

9-12 APRIL 2019
EDINBURGH, UK

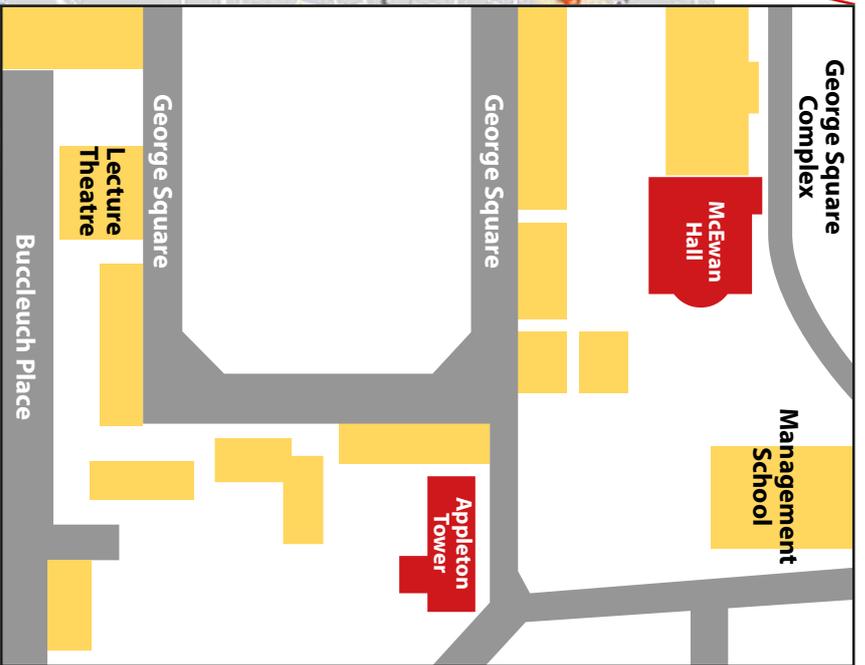
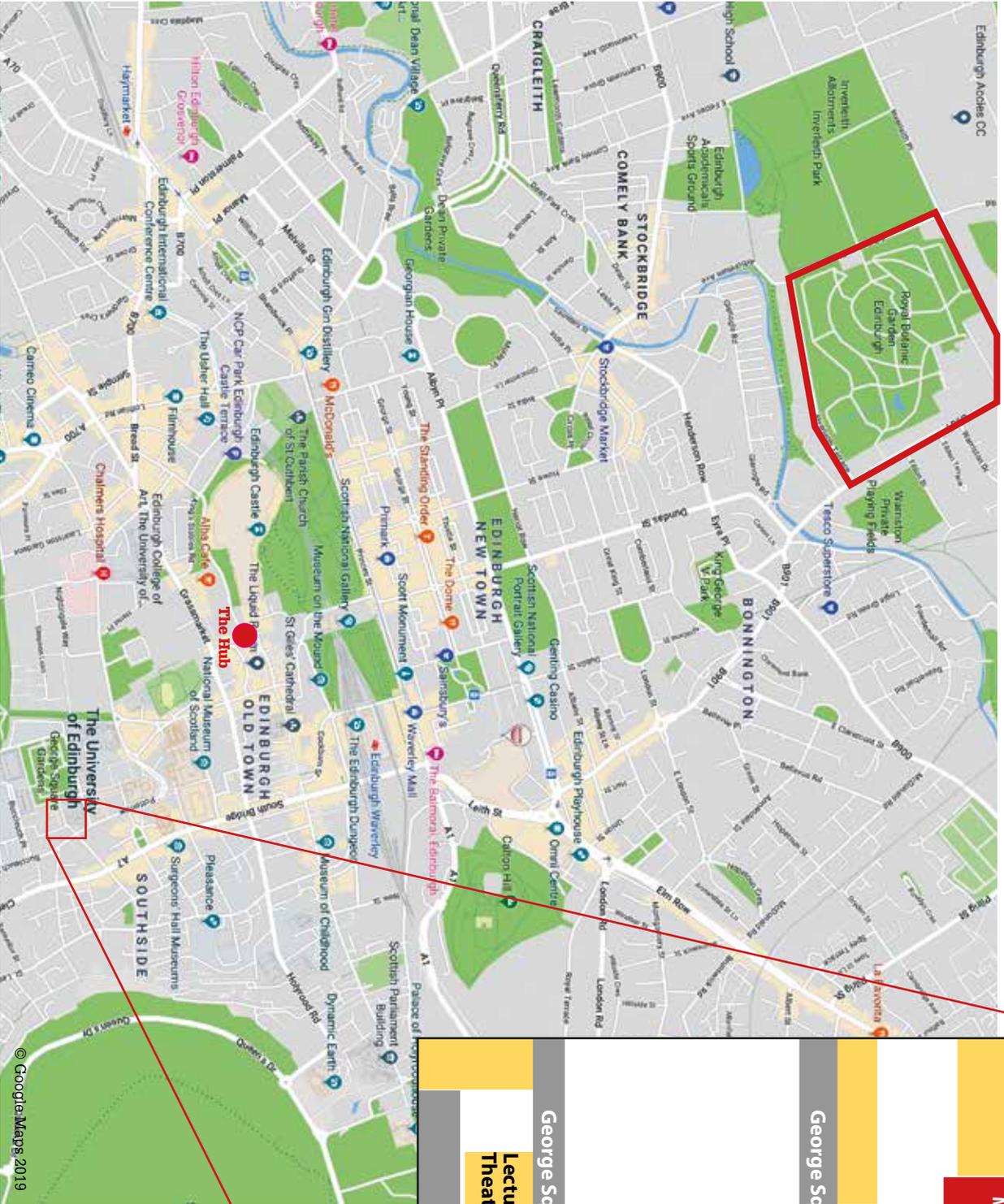
#UTE2019

UNIFYING TROPICAL ECOLOGY:
STRENGTHENING COLLABORATIVE SCIENCE

Society for Tropical Ecology [gtö]



LOCATION



UNIFYING TROPICAL ECOLOGY: STRENGTHENING COLLABORATIVE SCIENCE

9–12 APRIL 2019
APPLETON TOWER
EDINBURGH, UK

CONTENTS

LOCATION	2	PRESENTER INFORMATION	12
CONTENTS	3	ORAL PRESENTATIONS	13
ORGANISER'S WELCOME	4	POSTER PRESENTATIONS	14
PRESIDENT'S WELCOME	5	PRIDE IN OUR COMMUNITY	22
PROGRAMME OVERVIEW	6	INFORMATION FOR DELEGATES	23
PLENARIES	7	ABOUT EDINBURGH	26
WORKSHOPS	10	THINGS TO DO IN EDINBURGH	28
		CODE OF CONDUCT	29

Sponsors:

We are delighted to welcome Frontiers in Forests and Global Change to the exhibition area. If you would like more information, please contact Timothy Gardner: timothy.gardner@frontiersin.org.



Front cover image credit:

Alberto S. Ballesteros (Instagram: @cochambrator)

WELCOME FROM THE ORGANISERS

Welcome to the first Joint Meeting between the British Ecological Society Tropical Ecology Group and the Society for Tropical Ecology.

The conference is also the 2019 Annual Meeting of the Society for Tropical Ecology and we are delighted to bring our European colleagues to Scotland. The meeting aims to showcase the collaborative nature of ecological science, as well as the benefits of collective approaches to conservation outcomes. Nature in the tropics is under enormous pressure from humanity. We are increasingly aware that this is often driven by decisions and actions taken far outside the tropics. Resilient partnerships between regions, institutions and individuals are going to be essential in understanding and facing the oncoming changes in the Earth system. International events such as this meeting can play a key role in unifying the research community behind common goals. We welcome you all to use this meeting to build and nurture ever stronger collaborations for the future.

LOCAL ORGANISING COMMITTEE

Katharine Abernethy

University of Stirling and Institute for Tropical Ecology Research, Gabon

Daisy Dent

University of Stirling & Smithsonian Tropical Research Institute, Panama

Kyle Dexter

University of Edinburgh & Royal Botanic Gardens Edinburgh

Aline Finger

Royal Botanic Gardens Edinburgh

Caroline Lehmann

University of Edinburgh

STEERING COMMITTEE

Lindsay F Banin

Center for Ecology and Hydrology, Edinburgh & British Ecological Society Tropical Ecology Group

Pierre-Michel Forget

Muséum National d'Histoire Naturelle, France & Society for Tropical Ecology

Chris Kettle

Bioversity International and ETH Zurich

Yadvinder Malhi

University of Oxford & Association for Tropical Biology and Conservation

Pia Parolin

INRA, University Côte d'Azur, France & Society for Tropical Ecology



THE UNIVERSITY
of EDINBURGH



Royal
Botanic Garden
Edinburgh

UNIVERSITY of
STIRLING



GTÖ PRESIDENT'S INTRODUCTION



Dear participants of the Joint Meeting of the Society for Tropical Ecology (gtö) and the British Ecological Society (BES)

I am very pleased to welcome you at this first joint meeting of the gtö and BES in the city of Edinburgh, jointly hosted by the University of Stirling, the University of Edinburgh and the Royal Botanic Garden Edinburgh. This collaborative venture is bringing together ecologists from the UK and Europe, together with their research partners from across the entire tropics, and we aim at celebrating the union of tropical ecologists, and to strengthen collaborative science. No doubt that this international meeting in Europe will promote the work of diverse research groups, foster innovation in linking people, research topics, countries and continents and inspire participants to collaborate in work that will strengthen the field.

