GREEN SHOOTS
maynooth green campus
NEWSLETTER

Issue 3 May 2021

Welcome to the third Maynooth Green Campus Newsletter!

Dr Joe Larragy
Editor/Chair of MGC
Applied Social Studies

Welcome to the third issue of Green Shoots. It comes at a hopeful moment as we emerge from the Covid tunnel and into the light. Our thoughts are with all our colleagues and students who were bereaved or affected in other ways. To our first years, who were confined to working from home for the past year, and who still thirst for that full third level experience, we say, let's make next year extra special.

We have some great news, reports and commentary in this issue. We have another instalment on our very popular profiles and gorgeous photos of birds seen on campus. We have a special feature on bees and pollination, updates on links to learning, Green week, Climate change and Just Transition, SDGs, and commentary. Please enjoy, and join efforts with us.

Maynooth Green Campus Team

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Photo by Maura Boyle

In this edition...

Birds on campus: A survey

Prof Phil Dix

Biodiversity working group

Biology Dept.

Photos by Maura Boyle

Further to our summary of our survey of the birds on campus, presented in Green Shoots No. 1, here are four more profiles of birds from that list all of which are found on campus.

STARLING (Druid) *Sturnus vulgaris*

The starling is a very familiar bird on campus, frequently seen in loose flocks in flight, or perched in surprisingly orderly lines along the tops of buildings. They nest in holes and crevices in walls or trees, and there are numerous suitable locations on campus. There are also several nestboxes, designed for starlings, on the South campus, which are usually occupied. Our survey ranked the starling the 10th most abundant bird on campus, but numbers fluctuate and occasional large flocks could render this an under-estimate.

There has been a small decline in numbers in Ireland in recent decades, but not nearly so great as in Britain, where a 50% decline in numbers was recorded in twenty years between 1991 and 2010 (in Ireland the decline was only 7%), causing the species to be added to the red list of birds of conservation concern. The reasons for the greater stability of the Irish population are unclear, but one suggestion is that the greater retention of high-input grasslands is a factor. It favours the production of crane-fly larvae, a favoured food source for the starling.

MISTLE THRUSH (Liatráisc) *Turdus viscivorous*

The mistle thrush is the largest of our three resident thrushes (the others being song thrush and blackbird), It can be readily distinguished from the song thrush by its very pale brown back, and the more sharply contrasting speckles on the breast. It is also less skulking and more likely to be seen on the playing fields and other grassy areas on campus. It was ranked 22nd in abundance of species on campus, and there are certainly several breeding pairs. Berries are prominent in its diet and it gets its name for its predilection for the berries of the hemiparasitic plant, mistletoe, beloved of the amorous during yuletide festivities. Indeed it is believed to be a major source of dispersal of mistletoe as it wipes the sticky seeds off on tree branches where they germinate and take root in crevices in the bark.

COLLARED DOVE (Fearánbaicdhubh) *Streptopelia decaoto*

One of the most remarkable findings of our survey of the birds of Maynooth University, by a dedicated group of observers, over many hours and eleven months, is that it only yielded a single sighting of this dainty little dove. Remarkable, because it is an extremely common bird in Maynooth, as anybody who puts out food for the

Birds on campus: A survey ...

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Biodiversity working group

Biology Dept.

birds in their garden will attest. This is an illustration of the fact that local variations in bird populations, depending on quite subtle differences in habitat, can be quite dramatic. This species favours human habitation, and the patchwork of gardens with mixed vegetation represented by housing estates. This contrasts with its larger cousin, the woodpigeon, which prefers a more expansive terrain, and was ranked 2nd in abundance (after the jackdaw) on campus.

This is not the only notable feature of this bird. Originally from Eastern Europe and parts of Asia (its Hungarian name translates as 'Balkan dove'), it underwent a North-westerly range expansion in the twentieth century, even more dramatic than the one that more recently brought the little egret to our shores. It colonised Britain in the 1930s, first bred in Ireland in 1959, and by 1970 had reached Iceland!

TREECREEPER (Snag) *Certhia familiaris*

This charming little bird is instantly recognisable from its habit of creeping mouse-like up trees, usually spiralling round the trunk as it goes, before flying to a lower point on another tree to repeat the invertebrates which it winkles out of cracks in the

Maura Boyle

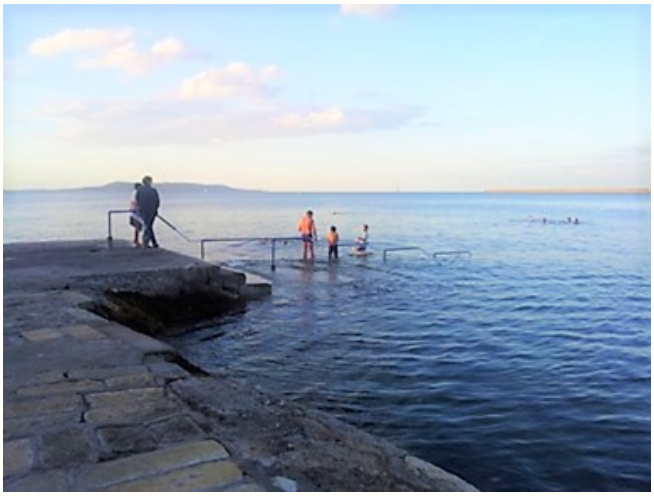
process (it never creeps downwards). It feeds on invertebrates, which it winkles out of cracks in the bark with its thin, down-curved, bill. Although it is inconspicuous, and only ranked 31st in abundance in our survey, its exposed location on tree trunks means there is a good chance of seeing one while walking around the campus, if you keep alert. They favour trees with rough bark, and have long been present on the mature trees on the South campus (and occasionally creeping up the walls of Logic or Rhetoric House!). A surprise finding of the survey was how frequently they can also be seen on the more scattered, and younger, trees of the North campus.

