:

- high level of pollution on the **Pearse Street** (43 ug/m3 of air)
- medium/high level at the **Botany Department building** (30 ug/m3)
- medium level at **Nassau Street** (29 ug/m3)

As the **EU annual legal mean value may not exceed 40 micrograms per cubic metre**, there is a need for more frequent pollution monitoring. Reduction of traffic in the city centre and nature-based solutions could help lower the high levels of NO_2 pollution on the campus.



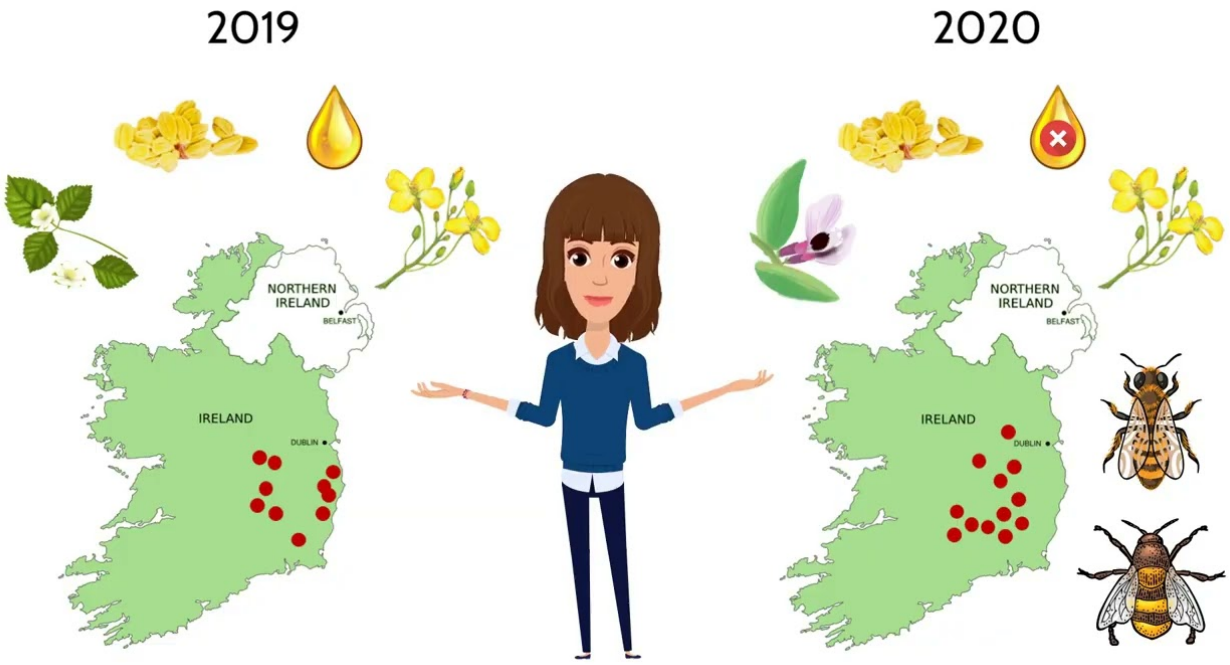
PHYTOBYTES JANUARY 2022

Conferences

Elena Zioga has made a **fantastic video** explaining her research on the impacts of pesticides on bees. It will be presented at the conference **'ONE – Health, Environment, Society'** (**one2022.eu**), which will be held on 21-24 June 2022.

Make sure you'll put a like on the YouTube video and share it around!
It will be precious **to compete at the ONE Conference YouTube contest.**

Watch the video on Youtube at this **link**, or click on the picture below. Enjoy!



PHYTOBYTES

JANUARY 2022

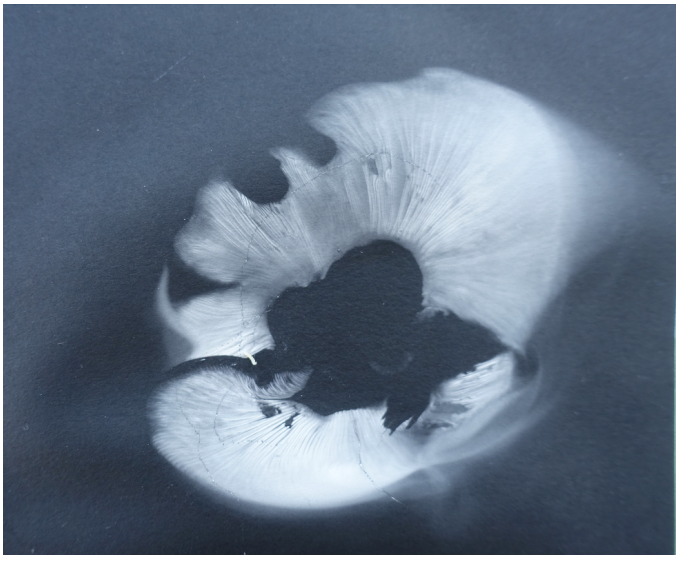
PhytoArt - from our Artist in Residence at the School of Natural Sciences