The program includes 4 internationally renowned plenary speakers, and 14 thematic sessions that represent collaborative research that spans national boundaries, both within and across Europe and the tropics. We aim to create a high profile forum for the discussion of timely, innovative and/or important questions, provide local flavour within the programme, and showcase integration with disciplines outside of ecology including other natural sciences, social sciences, arts and humanities. This is particularly relevant today, in light of the changing political landscape in Europe. Let's reaffirm European scientific collaborations and promote further collaborative endeavor between European researchers and those in tropical countries, as well as facilitate and support collaborations within the tropics. I wish you to enjoy the talks and sessions, and develop many partnership with your colleagues without frontiers.

Pierre-Michel Forget
Society for Tropical Ecology (gtö) President

BES PRESIDENT'S INTRODUCTION



It is a great pleasure to welcome you to Edinburgh for this joint meeting of the gtö and the BES Tropical Ecology Group (BES-TEG); Unifying Tropical Ecology: Strengthening collaborative science.

This meeting is special because it brings together ecologists from the UK and Europe, along with their many collaborators across the tropics, to ask important, timely and far ranging questions about tropical ecology. A particular goal of the meeting is to celebrate and foster collaborative research, especially among groups of ecologists within the UK and Europe, but also with partners across the tropics. To this end, a series of exciting thematic sessions bring together research groups from across Europe and the tropics to celebrate collaborative research in tropical ecology that spans national borders.

But it is also of note that the Association for Tropical Biology and Conservation are supporting the meeting, promoting participation from its new Africa Chapter. This further promotes the diversity and collaborative nature of the meeting.

The conference organisers have put together a very exciting programme, covering many perspectives and formats that will no doubt encourage lively discussion and debate. Organising conferences has rewards, but it is also hard work. I would therefore like to take this opportunity to thank all involved for putting together such an exciting and diverse programme.

Unfortunately I am unable to attend the meeting, but I wish you an enjoyable and stimulating meeting.

Richard Bardgett
BES President

PROGRAMME OVERVIEW

	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Tuesday 9 April	09:00 – 10:30 Registration & Coffee	10:30 – 12:30 Welcome & Opening Plenary	12:30 – 14:00 Lunch	14:00 – 16:00 Parallel Sessions	16:00 – 17:30 Poster Session	18:00 – 20:30 Welcome Reception									
Wednesday 10 April	09:00 – 10:00 Plenary	10:00 – 10:30 Coffee Break	10:30 – 12:30 Parallel Session	12:30 – 14:00 Lunch	14:00 – 16:00 Parallel Sessions	16:00 – 17:30 Poster Session & gto AGM						19:00 – Late Conference Dinner & Ceilidh*			
Thursday 11 April	09:00 – 10:00 Plenary	10:00 – 10:30 Coffee Break	10:30 – 12:30 Parallel Session	12:30 – 14:00 Lunch	14:00 – 16:00 Workshops	16:00 – 16:30 Coffee Break	16:30 – 17:45 Plenary & Close								
Friday 12 April	Post Conference Tours*														

* These are additional costs that are booked during registration. All post-conference tours are now fully booked. You can purchase a conference dinner ticket at the Registration Desk for £55.



PLENARIES

All plenaries will take place in the McEwan Hall Auditorium.

Tuesday 9 April: 11:00 – 12:00

WILLIAM BOND

Emeritus Professor of Grassland Ecology. University of Cape Town, South Africa



Professor William Bond is an ecologist with broad interests in the processes most strongly influencing vegetation change in the past and present, including fire, vertebrate herbivory, atmospheric CO₂ and climate change.

Bond obtained a PhD degree in ecology at the University of California, Los Angeles in the US in 1987. He started out as a scientist at the forestry department, Saasveld Forestry Research, and later moved on to the University of Cape Town where he is now an emeritus professor in biological sciences after serving for four years as chief scientist at the South African Environmental Observation Network.

Bond has served on the boards of the South African National Botanical Institute and of Cape Nature, and on the editorial boards of several journals. In 2013, he was elected a foreign associate of the US National Academy of Sciences. He is frequently invited to give talks at international conferences and symposia, and has reviewed for many journals.

He has authored and co-authored over 200 papers and three books. He has been invited to co-author and contribute to several pieces, including a completely new introductory book on world fire, an article on fire ecology for an Encyclopaedia of Biodiversity and a “topical insight” on global fire for the new edition of Strasburger’s Plant Sciences.

Bond’s research has had significant impact on different areas of ecology at different phases of his career and he was ranked by Thomson Reuters as one of the top 3 200 most influential researchers around the globe.

Open Ecosystems: Beyond the forest edge

Tropical grassy biomes are a major anomaly to the idea that climate determines global biome distribution. They share climates warm enough and wet enough for forests and often form forest/savanna mosaics. For many years, open ecosystems were interpreted as deforested and degraded products of human settlement or natural systems confined to soils hostile for tree growth. Neither hypothesis explains the vast extent of non-forested ecosystems. Instead consumer control of trees, by fire and/or large vertebrate herbivory, coupled with feedbacks to soil properties of these alternate biome states, account for most of the climate mismatch. Open ecosystems extend far beyond the tropics accounting for ~ one third of the world’s vegetated land surface. Tropical studies are leading the way in

developing protocols for identifying major controls on global open biome distributions. These studies have important implications for international policies to plant trees in open ecosystems as a strategy to reduce global warming. Naïve afforestation could threaten the rich endemic biota of ancient open ecosystems for uncertain climate gains.

Wednesday 10 April: 09:00 – 10:00

KIM MCCONKEY

National Institute of Advanced Studies (Bangalore, India) and the University of Nottingham, Malaysia Campus



Kim McConkey is an independent researcher affiliated with the National Institute of Advanced Studies (Bangalore, India) and the University of Nottingham, Malaysia Campus. Her primary research interests are in animal-plant interactions across tropical Asia and the Pacific and its relevance to forest and wildlife conservation. Based in this region for the last two decades, Kim has been involved in research on frugivory and seed dispersal in Indonesia, Malaysia, Thailand and Tonga.

Kim obtained her PhD from the University of Cambridge (UK) and conducted postdoctoral research with Victoria University (NZ). In 2003, after a contract with UNEP-WCMC, she moved to India with her husband. She decided to pursue an independent research career that would allow her to balance her time with research and raising her two boys, 5 dogs and 1 horse.

Kim is working to increase an understanding of plant-animal interactions in students and young researchers in Asia, by initiating frugivory-seed dispersal workshops in different Asian countries (jointly with a colleague). Her recent efforts are focused on understanding how animal behaviour and variation within populations impacts seed dispersal processes and responses to disturbances, and she has worked to varying extents on a range of mammals including bats, primates, elephants, squirrels and deer.

The giant fruits and frugivores of South-east Asia

The diverse megafauna that inhabited South-east Asia during the Pleistocene – such as stegodons and huge straight-tusked elephants – has been reduced in current times to limited populations of elephants and the functionally-extinct rhinoceros. Collectively, these megafauna are considered to have been important for the evolution and seed dispersal of very large fruit. Often called “megafaunal fruit”, these fruit measure at least 4 cm across and appear over-sized for smaller animals to function as seed dispersers. Yet,

PLENARIES

Asia's extant megafauna are herbivores and can be infrequent consumers of fruit. Further, our knowledge of the importance of megafauna in dispersing the seeds of the regions' largest fruits is based on a few plant-specific studies. South-east Asia has an interesting biogeography as a result of the regions landmasses altering in isolation as sea levels rose and receded across time. These changes have promoted variations in fruit-sizes and frugivore communities across the region. I will use fruit size data from three study sites across two regions of south-east Asia (Indochina (Thailand) and the Sundaic region (Peninsular Malaysia, Borneo) and the documented interactions of these fruits with the available frugivores. I will evaluate the extent to which the largest fruits in these sites depend on megafauna and propose reasons for differences in the importance of megafauna in these interactions across regions.