Why Being in Blue Space is good for you

Dr Ronan Foley

Geography Dept.

As part of both Green Week and Social Justice Week, 2021, Dr. Ronan Foley from the Department of Geography at Maynooth University, gave a short talk with Q&A on the value of blue space to people's health and wellbeing. Blue space relates to a range of different waters, from the sea to lakes, canals, rivers and reservoirs, and have become especially important as places to go during the COVID19 pandemic. Here people have been able to have a break in nature and both public health specialists and psychologists have measured the benefits in terms of stress-reduction, nature-



Lyreen river—photo Joe Larragy

connection and attention-restoration. Dr. Foley talked through some of his own blue space and health research, in particular work with graduate students on canals, beaches and swimming pools as well as public engagement projects in Dublin, Maynooth and Kerry on emotional mapping. He has worked a lot with swimmers in the past few years, with regular posts on the RTE Brainstorm site, but also carrying out interviews and participant observation with swimmers from the 40 Foot to Blackrock in Galway and the Guillemene in Tramore. He also noted the value of blue spaces to SDGs 3 and 10 and was especially keen on recoding voices from on and in the water as a way of capturing the special emotional and bodily value of being in blue space.

The Bumblebee Lifecycle

Dr Jim Carolan

Biodiversity working group

Biology Dept.

When we consider the season most associated with bumblebees, we would probably think of summer. Those warm, scent-filled days, accompanying the buzz of the busy bee, as it collects pollen and nectar to bring back to its colony. However, of all the seasons, spring is one of the most critical. At this time of year, you may notice large bumblebees searching for flowers or patrolling around tufts of grass or the bases of hedgerows. These bumblebees are the spring queens and they have just emerged from hibernation and are now looking to establish their colony and begin the bumblebee life cycle.

The spring queen emerges from a dormancy that may have lasted 3 to 4 months. This hibernation, also known as diapause, allows the queen to survive the harsh conditions of winter and is an important developmental period for the queen herself. During diapause, the queen survives on energy reserves stored in her body as fat and lipids and once awoken by increasing temperatures, finding food to replenish her energy stores is her priority. This leads to a busy period of activity where the queen can visit up to 5000 flowers in a single day, highlighting the importance of early flowering plants such as willow and dandelions. Once sustained the queen will begin to search for a new nesting site within which to establish her colony.

Inside the nest, the queen prepares a “pollen loaf”, a mound of pollen and wax (secreted from her body) and starts laying eggs fertilised with the sperm that was stored from mating the previous year. The queen bumblebee controls whether the eggs are laid fertilised, and develop into females, or unfertilised and then develop into males. These first batches of eggs in the early nest will all be female. The queen also forms pot-shaped structures made of wax which she fills with nectar. These nectar pots provide a store of energy for the queen while she incubates the eggs, a task achieved by vibrating her wing muscles to generate heat. After several days of incubation, the eggs hatch and the white grub-like larvae emerge. These larvae are fed pollen and nectar and after two weeks, they spin a cocoon, inside which they grow and pupate, finally emerging as adult workers. Once the workers emerge the queen bee restricts her activities to the colony. Bumblebee queens typically produce 50-200 workers throughout the year, some of which will guard or clean the nest and others will forage for nectar and pollen to feed the next batch of offspring in the colony. These foragers are the bees we see frequently on the fly during the early summer months carrying out essential pollination of our fruit and agricultural crops and native plants. Towards the end of summer, reproduction in the colony switches from the production of workers to the production of males and new queens known as gynes. Male bumblebees leave the nest forever and are sometimes found sheltering, huddled together on flower heads in the mornings or when it rains. Males spend their days feeding on nectar and depositing queen-attracting pheromones around their territory.

New queen gynes also leave the nest to forage for themselves, returning only for shelter. When ready to mate, a gyne flies to the areas where the males have deposited their pheromones and awaits a suitable mate. Once mated the gyne stores the sperm until spring. The falling temperatures in late Autumn induce the new queen to find a suitable site within which to wait out the depths of Winter that usually kills off the old queen and other members of her old colony. Before entering diapause, the new queen forages on late flowering plants such as ivy and builds up the energy reserves needed to survive winter.

So it seems, that the most critical stages of the bumblebee lifecycle coincide with the times we least associate with flowers. If we are to guarantee the hundreds of summer workers that a single bumblebee queen will produce, we must ensure that there are sufficient resources for her, prior to entering diapause and when she emerges from her winter sleep.