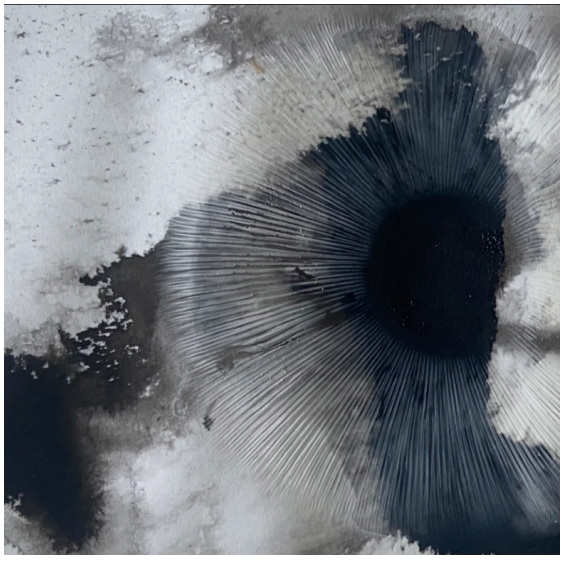
Siobhan McDonald is exhibiting at Centrum Sztuki Współczesnej ŁAŹNIA / **Centre for Contemporary Art LAZNIA** and the show opens on Friday 5th February. Here is a **link** to the show.

COSMIC GAS is a drawing + lithography series that fuses materials devised from poisonous invisible methane gas and explores ideas of what manages to live in the ruins we've made.

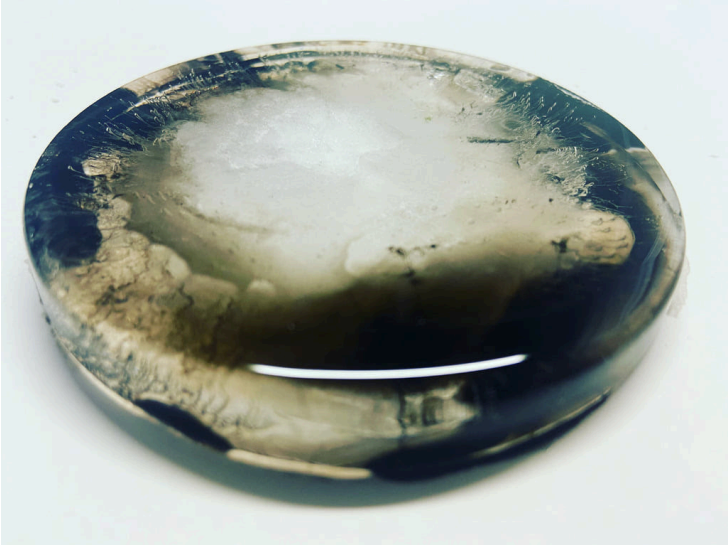
The project examines delicate ecologies and co-existence between the lungs of the earth, humans and plants as the permafrost melts and slowly releases toxic gases into our air. They have a living and dark presence made from the direct imprints of **plant fragments collected from bog sites that used to be living organisms and have eventually become gaseous.** Deepest thanks to **Carla Harper** for inspiring aspects of the project and sharing a love of mushrooms.

Plant fragments, mycelium and ink on Japanese paper





The work is rooted in the mediaeval mythology of boglands as a cultural preserver offering an insight into ancient pagan times. The strange landscape of boglands with many rare geographical features and occurrences explains the large mythology surrounding it. **Tim Robinson**, a celebrated writer and cartographer remarked that "*Mind is being reabsorbed into matter; humanity's imposition of languages, order, meaning, is being sucked down and choked off by nature*." Maybe it is this mysterious timelessness that places the bogs as reminders that we are not mortal. That we are made of the same material.



'Methane Lake'
Arctic ice core and methane ink.

For an upcoming exhibition in 2023, Siobhan is collaborating with **Jenny McElwain** on an idea about **a methane unsustainable future**. Siobhan is also working with **Matt Saunders** to explore **Irish Boglands**.

PHYTOBYTES

JANUARY 2022

PHYTOBYTES needs your input!

Whether you are student or staff, please send any news you have, big or small, to Diego D. Bianchi (***dbianchi@tcd.ie***) with the subject heading “Phytobytes”.