Thursday 11 April: 09:00 – 10:00

LÚCIA G. LOHMANN

University of São Paulo (Brazil) and University of California, Berkeley (USA)



Lúcia Lohmann is currently a Visiting Professor at the Department of Integrating Biology of the University of California, Berkeley (USA), and a professor in the Department of Botany at the University of São Paulo (Brazil). She co-coordinates the NSF-NASA-FAPESP funded project "Assembly and evolution of the Amazonia biota and its environment: An integrative approach," which aims to understand how the Amazon basin was assembled over the last 30 million years. She was recently selected as the new Executive Director of the Association of Tropical Biology and Conservation (ATBC), which fosters the scientific understanding and conservation of tropical environments.

Lohmann graduated from the University of São Paulo with a Bachelor's degree in Biology (1995), and obtained her Master's and Doctorate degrees in Ecology, Evolution and Systematics from the University of Missouri-St. Louis (1998, 2003) with a specialization in Tropical Biology and Conservation. She was a post-doctoral fellow at the Center for Conservation and Sustainable Development (CCSD) at the Missouri Botanical Garden (2004).

Her primary research interest is to understand patterns of diversity and biogeography in the Tropics, and apply this information to establish sound conservation plans. Her research is highly integrative, combining components of classic taxonomy, phylogenetics, molecular biology, ecology, evolutionary biology, and conservation. A lot of her research focuses on the

Bignoniaceae, a key component of Tropical forests and a great model for understanding patterns of diversification in this region. Information from this plant family is then combined in cross-taxonomic analyses aiming at understanding the drivers of biological diversity as a whole.

The origin and evolution of the Neotropical Biota

Few issues have been as intriguing and exciting to scientists as the origin and evolution of the Neotropical Biota. Yet, relatively little is still known about the evolutionary relationships of Neotropical organisms, and the factors that have shaped the diversity currently encountered in this region. It is now clear that both evolutionary and ecological factors have played key roles for the assembly of this Biota. Integrative approaches, including information from systematics, ecology, evolution, geology, and climatology, among others, are not just useful but critical for a better understanding of current diversity patterns. Here, I use integrative cross-disciplinary studies to investigate the history of the Neotropical Biota.

Thursday 11 April: 16:30 – 17:30

YADVINDER MALHI FRS

University of Oxford. Past President of ATBC, long-time Member of gtö.



Yadvinder Malhi is Professor of Ecosystem Science at the School of Geography and the Environment, University of Oxford, Programme Leader of the Ecosystems Group at the Environmental Change Institute and the Jackson Senior Research Fellow at Oriel College, Oxford. He is Co-Director of the Oxford Martin TNC Climate Partnership and Director of the Oxford Centre for Tropical Forests, a network of university departments, NGOs and local businesses that seeks to address the major issues facing the future of tropical forests in the 21st century. He is also a Visiting Professor at Imperial College, London and part of their programme on Grand Challenges in Ecosystems and the Environment, an Honorary Research Fellow at the Institute of the Environment and the University of California at Los Angeles (UCLA), and the NERC Centre for Ecology and Hydrology in the UK.

He leads the Ecosystems Programme of the Environmental Change Institute at Oxford University, which is composed of an Ecosystems Lab focused on the natural science of tropical forests and global change, and a Forest Governance Group focussed on social science and policy issues around the protection of tropical forests.

PLENARIES

Tropical forests in the Earth System

Tropical forests play important roles in the functioning of the Earth system. Here I present an overview of these roles, how our understanding of them has changed over time, and how scientists investigate and quantify them. Attempts to understand these roles bring together a novel combination of some of the traditional ecological research approaches with new toolkits associated with the Earth system sciences: toolkits such as satellite remote sensing, atmospheric observations and global biosphere-atmosphere models. I showcase how these various approaches to understanding the role of tropical forests in the Earth system can work together to provide understanding of the influence of tropical forests at a planetary scale. I show how the field of tropical ecosystems ecology provides a vital bridge between ecological research and Earth systems science. Finally, I focus on the specific case of the 2015/2016 El Niño as a case study, and use data from the Global Ecosystems Monitoring (GEM) research network to try to answer the question: why do tropical forests become major sources of carbon dioxide during El Niño events, and what does this tell us about the future prospects for tropical forests, global climate and the stability of the Earth system?



WORKSHOPS

Thursday 11 April, 14:00 – 16:00

All workshops will be running at the same time in Appleton Tower on Thursday 11 April. All delegates are free to attend any workshop. Please note the location of the workshop you wish to attend below.

Strengthen collaborations, communication, engagement and outreach between ecologists working in Africa and other ecologists from across the globe

Organisers: Edu Effiom & Yadvinder Malhi (ATBC African Chapter)

Location: Appleton Tower, SR 2.04

This workshop is being hosted by the nascent Africa Chapter of the Association for Tropical Biology and Conservation (ATBC). The ATBC Africa Chapter aims to facilitate scientific networking and capacity building across the African continent. The workshop will give researchers and conservation biologists (both from Africa or working in Africa) a chance to meet colleagues, network and use the experience of ATBC to contribute towards a strategic plan for an African Chapter.

The workshop will begin with an introduction and question and answer session on ATBC and the Africa Chapter, followed by a structured brainstorming session on the challenges of working in Africa and how international scientific societies can help overcome these challenges.

All who have an interest in African ecology and conservation, or would simply like to share their experience from other tropical regions, are welcome to attend.

Future directions in spatial point process modelling in tropical ecology

Organisers: Lindsay Banin (Centre for Ecology & Hydrology), Janine Illian (University of St Andrews) & David Burslem (University of Aberdeen)

Location: Appleton Tower, M2

There have been major developments in statistical approaches to analysing spatial point pattern data, especially with regard to computational efficiency, allowing us to fit realistically complex models. Simultaneously, new technologies are allowing us to collect ever larger and more detailed datasets, potentially containing more refined information on ecological processes. These developments provide opportunities as well as challenges for both ecologists and statisticians and call for interdisciplinary research and communication that will benefit both disciplines. This workshop will initiate this critical interdisciplinary link, particularly benefitting those who hold or intend to collect spatial point data and want to find out more about the opportunities and challenges for analysis.

The workshop will first introduce the concepts in spatial point process data analysis, using several motivating examples from tropical ecology that describe the distribution of both plants and animals in space. This will be followed by an interactive panel discussion on key aspects of the modelling process which require decisions by the user and reflect on how these decisions may be communicated to non-specialists.

How can we better understand Europe's ecological footprint in the tropics?

Organisers: Cristina Banks-Leite (Imperial College London) & Brendan Costelloe (BES Policy Manager)

Location: Appleton Tower, SR 2.12

We live in a globalised world and decisions made at local scales can have large and irreversible consequences for the entire world. One such issue that links people and environmental issues across the planet is consumption. Many tropical developing countries are key suppliers of food and natural resources to international markets, however tropical countries also hold more than 75% of all species described to science and the protection of their environment is increasingly at risk. It is thus imperative that we understand how our local actions can affect biodiversity and environmental protection in the tropics, and find solutions to minimise the impacts.

In this workshop, we aim to attract the widest range of expertise and background possible to answer the following questions: What is the extent of the EU/UK's ecological footprint in the tropics? How can society, third sector and governments in non-tropical countries help to reduce the ecological footprints of their country within the tropics?

We will divide the audience into groups to discuss their ideas and a potential plan forward (40-60 minutes). Interested participants will be given the opportunity to write a publication summarising the discussion and feed into a BES policy report and CBD-themed Parliamentary reception.

Journal publishing for tropical ecologists – the essentials

Organisers: Kirsty Lucas (BES Assistant Editor), James Ross (BES Assistant Editor) & Jennifer Powers (Editor in Chief, Biotropica)

Location: Appleton SR 2.14

From finding the right place to submit your manuscript to navigating the peer review process, this workshop, from

WORKSHOPS

the BES and ATBC, will provide early career researchers with an introduction to publishing in tropical ecology.

During the two-hour session, you will have a chance to discuss where the right home for different articles might be and to ask a panel of journal editors from several high-profile tropical ecology journals your most pressing questions. We'll also help you make sense of exactly what happens during peer review and shed some light on commonly used terms you're likely to come across today (what does 'open access' actually mean?).

This session is open to anyone who would like to learn more about the publishing process but may be particularly useful to early career researchers or those with limited publishing experience.