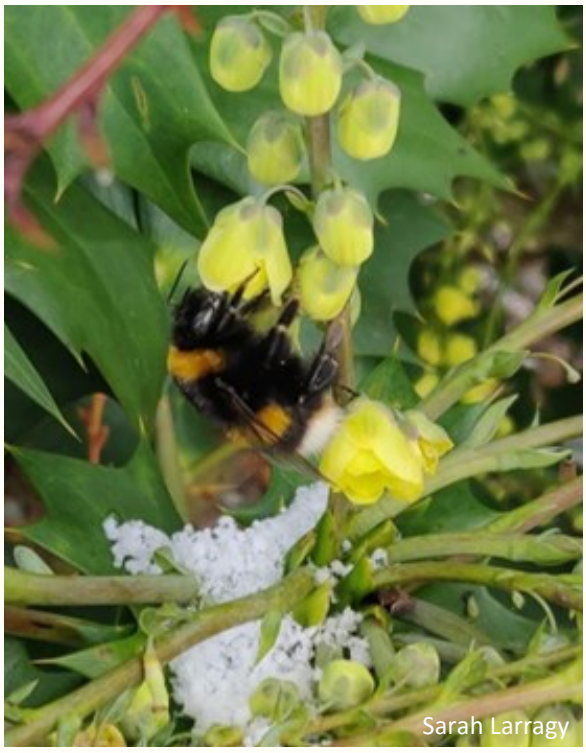
Winter active bumblebees

Sarah Larragy

Biology PhD

Communications & Biodiversity working group

Winter and bumblebees don't usually go together. Normally, winter is when bumblebee queens hibernate (or go through 'diapause') and remain safely tucked away underground until the warm spring weather rouses them. However, sightings of bumblebees during the winter in Britain and Ireland has become more common during the last two decades. The presence of worker bees is evidence that some bumblebee queens are skipping their normal winter slumber to establish colonies in winter instead of summer. Most of the winter bumblebees spotted are the buff-tailed bumblebee species, *Bombus terrestris*.



Sarah Larragy

What are they eating?

Just like their summer cousins, winter bumblebees need pollen and nectar to survive. Research indicates that cultivated, exotic plants provide winter active bumblebees with much of their food. In particular, *Mahonia spp.* bushes are very popular among Winter active bumblebees and studies have found that winter bumblebees can get their fill of food just as well as they can in summer.

Why are bumblebees out in the winter?

We don't know. For quite some time, it has been hypothesised that winter-active bumblebees may be non-native. Horticultural growers in Ireland and Britain historically imported a non-native variety of buff-tailed bumblebee colonies that were commercially produced in mass-rearing facilities. These colonies originated from a buff-tailed bumblebee subspecies that showed winter-activity in warmer areas of its distribution (like the Mediterranean). If these bees became established in Britain and Ireland or mixed with our native bees, this could explain changes in winter behaviour. However, a recent study which examined the DNA of winter and summer buff-tailed bumblebees claims to have ruled this out. Climate change is another possible explanation; if autumn months are, on average, warmer, bumblebee queens may be deprived of the temperature cues needed to flip their biological switch to winter-mode.

Should we be worried about bees coming out in the winter?

Again, it is hard to say. If climate change causes more unpredictable weather, the survival of winter-active colonies may be impacted. How this may affect the overall fitness and dynamics of the buff-tailed bumblebees in Ireland and Britain, we simply don't know.

The Importance of Dandelions

Once considered a major weed, which if you think about it is just a plant growing where we don't want it, the dandelion has recently received a major PR boost through the All-Ireland Pollinator Plan. The plan which encourages us to mow less has resulted in an annual explosion of yellow across our lawns, estates and roadsides. These early flowering plants provide much needed resources for emerging bees and other insects.

Photos by Sarah Larragy

Social Justice & Green Week Conference on Environmental Justice, 10 March 2021

Dr. Patrick Bresnihan

Geography Dept.

Sinead Mercier

Contributing lecturer, Applied Social Studies

> *Environmental Justice ensures that marginalised groups are not disproportionately impacted by climate change or other environmental harms, and that the State's response to environmental challenges is informed by the principles of inclusivity and fairness.* (Community Law and Mediation's Centre for Environmental Justice)

Maynooth University has, through its research, teaching, and the practical work of Maynooth Green Campus, contributed the conceptualisation and practical realisation of environmental and climate justice.

On 10 March 2021, marking both Maynooth Social Justice Week and An Taisce's National Green Week, Maynooth Social Sciences Institute (MUSSI) hosted the all-day on-line event *'Environmental Justice in Ireland'*. Organised by **Dr. Patrick Bresnihan** and **Sinéad Mercier** from the departments of Geography and Applied Social Studies, the event brought together academics, experts, activists and campaigners to share ideas on theoretical and practical approaches to integrating social, environmental and climate justice.

Environmental Justice in Ireland

A wide range of topics were covered from an environmental justice perspective in the first of the day's events, '*What is Environmental Justice in Ireland?*' chaired by **Dr. Patrick Bresnihan**. **Andrew Jackson (UCD)** discussed his strategic litigation work with Climate Case Ireland and the all-island Environmental Justice Network Ireland. **V'cenza Cirefice (NUIG and artist)** gave an overview of extractivism and sacrifice zones from the perspectives of communities facing gold mining in both Cyprus and the Sperrin Mountains in Tyrone. **Rose Wall, CEO of Community Law and Mediation**, described the new work ahead of the Centre for Environmental Justice, including the need to provide marginalised communities with representation when combatting flooding, air pollution and high energy costs.

Environmental Justice & Energy

The second session focused on energy poverty (being unable to heat or cool one's home), energy justice (how and where is dirty energy produced) and a just transition (the rights of workers and communities during the phase-out of high carbon activities).

This session chaired by **Sinéad Mercier** included representations from **Michelle Kearns (National Traveller Money Advice and Budgeting Service [MABS])** who outlined how three in four Travellers in mobile homes spend 28% of their income on energy. **Macdara Doyle (Irish Congress of Trade Unions)** outlined the need for clear solutions for Bord na Móna workers and their community in the Midlands, while **Jessie Dolliver (Not Here Not Anywhere)** outlined the alternative to fossil fuel and potential to combine this with high quality jobs and community development.

Environmental Justice & Housing

The session, chaired by **Dr Rory Hearne**, Applied Social Studies, kicked off with **Dr. Panagiota Kotsila (Barcelona Laboratory for Urban Environmental Justice and Sustainability)** who cautioned about 'green gentrification' in Dublin's Liberties. **John Bohan (MU & CATU)** made the case for a socially just and green plan for public housing while **David Poland (NYCI - Youth 2030)** addressed intergenerational climate injustice, and the role of green jobs and retrofitting in the transition.

What next for the green movement in Ireland?

The final session on what next was chaired by **Séan McCabe (TASC Just Transition Centre)** with in-depth analysis of the day's events, and recommendations from speakers on where social and environmental justice advocates can move on from here**. John Sweeney (Professor Emeritus in Geography, Maynooth University)** gave a clear-sighted run-down of the state of play in relation to the impact of climate change in Ireland. **Saoirse McHugh (Climate campaigner)** gave a blue-sky blueprint of where we can go from here, and a frank admission that the way forward is clouded, but there is a wealth of knowledge from all society, but particularly new voices, if the movement stays inclusive and welcoming. **Sian Cowman (Slí Eile)** outlined the need to recognise that the climate and biodiversity crises have been created through capitalist, patriarchal and racist exploitation – but solidarity with one another and 'accompaniment' with worst-affected communities will lead us out. The importance of including and prioritising often unheard voices was reiterated by **Jessica Dunne (Fridays for Future, the school strikers)** who gave a brilliant overview of the positive impact School Strikers in Ireland have made on public climate policy since just 2018.

Maynooth Recommended as Decarbonisation Zone for Kildare

Michael Kenny

Community and Adult Education

Maynooth Green Campus are delighted to report that Maynooth has been selected to be the county's decarbonization zone, following a meeting of Kildare County Council at the end of April. The town held off stiff competition from 15 other applicant towns in a criteria-based selection by the Kildare County Council Climate Action Team. The decision was forwarded to the Dept. of Housing, Local Government and Heritage on April 30th. The zones will contribute to reaching ambitious targets set out in the Climate Action Plan focused on a 50% reduction in carbon emissions by 2030.

Maynooth Sustainable Energy Community did a remarkable job in pulling together several local organisations and making its proposal. Maynooth Green Campus, Zero Waste Maynooth, Maynooth Tidy Towns and Maynooth Community Council gave their backing and a total of 27 groups provided support to the Maynooth proposal. We are very proud that Maynooth has been recommended as the Decarbonisation Zone for Kildare. Communities will play a vital role in helping to design and realise this climate ambition.

The next step is that Kildare County Council – with support from the Mid-East Climate Action Regional Office (CARO) and the Council Climate Action, Planning and Environmental Teams – will provide a plan to guide the implementation of the decarbonisation measures in Maynooth, and the resources, supports, and climate action funding that will be provided. Kildare Co Council will take a lead and carry much of the workload.

Several exciting decarbonisation opportunities have been identified for Maynooth including household retrofitting, community energy, cycling and pedestrian networks, planting of indigenous trees, progressive agriculture and hedgerows, youth engagement, and working with Maynooth University. We in Maynooth Green Campus look forward to building on the great collaboration we have achieved over recent years and look forward to working together with Maynooth Sustainable Energy Community in ensuring that this plan is implemented.

Students Union 2021 elections go online

Kelly Rennick

MSU President 2019/2020

Maynooth Students' Union (MSU) made another bit of history during Green Week when, on 10 March 2021, election of sabbatical officers went online. This is the first time over 45 years that this has been done. While the pandemic may have been the immediate context, there were other factors motivating the change.

MSU has committed to itself achieving best practice on environmental sustainability. MSU's constitution includes the role of a green campus senator & they have begun work on drafting the role of an environmental officer. The environmental cost of print-based elections is considerable - some 40,000 paper resources were consumed during the 2020 sabbatical elections.

The Students union has been working on the elimination of plastic waste and promoting responsible environmental behaviour in its day-do-day activities. For more information on MSU environmental policies and practice, contact Anne Marie Cudden, who manages the front office at MSU and is an active member of Maynooth Green Campus.

Joe Larragy

Maynooth University makes Impact on SDGs

Dr Gemma Irvine

Vice-President for Equality & Diversity

Maynooth University ranked 1st in Ireland for Reducing Inequalities and in Quality Education in *THE Global Impact rankings 2021*

Maynooth University (MU) has been ranked as Ireland's leading university and in the top 5% of universities globally (at number 32 out of 669 institutions) for its research on social inequalities, policies on discrimination and commitment to recruiting staff and students from under-represented groups (SDG 10 Reduced Inequalities).

MU is in the top #201-300 universities in the world as ranked by THE University Impact Rankings 2021, which capture universities' impact on society based on their success in delivering the United Nations Sustainable Development Goals (SDGs). Over 1,000 institutions from 98 countries participated globally. Recognising MU's commitment to progressing gender equality, MU was placed 2nd in Ireland and 60th globally for SDG 5 - Gender Equality. This reflects our research on the study of gender equality, policies on gender equality and commitment to recruiting and promoting women.