Build your own ecological data-collection app with Coreo

Organisers: Dave Kilbey (Founder & CEO, Natural Apptitude) & Jamie Forsyth (Business Operations / App Design & Development, Natural Apptitude)

Location: Appleton SR 2.07

Effective field-based data collection is critical to many areas of ecological study. This interactive workshop will guide you through using an exciting new product, Coreo

that enables you to build and run your own geospatial data-collection projects with ease (and no coding!). It's ideally suited to setting up and running both private and citizen-science based projects.

You will be guided through building a fully functional app within the workshop and you'll also be given an overview of the entire Coreo platform. The app will:

- Enable users to record taxa in the field using your phone's GPS
- Feature a detailed ID guide including image and sound files
- Show all records submitted to the project
- Feature an interactive map of all records

Apps built using Coreo can be used anywhere in the world, therefore representing a good opportunity for researchers and professional ecologists to run collaborative projects spanning international boundaries. The apps also feature various social features to enable you to build a community around your project if you want to.

Please note that each participant will need a laptop with WiFi and a modern browser to take part in this workshop.



PRESENTER INFORMATION

ORAL PRESENTERS

Sessions are split into 15-minute talk slots. Presentations for standard oral sessions must not exceed 13 minutes, allowing 2 minutes for discussion. Please refrain from preparing a 15-minute talk. The session chair will keep you to time, signalling when you have 5 minutes and 1 minute speaking time remaining until you must stop to take questions. They will stop you if you reach 15 minutes.

If you are a speaker in a **Thematic Session**, you will have received information about the length of your presentation from the session organisers in advance of the meeting. You will be kept to time as above.

The meeting supports PowerPoint and PDF presentations (but these will be locked down so edits will not be possible). Presentations should be at a 16:9 ratio.

All lecture theatres are equipped with a projector, lectern and laser pointer. A helper will be available in each room to assist in your session. There will also be an AV technician on each floor. Delegates are NOT permitted to run presentations from their own laptop.

There will be a PC available in Appleton Tower foyer to run through your presentation and make any changes before uploading in your session room. Please ensure your presentation is uploaded 1 hour before your scheduled session time. Please attempt to upload your presentation the day before your talk, particularly if you have been allocated to a morning session.

Please arrive at your session 15 minutes prior to the published start time. Before the start of your session, please make yourself known to your Chair and indicate how you would like to be introduced. For multi-author papers it is essential you have all authors' permission to give the presentation.

POSTER PRESENTERS

Your poster will be displayed in **McEwan Hall, Foyers 2, 3 and 4**.

All posters should be **portrait/vertical** orientation measuring 841mm wide and 1189mm tall. This is the **International A0** format. Posters will be attached with material provided on the day.

Posters can be put up from 09:00 on Tuesday 09 April. All posters **MUST** be in place by 12:30 on Tuesday 09 April.

Your poster will be located according to your poster number. This number was supplied to you in your timetable email from the organisers and will be in the printed programme. Please ask a member of BES staff or Helper in green t-shirts if you have questions.

Posters will be on display for the duration of the meeting. Your poster will be allocated to one of the two

formal poster sessions listed below, during which you are required to stand at your poster and discuss your work with delegates. This is a valuable opportunity to publicise your research.

Poster Session 1: Tuesday 09 April: 16:00 – 17:30
All poster numbers where the final number is odd (e.g. P1.1, P2.5, P6.7, P9.3)

Poster Session 2: Wednesday 10 April: 16:00 – 17:30
All poster numbers where the final number is even (e.g. P1.0, P2.6, P6.8, P9.4)

Posters must be **removed between 14:00 and 17:45 on Thursday 11 April**. Posters remaining after this time may be disposed of.

SOCIETY FOR TROPICAL ECOLOGY (GTÖ) – MERIAN AWARDS

In 2001 the gtö established the Merian Awards for the best contributions given by young scientists during the annual meeting. There are six Merian Awards annually, three for the best oral contributions and three for the best posters. ECOTROPICA – the society's journal – highlights these contributions by publishing the abstracts.

The gtö has selected Maria Sibylla Merian as the patron of the award to commemorate her unique work as an outstanding artist and as the first female tropical naturalist who actually travelled to the tropics in order to study their fascinating diversity, in particular insects. She was the first scientist who recognized, and documented in her artistic work that insects go through various developmental stages. This is particularly remarkable as the general public in her time still believed that, for instance, mosquitoes and caterpillars were generated in mud by the evil.

The winners will be awarded during the closing ceremony.

SOCIAL MEDIA POLICY

We love social media – they are a great way to connect with people across the world to share ideas and create collaborations. We heartily encourage delegates to tweet, post and share their experiences – our meeting is all about building relationships.

However, we understand that not everyone may want their research broadcast. We respect that, so have created a 'do not share' image for you to add to your poster or talk presentation. We ask that fellow attendees respect that request and refrain from sharing that particular talk or poster. If you do not include this image on your presentation, we will assume you are happy for your research to be shared.

ORAL PRESENTATIONS

Tuesday 09 April

Please note that lunch, coffee breaks and other events are not included in the following printed scientific programme, so please ensure you check the start time and refer back to the main meeting overview when planning your schedule for the day.

14:00 – 16:00

T1: A view from the top - using drones in tropical ecology and conservation

Location: Appleton Tower LT1
Chair: Doreen Boyd

- 14:00 **Stephanie Bohlman:** Investigating tropical forest phenology, structure, and dynamics using repeated ultra-high-resolution imagery collected by unmanned aerial vehicles
- 14:30 **Justin Moat:** What's the point!
- 14:45 **Kate Vogiatzis:** Random Forests on Random Forests. Use of Drones and Machine Learning in Deadwood Surveys.
- 15:00 **Sol Milne:** Abundance of Orangutan Nests and Strangler Fig Density across a Human-Modified Tropical Forest Landscape in Borneo
- 15:15 **Benjamin Kellenberger:** Interactive Machine Vision for Animal Conservation
- 15:30 **Claire Burke:** Observing animals with thermal drones and the astro-ecology project

T2: Nutrient limitations in tropical forests – do expectations match results? – From soil microbes to plant productivity

Location: Appleton Tower LT4
Chairs: Kelly Andersen, Laëtitia Bréchet, & Lucia Fuchslueger

- 14:00 **Introduction by the Organisers**
- 14:15 **S. Joseph Wright:** Plant responses to nutrient addition experiments conducted in tropical forests
- 14:30 **James Dalling:** Mycorrhizally-mediated effects of a decade of nitrogen addition on the productivity of a lower montane tropical forest
- 14:45 **Juergen Homeier:** The Ecuadorian NUtrient Manipulation EXperiment (NUMEX)
- 15:00 **Jennifer Powers:** Nutrient Constraints on Carbon Cycling in Seasonally Dry Tropical Forest

- 15:15 **Kelly Andersen:** Rapid responses of forest carbon fluxes in response to a large-scale nutrient addition experiment in Central Amazonia
- 15:30 **Laëtitia Bréchet:** Responses of CO₂, CH₄, and N₂O fluxes from the soil to a three-year nutrient fertilization in a tropical rainforest, French Guiana
- 15:45 **Closing discussion and final remarks:** do we have critical mass to form an experimental network?

S1: Biodiversity: Pattern and Process I

Location: Appleton Tower LT2
Chair: Aline Finger

- 14:00 **Flavia Pezzini:** Phylogeny and biogeography of *Ceiba* Mill. (Malvaceae: Bombacoideae) using next-generation, targeted enrichment sequencing
- 14:15 **Sofia Gripenberg:** Patterns of host use by insect seed predators in a species-rich tropical forest – implications for tropical forest plant diversity
- 14:30 **Tianxia Jia:** An operational method for algae bloom extracting in Taihu Lake based on Google Earth Engine
- 14:45 **Simon Segar:** Highly non-random and predictable distribution of strains supports a new conceptual framework on *Wolbachia* as a facilitator of insect speciation.
- 15:00 **Nichola Plowman:** Ants in their little nests agree: Increased use of cryptic nest sites with elevation boosts ant co-existence in rainforest trees.
- 15:15 **Temitope Kehinde:** Insect-flower interaction networks vary among endemic pollinator taxa over an elevation gradient
- 15:30 **Sam Jones:** Metabolism and territoriality in a montane tropical songbird; seasonal implications of the 'slow pace of life'
- 15:45 **Janika Wendefueer:** A comparison of line and camera trap distance sampling in a central African tropical rainforest

ORAL PRESENTATIONS

Tuesday 09 April

Wednesday 10 April

S2: Land-use Change

Location: Appleton Tower LT3
Chair: Daisy Dent

- 14:00 Simon Mitchell:** Species traits predict thresholds of nonlinear response to forest change
- 14:15 Samuel Robinson:** Impact of logging gaps on soil microbial community attributes and function in Borneo
- 14:30 Isabel Jones:** Instability of insular tree communities in an Amazonian mega-dam is driven by impaired recruitment and altered species composition
- 14:45 Arne Wenzel:** Biodiversity of birds along a gradient of urbanization in Bangalore, India
- 15:00 Margot Neyret:** Land use history and landscape are the main drivers of plant communities in agricultural landscapes of South-East Asia
- 15:15 Dora Villela:** Forest type and fragmentation drive necromass stocks and heterotrophic respiration in a Brazilian Atlantic forest
- 15:30 Loïc Cecilio:** Effects of prior land-use and soil properties on moist forest biomass recovery in premontane region of Peru
- 15:45 Eleanor Warren-Thomas:** Sumatran peatlands and their forests: can peat restoration improve biodiversity and rainforest connectivity?