MU is joint first in Ireland for Quality Education (SDG 4) and ranked #101-200 globally for our contribution to early years and lifelong learning, pedagogy research and our commitment to inclusive education.

Summary of the findings:

- **SDG10 Reduced Inequalities** ranked 32nd out of 669 Institutions (overall score of 80.4%), 1st in Ireland;
- **SDG5 Gender Equality** ranked 60th out of 776 Institutions (overall score of 67.7%), 2nd in Ireland;
- **SDG4 Quality Education** ranked 101-200 out of 966 Institutions (overall score of 68.5%), =1st in Ireland.
- **Overall** for THE University Impact MU ranked 201-300 out of 1,115 institutions (overall score of 72.1%).

About the rankings

The Times Higher Education (THE)University Impact Rankings cover how an institution embodies the SDGs in their internal practices, policies and procedures, "outreach" in society, and also their research activities.

About the SDGs

The UN 17 Global Goals for Sustainable Development (SDGs) were adopted in 2015 and aim to achieve a better and a more sustainable future for all by 2030. The goals address global changes including poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.

Stephen Seaman

Maynooth Campus Grounds Supervisor

Easy Treesie: 1,000 native trees for Campus

Easy Treesie, founded by schoolteacher Orla Farrell, and supplied with plants by Coillte and other partners, aims to plant a million trees with Ireland's one million schoolchildren across the island of Ireland by 2023. In their Plant-for-the-Planet challenge their aim is for every child in Ireland to plant a tree. For National tree week 2021, Maynooth Campus has partnered with Easy Treesie, who donated 1,000 native Irish trees to plant on the grounds. Stephen Seaman, Grounds Supervisor, agreed to take up the offer and the trees will be planted over the coming months.

Choosing the right trees for the landscape is key to developing the campus sustainably in line with expansion anticipated in our master plan. The varieties included Betula pubescens (Downy Birch), Alnus glutinosa (Alder), Betula pendula (Silver Birch), Quercus robur (Oak), Pinus sylvestris (Scotts Pine) and Salix spp. (Willow).

These native Irish varieties will promote biodiversity and resilience, and provide an environment that benefits the campus community and local population.

Maynooth Green Campus are delighted to be part of this project and look forward to helping Easy Treesie achieve their goals. If you would like to support this project you can find out more at https://easytreesie.com/

Anne Marie Cudden in MSU with prize for Best Leap Card Agent 2020

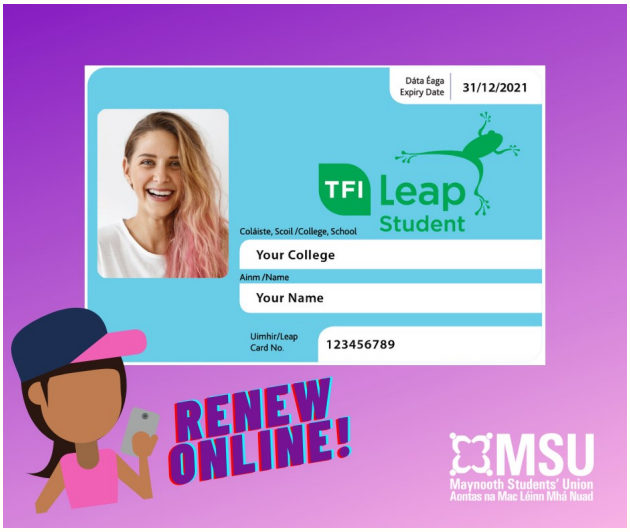
Thanks to Ann Marie Cudden for her energetic promotion of the card and also her tireless work promoting best practice on sustainability in MSU. Student Leap Cards can be obtained on line via the MSU on-line shop (*shop@msu.ie*) so students can still avail of this service.

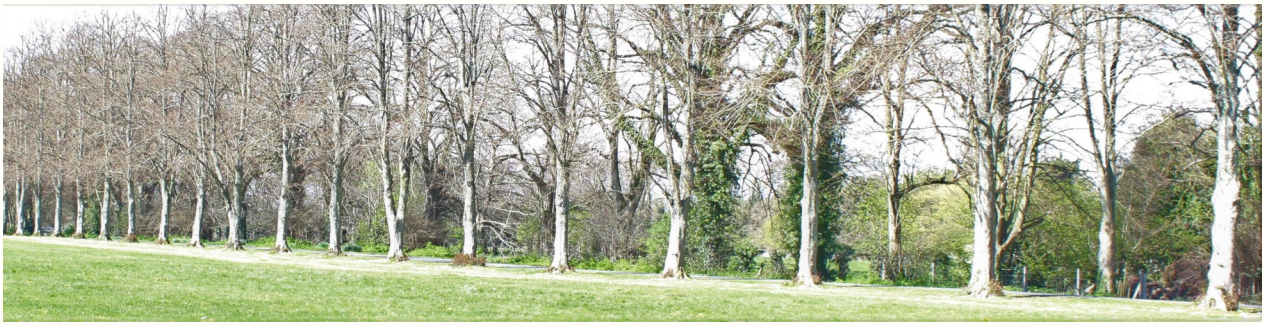
Anne Marie Cudden

Front Office Manager MSU

Leap Year on the cards for MSU

Maynooth Students' Union, which is a sales agent for the Student Leap Card, has seen a threefold rise in its pre-lockdown sales of the card, which increased to 5,500 between 2017 and 2020. Not surprisingly MSU scooped the *Best Leap Card Agent* prize awarded by Student Leap Card in October 2020, based on votes from students.