10:30 – 11:30

T3: Realising the potential of ecoacoustics for conservation

Location: Appleton Tower LT1
Chair: Tom Bradfer-Lawrence

- 10:30 Tom Bradfer-Lawrence:** Practical considerations when using acoustic indices in conservation research and monitoring
- 10:45 Saskia Dröge:** Assessing the value: The use of acoustic indices as a proxy for biodiversity in the human-dominated landscape of NE Madagascar
- 11:00 Kevin Darras:** Sampling biodiversity with autonomous sound recorders
- 11:15 Robin Whytock:** Inferring behavioural responses to land-use change using ecoacoustics

T4: Karst biodiversity in the Tropics

Location: Appleton Tower LT2
Chair: Alexandre Monro
Sponsor: Systematics Association



- 10:00 Introduction**
- 10:35 Alice Hughes:** Developing conservation priorities in Southeast Asian Karst
- 10:50 Ana Komerički:** Subterranean habitats and biodiversity in the tropics - new discoveries await
- 11:05 Alexandre Monro:** A preliminary evaluation of the Karst flora of Latin America
- 11:20 Discussion**

ORAL PRESENTATIONS

Wednesday 10 April

10:30 – 12:30

T5: Bringing tropical epiphytes to the forefront of ecological understanding - advances and challenges

Location: Appleton Tower LT3

Chair: Agustina Ventre-Lespiauq & Marcos Méndez

- 10:30 Gerhard Zotz:** State of the art and knowledge gaps in tropical epiphyte research
- 11:00 Juan Pablo Suarez:** Advances in the understanding of mycorrhizal interactions of epiphytic orchids
- 11:30 Agustina Ventre-Lespiauq:** Meta-community structure of epiphytic orchid assemblages in sub-Andean forests of Colombia.
- 11:45 Thiago Izzo:** Beyond the gardens: The extended mutualism from ant-garden ants to nectary-bearing plants growing in Amazon tree-fall gaps
- 12:00 Hanne Rasmussen:** Exploring epiphyte recruitment by means of time-space phorophyte gradients

S3: Drought Climate Change and Carbon Cycling

Location: Appleton Tower LT4

Chair: Caroline Lehmann

- 10:30 David Bartholomew:** The response of photosynthesis, respiration and carbon storage to long-term drought in small Amazonian trees
- 10:45 Camila Silva:** Amazon wildfires – CO₂ emissions associated to a decadal disruption of forest carbon stocks
- 11:00 Kate Parr:** Termites mitigate the ecological effects of drought in tropical rainforest
- 11:15 Emma Bush:** Rising CO₂ slows leaf turnover in a tropical forest
- 11:30 Christopher Philipson:** Managing tropical forest carbon projects for multiple ecosystem services
- 11:45 Yhasmin Moura:** Using MODIS (MAIAC) EVI time series to evaluate vegetation dynamics and climatic effects in the Brazilian Cerrado
- 12:00 Yuan Zhao:** ENSO contributes to determine the long term temporal variation in leaf, flower and seed litterfall in the five subtropical and tropical evergreen forests in the south China

- 12:15 Mariana García Criado:** Woody plant encroachment intensifies under climate change in savanna versus tundra biomes

11:30 – 12:30

T6: Upscaling tropical and temperate silvo-pastoral systems – ecological social and economic implications

Location: Appleton Tower LT1

Chair: Henry Creissen

- 11:00 Introduction**
- 11:35 Maria Paula Escobar-Tello:** Agri-socio-ecology: the value of interdisciplinarity in pursuit of policy-relevant evidence on uptake of silvo-pastoral systems in Colombia's Amazonia
- 11:45 Michael Garratt:** Silvo-pastoral systems in Caquetá Colombia: Effects on invertebrate and plant biodiversity
- 12:00 Andrew Barnes:** Examining farmer perceptions within Colombian SPS. A behavioural economics approach
- 12:15 Filipa Monteiro:** Tropical cashew agroecosystem as a central driver of agro-economic transitions in Guinea-Bissau: where we at and where to go?

S4: Biodiversity: Pattern and Process II

Location: Appleton Tower LT2

Chair: Aline Finger

- 11:30 Robert Tropek:** Seasonal and altitudinal patterns of plant-pollinator networks specialisation in submontane and montane tropical forests on Mount Cameroon
- 11:45 Prateek Srivastava:** Impact of Assisted Natural Regeneration on tree species diversity in Sal (*Shorea robusta*) dominated sub-tropical forests
- 12:00 Julian Donald:** The importance of host tree in determining microbial endophyte communities in rainforest canopies
- 12:15 Michael Staab:** Tree phylogenetic diversity structures arthropod and fungi communities in species-rich forests

ORAL PRESENTATIONS

Wednesday 10 April

14:00 – 16:00

T7: High-throughput methods to detect survey and monitor tropical mammals

Location: Appleton Tower LT1
Chairs: Douglas W. Yu & Andreas Wilting

- 14:00 Yu Douglas:** The promise of efficient, large-scale wildlife management
- 14:15 Kristine Bohmann:** Do's and don'ts in iDNA laboratory set-ups
- 14:30 Christina Lynggaard:** Metabarcoding of bulk arthropod samples reveal vertebrate diversity
- 14:45 Kocher Arthur:** Estimating vertebrate diversity with iDNA: how to account for invertebrate's feeding preferences?
- 15:00 Sébastien Calvignac-Spencer:** Fly iDNA metabarcoding to detect tropical mammals (and their pathogens)
- 15:15 Andrew Tilker:** Getting the big picture: landscape-scale camera-trapping to assess defaunation and target conservation efforts
- 15:30 Nicolas Deere:** Prioritising high conservation value forests for tropical mammals using coupled technological and statistical approaches
- 15:45 Andreas Wilting:** Creating synergies of high-throughput detection methods for monitoring tropical mammals

S5: Tropical Plant Communities

Location: Appleton Tower LT2
Chair: Kyle Dexter

- 14:00 Paulina Zigelski:** From below and above: Drivers of geoxylic suffrutex diversity in Angolan tropical grasslands
- 14:15 Caroline Lehmann:** Tree architecture underpins the limits of tropical savannas
- 14:30 Masha Van der Sande:** A 7000-year history of changing plant trait composition in an Amazonian landscape; the role of humans and climate
- 14:45 Adeline Fayolle:** Biogeography and evolutionary ecology of the woody flora in tropical Africa
- 15:00 Manfred Finckh:** Tackling the savanna mess: How frost controls forest-grassland boundaries in tropical south-central Africa

- 15:15 Chris Chandler:** Mapping liana canopy cover across a tropical forest in Malaysia
- 15:30 Pia Parolin:** Tree diversity and adaptations to the flood pulse in the Amazon
- 15:45 Alexander Shenkin:** How are trees constructed? A first look at the major axes of tropical tree architecture.