Dr. John Cullen

Director of Undergraduate Teaching & Learning, School of Business

Maynooth to receive €1m for Low Carbon Sustainable Enterprise curriculum

Maynooth University is part of a consortium led by UCC which recently received funding to develop a suite of programmes titled 'Sustainability in Enterprise: Delivering a Low Carbon Future' (or 'Sustainable Futures' for short).

Maynooth University will receive over €1 million over the four years of the project which aims to develop enterprise-informed sustainability courses and modules that align with Ireland's climate action strategies.

Young Reporters for the Environment (YRE) and Climathon/What the Hack

Dr. Iain Macdonald

Head of Department of Design and Innovation

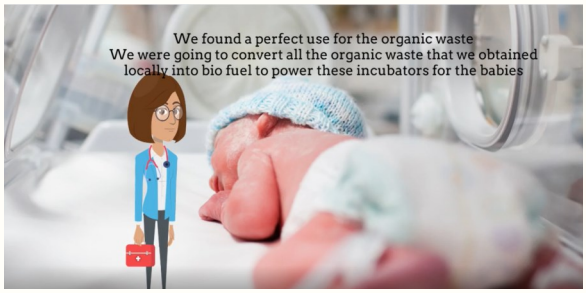
Over the 2020/21 academic year I was really pleased to be able to offer two outstanding live projects to my students taking the 1st Year elective PD162 *Design Thinking & the Art of Innovation*. As an elective it brings a cohort of multidisciplinary groups together to apply the theory from an earlier module into applied practice.

The *Young Reporters for the Environment* (YRE) competition, being piloted in several Third level colleges in Ireland by An Taisce, allows students under 26 to produce a text, video or photographic report, The French Embassy's *Climathon/What the Hack* initiative provided opportunities to devise innovative solutions for environmental challenges through alternative environmentally focussed projects that allowed us to engage our students with their communities and locality.

Despite current travel restrictions students were encouraged to record and observe their

immediate vicinity and reach out to local organisations. Using applied design thinking to draw out insights and solutions they explored new ways of problem solving and working with others. The multidisciplinary nature of the cohort offers a powerful combination of skills and abilities in research, analysis, problem solving and media communications.

This module and the competitions aimed to provide a solid foundation for future working practices in industry and academia that require experience and ability to work effectively in multidisciplinary teams. By March 2021 we had the whole class engaged in 15 projects. On 5th May all 15 groups presented their videos, 13 of which were entered into the YRE and 3 in Climathon.



This is an extraordinary achievement for this cohort of 1st Years, as most had never met in person and have worked online all year, some from as far as India, China and Korea. Despite the challenges of different time zones and online working they have demonstrated, through a rich cultural diversity of voices, that the impact of waste, litter and climate change knows no borders,

I am so proud of their achievements and the quality of their work; they motivated each other to be resourceful and imaginative in their conceptual thinking and communication delivery. The students have really enjoyed the research and the applied learning to create and communicate their design solutions through the competitions and that this generation demand to be heard.

Dr Máire Nic an Bhaird

Dept. of Froebel

Tairseach —Froebel Project Live

Tairseach (Threshold) is the name of the community engaged learning project which we deliver through our module *The Language of Love/ Teanga an Ghrá*. It is a Project Live initiative we run with the support of Maynooth Green Campus.

Grounded in a pedagogy of community-engaged learning, *Tairseach* embeds the SDGs across MU curriculum. It explores and enhances biodiversity in the rooftop garden atop the MU School of Education and highlights the rich biodiversity of the magical campus of MU! *Tairseach* also addresses environmental issues through enhancing natural outdoor learning spaces and by strengthening local and campus social capital. A key feature is collaboration between Froebel and other academic departments. For example, Geography postgraduate student Leah Kasony, supervised by Dr Ronan Foley, uses the work of Froebel students, to develop a GIS, capturing and analysing spatial and geographic data for *The Tairseach Tree Trail* across both campuses.

Student feedback from this community engaged learning project has been very positive, with students stating that it was their '***most enjoyable and interesting module to date'.*** Much is due to the collaborative nature of the Froebel Department, with Maynooth Green Campus, Kildare County Council and in particular the contribution of Grounds Supervisor Stephen Seaman.

The MU community and visitors to the lush green campus will be able to access the *Tairseach Tree Trail* via an app and/or MU website where they can enjoy this walk but at the same time, learn a little something about the native trees & hedgerows of Ireland and the ecology of the campus.

Dearcán—weathering the storm Covid-19

Laoise Ní Chléirigh

Dept. of Froebel

Dr Máire Nic an Bhaird and Laoise Ní Chléirigh from the Froebel Department were earlier awarded the Kildare County Council Healthy Ireland 2020 bursary to create their project Dearcán. In Norse heritage, an acorn (dearcán) was placed on windowsills to protect homes during storms. Under lockdown, Dearcán offered protection in weathering the storm of Covid-19. Dearcán delivered an online programme for Kildare citizens focusing on community responses to 'Climate Change', 'Biodiversity in My Garden Winter and Spring', 'Being Creative' and 'Exploring Heritage on My Doorstep'. Dearcán enabled citizens in improving biodiversity at home, as a direct response to climate change, irrespective of how small the outdoor space they have available to them, from window ledges to balconies, terraces, a wall or garden. Dearcán connected with citizens via an online programme comprising the live online Dearcán Flash Talk 2021, followed by the pre-recorded Dearcán Workshop Episodes.