S6: Tropical biotic interactions in a changing world

Location: Appleton Tower LT3
Chair: Caroline Lehmann

- 14:00 Michelle Rodrigues:** "Canaries" in the tropical forest: Assessing the influence of anthropogenic environments on endangered Geoffroy's spider monkeys at two sites in Eastern Costa Rica.
- 14:15 Amelia Hood:** Ants are important for maintaining ecosystem functioning in oil palm plantations in Riau, Sumatra
- 14:30 Anton Potapov:** Changes in soil biodiversity and food web structure with conversion of rainforest into oil palm and rubber plantations
- 14:45 Frederik Kiene:** Effects of habitat fragmentation on ectoparasite load in mouse lemurs (*Microcebus* spp.) and small mammals in northwestern Madagascar
- 15:00 Michelle Szyja:** Neglected but potent dry forest players: The ecological role and ecosystem service provision of biological soil crusts in the human-modified Caatinga
- 15:15 Malcolm Ramsay:** Factors Impacting the Abundance of Endemic and Invasive Small Mammals in Northwestern Madagascar
- 15:30 Elena Quintero:** The effectiveness of fruits as a resource for seed-dispersing birds in the Atlantic rainforest
- 15:45 Dan Lestina:** Impacts of an unexpected intruder on a rainforest ant-plant mutualism occurring in a novel habitat: *Macaranga* trees, *Crematogaster* ants and *Dasyproctus* wasps

ORAL PRESENTATIONS

Wednesday 10 April

Thursday 11 April

S7: Conservation and Protected Areas

Location: Appleton Tower LT4
Chair: Kate Abernethy

- 14:00 Richard Corlett:** Improving spatial planning for protected areas in response to climate change in Southeast Asia
- 14:15 Dominik Schübler:** Rewarding forest destruction? Determinants of deforestation and prediction of future forest loss in remote and rural north-eastern Madagascar
- 14:30 Sarah Scriven:** Assessing the effectiveness of protected areas for conserving endemic rainforest butterflies in Borneo.
- 14:45 Howard Nelson:** Meeting the CBD's 2020 PNAs targets– the case of Trinidad and Tobago
- 15:00 Jaboury Ghazoul:** Addressing complex problems in oil palm landscapes through games
- 15:15 Julie Bonnald:** Community based survey of crop feeding by elephants around the Kibale National Park, Uganda
- 15:30 Rana Parween:** Traditional Practices of Conserving Biodiversity: A Case Study around Jim Corbett National Park, Uttarakhand, India
- 15:45 Raffael Ernst:** A frog's eye view on logging impacts: Can roads buffer diversity loss?

10:30 – 12:30

T8: Understanding and monitoring forest changes using satellite data

Location: Appleton Tower LT1
Chairs: Charlotte Wheeler & Yaqing Gou

- 10:30 Matthew Hethcoat:** A machine learning approach to map tropical selective logging in Landsat imagery
- 10:45 Chukwuebuka Nwobi:** Estimating Mangrove Forest Area and Biomass Change Over a Decade in the Niger Delta, Nigeria.
- 11:00 Marion Pfeifer:** Mapping tropical forest canopies to map function and biodiversity over time?
- 11:15 Pierre Couteron:** Potential of canopy texture analysis for documenting spatiotemporal variation of tropical forest structure. Lessons from studies across the tropics.
- 11:30 Charlotte Wheeler:** Mapping Forest Degradation with Radar: Case studies from Mexico, Ghana and Indonesia
- 11:45 Yaqing Gou:** A multi-sensor fusion approach for segregating cocoa tree crops from natural forest
- 12:00 Gorka Muñoa:** Isolated oil road and pipelines: deforestation, forest disturbance and edge effect. Particular case in the Northern Peruvian Amazon
- 12:15 Edward Mitchard:** Using multiscale remote sensing data to assess forest stress and disturbance

T9: Tropical mountains: ecological trends across elevation

Location: Appleton Tower LT2
Chairs: Andy Griffiths & Andrew Nottingham

- 10:30 József Geml:** Richness and community composition of taxonomic and functional groups of fungi along Neotropical and Palaeotropical elevation gradients
- 10:40 Kerstin Pierick:** Functional traits of tree fine roots along an elevational gradient in Ecuadorian montane rainforests
- 10:50 Andrew Nottingham:** Microbial responses to warming enhance soil carbon loss in tropical forests: using an elevation gradient to predict future changes

ORAL PRESENTATIONS

Thursday 11 April

- 11:00 Joel Brown:** Climatic shifts alter the structure of translocated rainforest Drosophila-parasitoid communities
- 11:10 Robert Tropek:** Seasonal shifts of biodiversity patterns and species' elevation ranges of butterflies and moths along a complete rainforest elevational gradient on Mount Cameroon
- 11:20 Petr Klimes:** How much does a tropical forest elevational gradient contribute to biodiversity? Insights from the ant communities of Mt. Wilhelm
- 11:30 Nina Farwig:** Linking traits of tree species with herbivory in tropical mountain rainforests
- 11:40 Mateus Dantas de Paula:** Integration of ecophysiological processes and biotic interactions within a dynamic vegetation model (LSMBio): tree hydraulics, trait diversity, seed dispersal and insect herbivory
- 11:50 Norma Salinas:** Tropical montane forests and climate change in the Peruvian Andes: Micro-environmental, biotic and human impacts at tree line
- 12:00 Jane Hill:** Climate change and uphill range shifts: conserving tropical forest species in the Anthropocene

T10: Seed Dispersal – Evolutionary consequences to plants and animals

Location: Appleton Tower LT3
Chairs: Omer Nevo & Kim Valenta

- 10:30 Omer Nevo:** Honest fruit: scent signals nutrient content across species
- 10:45 Renske Onstein:** Fruit colour determines the broad-scale distribution and diversity of colour vision in frugivorous primates
- 11:00 Kim Valenta:** Derived anthropoid traits: Adaptations to frugivory?
- 11:15 Tomas Carlo:** Linking frugivory and seed dispersal with alpha-diversity of plant communities
- 11:30 Katrin Heer:** Spatial genetic structure in two primate-dispersed tree: the influence of plant life-history traits and disperser foraging behavior
- 11:45 Mendoza Irene:** Temporal changes of fruit-bird networks due to phenology: innovations of a multilayer approach

- 12:00 Marcia Muñoz:** Seed dispersal mode influences plant responses to landscapes and environmental gradients in tropical dry-forests
- 12:15 Mauro Galetti:** Defaunation erodes evolutionary history in seed dispersal systems

T11: Multidisciplinary large-scale projects for understanding human-modified tropical ecosystems

Location: Appleton Tower LT4
Chair: Sarah H Luke

- 10:30 Ingo Grass:** Trade-offs between multifunctionality and profit in tropical smallholder landscapes
- 11:00 Sarah Luke:** Testing the impacts of within-plantation management on biodiversity, function, and yield in oil palm ecosystems: The BEFTA Understorey Vegetation Project
- 11:15 David Orme:** The SAFE Project: 40,000 days under the trees
- 11:30 Joice Ferreira:** The Sustainable Amazon Network (RAS): producing scientific evidence to guide forest conservation in Brazil
- 11:45 Daisy Dent:** Tree and bird communities show parallel responses to loss of forest cover in a human-modified landscape in central Panama
- 12:00 Alexandra Morel:** Landscape and smallholder farm attributes drive complementary and trade-off crop dynamics during a climate shock
- 12:15 Annemarie Wurz:** Effects of vanilla cultivation on biodiversity and livelihoods: an interdisciplinary perspective from Northeastern Madagascar

POSTER PRESENTATIONS

The poster sessions will take place in **McEwan Hall, Foyers 2, 3 and 4**.

Posters will be on display for the duration of the meeting. Your poster will be allocated to one of the two formal poster sessions listed below, during which you are required to stand at your poster and discuss your work with delegates. This is a valuable opportunity to publicise your research.

Poster Session 1: Tuesday 09 April, 16:00 – 17:30

All poster numbers where the final number is odd (e.g. P1.1, P2.5, P6.7, P9.3)

Poster Session 2: Wednesday 10 April: 16:00 – 17:30

All poster numbers where the final number is even (e.g. P1.0, P2.6, P6.8, P9.4)

Animal Behaviour

- P1.0** **Ya-Fu Lee:** Flycatching *Rhinolophus formosae* selects perches in relation to vegetation structure
- P1.1** **Yik-Ling Tai:** Body conditions and state-dependent bat fly infection in Eastern bent-wing bats (*Miniopterus fuliginosus*)
- P1.2** **Yu-Jen Kuo:** State-dependent effects on personality traits of Eastern bent-wing bats (*Miniopterus fuliginosus*) in cross-context tests
- P1.3** **Cindy Cosset:** Avian movement patterns after selective logging in Borneo.
- P1.4** **Bruno Simmen:** Forest fragments, lemurs and the influence of human perception and interaction in a protected area of Northwestern Madagascar
- P1.5** **Maria Cristina Gaglianone:** Orchid Bees in the Brazilian Atlantic Rainforest: Diversity, Activity Pattern and Sampling Efficiency in a short-term assessment
- P1.6** **Eleanor Devenish-Nelson:** Increased vertebrate coverage of Trinidad and Tobago's new proposed protected area system
- P1.7** **Marco Tschapka:** From gleaning to aerial insectivory: niche expansion in the Neotropical bat *Lonchorhina aurita* (Phyllostomidae)
- P1.8** **Sophie Calme:** Environmental and social factors affecting behavioral synchrony in spider monkeys
- P1.9** **Zuzana Sejfová:** Sunbird foraging behaviour and the first insight in kinematics of their hovering flight

Climate effects and climate changes

- P2.0** **Gerhard Zotz:** A combined experimental and modelling approach to study climate-change effects on tropical lowland bryophytes
- P2.1** **Marie Fallon:** Impact of soil moisture and temperature variation on carbon cycling in tropical peat soils.
- P2.2** **Terhi Riutta:** The impact of the 2015-2016 El Niño drought on the ecophysiology and carbon dynamics of a Bornean rainforest

Evolutionary Ecology

- P3.0** **Sei-Woong Choi:** From subtropic to boreal - An elevational gradient of species richness of macromoths in southern Korea
- P3.1** **Matin Miryeganeh:** Transcriptomic and Epigenomic Responses of Mangrove Trees to Different Stressful Environments
- P3.2** **Ana Navarro:** Isotopic niche reduction in five trophic guild of birds over more than 100 years of land use change
- P3.3** **Dorothee Sandmann:** Ecotaxonomy: towards a common platform linking traits to taxa and morphospecies
- P3.4** **Helena Teixeira:** Genomic assessment of hybridization between the distantly related *Microcebus murinus* and *M. ravelobensis* species in northwestern Madagascar
- P3.5** **Surabhi Ranavat:** Hybridisation and Speciation in the genus *Alpinia* Roxb. (Zingiberaceae)
- P3.6** **Katerina Sam:** Elevational patterns in predation, herbivore performance and herbivory in hostile and enemy free space

POSTER PRESENTATIONS

Functional traits

- P4.0 Bruno Luize:** Broader hydrological niches imply in wider range sizes for all Amazonian trees, with consistently larger range sizes for wetland-adapted species.
- P4.1 Laynara Lugli:** Multiple nutrients constrain fine root functioning in a lowland tropical rainforest in central Amazon
- P4.2 Olga Tserej Vazquez:** Variation in leaf temperature of tropical tree species
- P4.3 Megan Sullivan:** Macroecological patterns of leaf size, shape, and function in the cerrado
- P4.4 Elena Quintero:** NOW AN ORAL PRESENTATION IN S6
- P4.5 Anna Deasey:** Predicting tropical tree distributions as a function of tolerance to shade, drought, and flooding
- P4.6 Lore Verryckt:** Spatial variation of photosynthesis in a lowland tropical forest in French Guiana: saplings vs. adults
- P4.7 Lindsay Banin:** Inter-specific and environmental variability in woody functional traits of tropical trees

Human modified landscapes

- P5.0 Ilana Zalmon:** Climatic and anthropogenic effects on intertidal biodiversity at tropical sandy beaches – Southeastern Brazil (2011-2018)
- P5.1 Eckhard Heymann:** Tamarin seed dispersal contributes to the natural regeneration of anthropogenically disturbed forest
- P5.2 Dominik Schwab:** Predation patterns along a land-use gradient in North-eastern Madagascar
- P5.3 Lydia Cole:** Pollen, people and peat: A mixed-methods approach to uncovering the past and future prospects for Malaysia's tropical peatlands
- P5.4 Jacob Anderson:** Tropical rainforests in human-modified landscapes: biodiversity and carbon storage at forest edges
- P5.5 Julie Bonnald:** NOW ORAL PRESENTATION IN S7

- P5.6 Lydie Dussol:** A new multidisciplinary baseline for understanding the development, functions and impact of ancient agroforestry technologies in the Neotropics.
- P5.7 Cammy Beyts:** Traffic disturbance and its effects on the personality of tungara frog (*Engystomops pustulosus*) tadpoles in Trinidad.
- P5.8 Santosh Birman:** Assessment and accumulation of heavy metals by locally occurring pant species in industrial soil
- P5.9 Selene Gutierrez Al-Khudhairy:** Testing the resilience of tropical agricultural landscapes
- P5.10 Laura Braunholtz:** Roads through rainforests: assessing infrastructure impacts on Borneo's mammals
- P5.11 Pedro Santos-Neto:** Human disturbances and rainfall effects on plant-insect herbivore interactions in the Caatinga dry forest
- P5.12 Lisieux Fuzessy:** The menace of human activities on post-dispersal seed fate: A pan-tropical meta-analysis
- P5.13 Luke Powell:** The birds, the bats, and the chocolate trees: Achieving sustainable agriculture in the Afrotropics through DNA metabarcoding

New technologies and methods

- P6.0 Tianxia Jia:** NOW ORAL PRESENTATION IN S1
- P6.1 Jay Edneil Olivar:** Tackling a global health crisis: How phylogenetics, chemoinformatics, and spatial distribution modelling together can help in the search for new anti-infective metabolites
- P6.2 Oliver Metcalf:** Sounds in the dark: identifying nocturnal rainforest taxa with machine learning classification
- P6.3 WITHDRAWN**
- P6.4 Viviane Layme:** Different sampling protocols affect the diversity measures of mammals' assemblage in a Neotropical Savanna
- P6.5 Charlotte Caroline Smith:** The Amazon 2.0: Mapping Secondary Forest in Brazil

POSTER PRESENTATIONS

Oil palm plantations

- P7.0 Michael Pashkevich:** Conserving river margins of mature oil palm during replanting has varied impacts on oil palm arthropods
- P7.1 Susannah Fleiss:** Criteria for sustainability certification of palm oil improve the carbon stocks of agricultural landscapes
- P7.2 Alena Krause:** Shift in trophic niches of soil microarthropods (Acari, Oribatida) with conversion of tropical rainforest into plantations as indicated by stable isotopes (^{15}N , ^{13}C)
- P7.3 Helen Waters:** Biocontrol within oil palm plantations: the effect of stand age and management to retain mature oil palm riparian margins
- P7.4 Jake Stone:** The effect of management on ant community composition and herbivory in oil palm plantations.
- P7.5 Dave Seaman:** Densities of Bornean orang-utans (*Pongo pygmaeus morio*) in heavily degraded forest and oil palm plantations in Sabah, Borneo

Soils leaf litter and nutrient flows

- P8.0 Franca Marian:** Decomposition and microarthropod colonization of leaf litter in a tropical montane rain forest: Variations with topography and altitude
- P8.1 Marcos Méndez:** How specialized are mutualistic interactions of orchids with their mycorrhizal fungi?: a review
- P8.2 WITHDRAWN**
- P8.3 Leandro Van Langenhove:** Rapid post-fertilisation plant phosphorus uptake indicates phosphorus limitation in French Guiana
- P8.4 Josie Phillips:** Bird's nest ferns promote resource sharing by centipedes

Vegetation Communities

- P9.0 Angela Vitória:** Photoplasticity negatively influences the performance of pioneer species in a tropical forest regeneration – Southeastern Brazil
- P9.1 Nassim Daher:** A comparative approach of phenology across tropical Africa
- P9.2 Guan-Yu Lai:** Regional estimation of the biomass of epiphytic bryophytes in a tropical montane cloud forest
- P9.3 Marcelo Nascimento:** Establishment of planted and naturally regenerated seedlings in areas of riparian forest restoration in the Atlantic Forest of southeastern Brazil
- P9.4 Gabriela Meirelles:** Relationships between vegetation, soil properties and microbial communities in a Brazilian Neotropical Savanna
- P9.5 Julia Cardon:** Contrasts in tree community structure and diversity across three large fully-mapped plots in Malaysia
- P9.6 Mateus Dantas de Paula:** NOW AN ORAL PRESENTATION IN T9
- P9.7 Robin Hayward:** Selective logging and seedling community recovery in Malaysian Borneo
- P9.8 Carolina Tovar:** Dispersal strategies in the Tropical Andes: The role of environmental filtering vs evolutionary history within alpine grassland communities
- P9.9 Nora Buenrostro:** Florivory in an ant-plant: drivers and consequences

PRIDE IN OUR COMMUNITY

We are proud to be a diverse community. We strive to ensure our meetings are as inclusive as possible and want to promote a safe and friendly environment for everyone who attends. As such, we are pleased to introduce the following initiatives to support our LGBT+ community.

THE TRANS COMMUNITY

Gender and sex are different, and both lie on a spectrum. Sex is biological. Babies are assigned a gender at birth according to their anatomy, but may also be born intersex, with several variations in sex characteristics. Gender is cultural. A person is usually raised as one of a binary: 'male' or 'female'. In reality, there is a spectrum between and around these and only a person can define their own gender. Culturally, we associate different characteristics with the male–female binary: different clothes, different haircuts and different behaviours. Historically, trans and non-binary or agender people have existed all over the world for centuries.