The Dearcán Flash Talk 2021 began on 5th March 2021 with an introductory online lecture 'Heritage on My Doorstep' from Dr Máire Nic an Bhaird and Laoise Ní Chléirigh. The emphasis was placed on outdoor beauty spots and natural environments for participants to visit and engage with, exclusive to Kildare. This lecture was practical in nature, emphasising natural examples of a circular economy, and sharing accessible and inclusive ideas on what we can do to live more circularly, drawing on themes such as biophilia, love, and how connection with nature can have a profoundly positive effect on our holistic well-being. Additionally, there are ten 5-minute presentations from Maynooth University students and staff on 'Biodiversity Tricks and Tips' - how to make garden spaces work, no matter how small, for the holistic wellbeing of Kildare citizens and the wellbeing of the planet in these especially anxious times.

Picture from Trail

Prof Bernard Mahon

Professor of Immunology

Climate Change: Impacts on Communicable Diseases in Ireland 2035 to 2050 (Postgraduate Student Conference)

Maynooth University postgraduate students studying for their *MSc Immunology & Global Health* organized this conference in December 2020 to present their reports on how Ireland needs to prepare for climate change. This year due to the difficulties around group work and the crowded information space on vaccines, we have changed things a little.

Our BI608 students have written reports and presented their findings on the topic "Preparing for Climate Change: Impacts on Communicable diseases in Ireland 2035 to 2050". They have examined 4 issues -Water borne diseases (drinking), Water borne diseases (recreational), Vector borne diseases (ticks) and vector borne diseases (flies/ mosquitos).

Working in virtual groups, students prepared reports that examined how climate change will influence the pattern of communicable disease and what needs to be done now to mitigate the predictable effects. Students concluded that there were four priority areas: Emerging threats to drinking water; Water-borne diseases likely to affect tourism and recreational use; vector-borne diseases associated with increased distribution of ticks and the prevalence of vector borne diseases linked to mosquito proliferation. Student reports were presented to the public in 10-minute showcase presentations followed by debate.

There were clear and actionable recommendations to Irish agencies such as the HRB, SFI and EPA on the priorities for Irish research. Perhaps the most worrying aspect to emerge was that very little foresight planning seems to be taking place about communicable diseases and climate change. Similarly, the enterprise opportunities for developing environmental and clinical diagnostics have not really been appreciated outside the EPA. The students concluded that some prioritization in our funding agencies in the 2021-2026 window, could both prepare us better for health challenges and provide SME with development opportunities for new products - an aspect missing in almost every agency's portfolio.

The presentations to the public were through TEAMS and provoked lively debate, not least from some of our agency attendees! The students learned how to prepare evidence to support decision making, how to present data in a concise way and how to defend their conclusions. The rest of us began to see that 2050 is not so far away, and that our future tourism, recreation, farming, and national infrastructure face health-threats that are predictable and merit greater planning.

Marchathon 2021

Mireia Guardino Ferran
Green Campus Co-ordinator

The National Transport Authority's 'Smarter Campus Travel' Marchathon faced added challenges this year due to Covid-19 lockdown in March. Normally, participants form a team and members motivate each other and walk together. This year they had to walk separately yet pull together. It is heartening to report therefore that in Marchathon 2021,

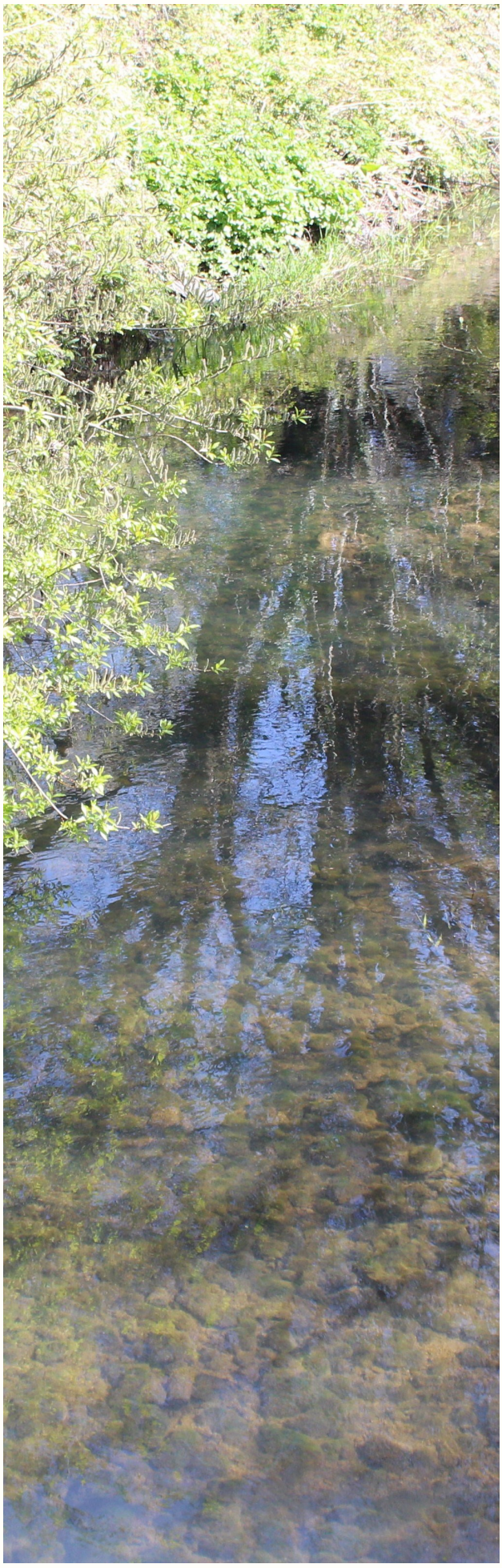
Rank	Team	Organisation	Average Steps by Team
1	Devo and the Queens	Maynooth University	526,647
2	Nerd Herd	Maynooth University	502,356

Maynooth Campus saw 32 teams with 146 members clock up a whopping 9,016,802 steps betweeen them. Thanks to all who took part and thanks to NTA's Marchathon team for their encouragement and support! Congratulations to *Devo and the Queens* who ultimately buzzed ahead closely followed by *The Nerd Herd*. Members of both teams received trees to plant from Campus services.

Picture: Devo & the Queens (Dept. Of Biology) collecting their trees. Merissa Cullen (left) Sarah Larragy (center), Devlin Wall-Coughlan (right) with Stephen Seaman, Maynooth's Grounds Supervisor (far left). Other team members Katie Dunphy, Stephen Gargan & Laura Bitterlich, not in photo.

Picture below: Andrea Woodcook (left) and Magda Piatek (right) from the Nerd Herd team from the Dept. Of Biology with Mireia Guardino-Ferran (MGC coordinator, center) receiving their trees. The other team memberwere Hazel Dunbar, Joy

Clarke and Annatte Margalit.



2020 was not a standstill for Climate!

Prof John Sweeney

Emeritus Professor
Climate Change

For the first time in many years, global greenhouse gas emissions fell significantly in 2020 because of the pandemic curtailing economic activity and mobility throughout the world. A fall of 6.4% occurred, roughly equal to the annual emissions of Japan, Germany and the United Kingdom combined. What will happen as economies like these open up again will be important to monitor. Will the recovery be a green recovery, or will it be back to 'business as usual'?

Despite this fall in emissions, the concentration of Carbon Dioxide in the atmosphere continued its relentless rise. This was aided by an acceleration in emissions from the continued destruction of forests, especially in the tropics. An area of rain forest half the size of Ireland was lost, mainly from Brazil, but ominously also from parts of Africa such as the Democratic Republic of Congo. Clearing forest for agriculture was the main driver of this and these clearances, combined with large scale burning, resulted in the release of 2.64 Billion tonnes of CO2.

The problems were not confined to the tropics however and readers will remember the horrific fires that engulfed parts of the western United States, Australia and Siberia. Some contribution was made to these by the warming itself where extremely high temperatures and drought created a ready-made fuel source. Sadly, for many parts of the world, the progress made pre-pandemic in limiting deforestation showed signs of unravelling last year.

A notable event occurred in April this year when atmospheric CO2 concentrations reached 417 parts per million. The significance of this is that for the first time, 2021 is likely to see concentrations 50% above pre-industrial levels for a sustained period. As spring gives way to summer and the leaves begin to photosynthesise more, levels will fall back slightly. But a landmark has been passed which we will be unlikely to recover from for the rest of this century at least.

As we have sat at home for the past year, climate has continued to respond to human influences. 2020 is now known to have been the joint warmest year (with 2016) ever, measured by thermometers. For Europe it was the warmest. In Ireland we escaped some of the extreme events that characterised former years with a cool and wet winter without the major storm activity that had characterised some former years. The Atlantic hurricane season however broke records as the normal alphabet of names was exceeded by 30 named storms and the Greek alphabet had to be invoked from Alpha to Iota!

Indeed, sub-tropical storm Alpha made landfall in Portugal, the first ever recorded occurrence for that country.

One of the most notable events in 2020 was the heatwave conditions that affected northern Siberia. Almost every textbook on climate that Irish students read contrast Ireland's oceanic climate with a continental regime where the influence of the sea is negligible and bitterly cold winters give way to warm summers. The location often used to exemplify this is Verkhoyansk, a small town of 1,300 people in north eastern Siberia, well north of the Arctic Circle. It is probably the coldest permanently inhabited place on the globe with average January temperatures of minus 45°C. Indeed it vies for the title with a nearby location on the basis of an extreme low value of minus 67.8°C! Summers are short and just slightly warmer than Ireland for a few weeks in July. What was strange last year was the fact that Verkhoyansk hit over 38°C during the summer and endured a prolonged heatwave.

Sarah Larragy

Using newly developed statistical and modelling methods, climate scientists estimated that this event was 600 times more likely to have occurred due to human induced climate change. Advances in computing power enable multiple model runs to be made now, some with pre industrial CO2 levels and some with current levels. The probability estimates provide conclusive proof of the way climate change is driving extremes to change. The room for climate scepticism has dwindled away. Indeed such was the heat experienced in that remote part of the world that part of the Arctic Ocean that would normally have frozen over by late September remained ice free until early November. A record number of over 400 voyages across the Arctic between Europe and Japan/China,/Korea took place last summer, a sign of things to come as the Arctic sea ice dwindles.

As the build up to COP26 in Glasgow proceeds, it is clear that not even the pandemic can slow down climate change and the need for radical action is urgent and evident. We all must do what we can to assist this, however small our efforts might seem. So continue to support Maynooth Green Campus as sowing the seeds for the next generation to hopefully clear up the mess the present generation has created!

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