ALL SEXES MAY IDENTIFY AS ALL GENDERS

- A trans woman was assigned male at birth but is and identifies themselves as female. Likewise, a trans man was assigned female at birth but is and identifies themselves as male.
- A nonbinary, agender or genderqueer person does not identify with either gender. This may mean:
 - they are neither male nor female
 - they are both male and female
 - they are different genders at different times (genderfluid), for example based on cultural context
- If you identify as the gender you were given at birth, you are called cisgender.
- Other labels exist, but many people would rather not give themselves any labels at all.

All genders may identify as all sexualities. Gender is separate from sexuality. Trans people may be attracted to any people on the gender spectrum described above, just the same as cisgender people may be. All genders may have all bodies. Gender identity does not have to have anything to do with the way a person looks or dresses, although trans people may choose to change their outward appearance at some point to match the gender they identify with. Never ask someone about their body.

PRONOUN BADGES

These pronoun badges assist members of the trans community in helping others understand their identity and how they would like to be addressed. 'Pronoun' in Latin means "in place of name". You probably want people to refer to you using your correct name. Likewise, people should choose the pronoun people should use in place of their name. Trans people may choose the pronouns that best fit their identity. As well as he/him/his and she/her/hers, trans people may choose a gender-neutral they/them/theirs, nonbinary ze/zir/zirs, other pronouns not listed here, or just desire that they are addressed using their name. Depending on context, some people may use more than one pronoun. If you see someone wearing one of these badges, please use the words they have chosen to refer to them in conversation. Gender is usually a very important part of a person's identity. It is upsetting and frustrating if someone addresses you incorrectly. If you do, however, use the wrong words by accident, simply apologise. Pronoun badges are available on a table in the registration area.

INFORMATION FOR DELEGATES

FUN RUN!

Wednesday 10 April, 07:30 – 08:15

Meeting point: McEwan Hall Pavilion Entrance

Get your running shoes on and join us on a 5k fun run around beautiful Edinburgh! Meet BES Scottish Policy Officer, Maggie Keegan, outside McEwan Hall, the glass entrance by 07:20 for a (max) 45-minute run, giving enough time to get back and ready to hear a great plenary from Kim McConkey. All levels welcome!

MONDAY SOCIAL

A space has been booked at the St Andrews Brewing Co. Potterrow Pub from 19:00 on Monday 8 April. This is located 1 minutes' walk from Appleton Tower at 32 – 34 Potterrow, EH8 9BT

WELCOME RECEPTION

The Welcome Reception at the Royal Botanical Gardens will take place on Tuesday 9 April from 18:00 – 20:30. This is a drinks and canapes reception only, therefore delegates will be required to organise their own evening meal. We recommend delegates bring photo ID to this event as alcohol will be served. **Delegates must wear registration badges in order to gain entry.**

GETTING TO THE BOTANICAL GARDENS

Walking

From Appleton Tower it takes about 35 minutes to walk to the gardens.

Bus

The number 8 bus goes direct from Surgeons' Hall, South Side Bus stop, EH8 9BX (outside Mosque Kitchen). This takes 25 minutes and costs around £1.50.

Taxis

There are over 1,000 black cabs that can be hailed in the street or picked up from one of the taxi ranks within the city centre. The majority of taxis can carry up to 5 passengers and are accessible for wheelchairs.

City Cabs: 0131 228 1211

Central Radio Taxis: 0131 229 2468



INFORMATION FOR DELEGATES

CONFERENCE DINNER

The Symposium Dinner takes place on Wednesday evening at The Hub, 348 – 350 Castlehill, EH1 2NE, from 19:00 – late. This is a 10 minute walk from Appleton Tower and is a ticketed event. All tickets must be purchased in advance of the dinner. If you have any questions, please ask a member of BES staff on the Registration Desk. **Delegates must wear registration badges and bring photo ID in order to gain entry.**

EDINBURGH UNIVERSITY – COFFEE NEUTRAL

The University currently collects and recycles coffee grounds across all 19 outlets on their campus, which has made them Scotland's first "coffee neutral" University. The University is also using a 100% natural soil conditioner created from the used coffee grounds, on the gardens across their campus, creating a true closed loop.

SOCIAL MEDIA/SOCIAL MEDIA POLICY

All attendees are encouraged to join the discussion via social media, so please use the hashtag #UTE2019 and follow @BritishEcolSoc on Twitter to ensure you are part of the conversation.

Speakers reserve the right to ask delegates not to disseminate their research via the internet, so please respect this request if made.

PHOTOGRAPHY

There will be a photographer present at the event. Photographs taken may be used for promotional purposes; if you have any concerns or queries regarding this, please come and see us at the Registration Desk.

INTERNET

There is complimentary WiFi for all delegates at both Appleton Tower and McEwan Hall. Please connect to the McEwan Hall WiFi by searching for 'Optify' and enter your email address and phone number.

For Appleton Tower please search for 'Central' and use the logins provided to you at the help desk.

FOOD & REFRESHMENTS

Your registration includes tea/coffee and lunch on Tuesday, Wednesday and Thursday, and a welcome drinks reception on Tuesday evening at the Royal Botanical Gardens. All daytime catering will be available in the in the McEwan Hall Foyer 2 – 4 during the designated breaks on all 3 days.

BADGES

For security and regulation purposes, please ensure you wear your registration badge at all times throughout the venue. **You must also wear your registration badge to the Welcome Reception at the Botanical Gardens and the conference dinner at The Hub in order to gain entry.**

MOBILE PHONES

As a courtesy to speakers and other delegates, we ask that all mobile phones and electronic **devices be changed to silent mode before entering into any session.**

CLOAKROOM

McEwan Hall Foyer 5 is available to store any coats and bags throughout the Symposium. This is free of charge.

CONTEMPLATION ROOM/PRAYER ROOM

There is a quiet room located in McEwan Hall, Robing Room 1, for anyone who wishes to have some time out to think, reflect or pray.

FAMILY ROOM

There will be a family room located in McEwan Hall Foyer 1. This room will contain a microwave, fridge and kettle. There will be seating and an area for those that need to breastfeed or express. Please feel free to bring toys to use in this area. It is your responsibility to ensure children are accompanied by an adult at all times.

LOST PROPERTY

Please hand in lost property to the Registration Desk where it will be made available for collection.

SMOKING POLICY

Please note that smoking is not permitted inside the building.

FIRST AID

Should you require first aid assistance during the Annual Symposium, please contact a BES team member who will be able to guide you to the appointed first aider.

INFORMATION FOR DELEGATES

VENUE SECURITY & LIABILITY

In the event of an emergency, security and venue staff will guide you to safety. The weekly fire alarm test is on Friday, which will not affect the meeting and therefore any alarms should be considered the real thing.

INSURANCE AND LIABILITY

The Symposium organisers will not accept liability for personal injury or loss/damage to property/belongings of participants or accompanying persons, before, during or following the Symposium, or their stay in Edinburgh. It is therefore recommended that participants arrange their own personal health, accident and travel insurance.



ABOUT EDINBURGH

The city of Edinburgh is steeped in history. Scotland's capital seamlessly blends old and new, providing visitors with the perfect destination to experience the sights, sounds and tastes of a diverse and vibrant country. There are a wide variety of attractions throughout the city, and you are only a short trip away from the Scottish countryside and the coast. Edinburgh has a medieval Old Town and elegant Georgian New Town with gardens and neoclassical buildings. Looming over the city is Edinburgh Castle, home to Scotland's crown jewels and the Stone of Destiny, used in the coronation of Scottish rulers. Arthur's Seat is an imposing peak in Holyrood Park with sweeping views, and Calton Hill is topped with monuments and memorials.

VENUE ADDRESSES:

Appleton Tower: 11 Crichton Street, Edinburgh, EH8 9LE

McEwan Hall: Teviot Place, Edinburgh, EH8 9AG

TRAVELLING WITHIN THE CITY

Journey Planning

Edinburgh offers visitors easy transport links into and across the city. An extensive bus service combined with rail links, taxis and the arrival of trams provides plenty of travel options.

Buses

An extensive bus service transports residents and visitors across the city throughout the day and night including a regular 24 hour service to Edinburgh Airport operated by Airlink100. Visitors can plan their journey within Edinburgh with Lothian Buses. Tickets can be bought directly from the driver, and are valid for one journey only. You will need exact change. You can also purchase a special day ticket, which provides unlimited bus travel around Edinburgh for 24 hours.

www.lothianbuses.com



ABOUT EDINBURGH



Trams

WiFi friendly trams run from York Place in the city centre to Edinburgh Airport in a journey time of approximately 35 minutes. Wheelchair accessible, ramps and lifts are provided at the stops along the route.

www.edinburghtrams.com

Taxis

There are over 1,000 black cabs which can be hailed in the street or picked up from one of the taxi ranks within the city centre. The majority of taxis can carry up to 5 passengers and are accessible for wheelchairs.

City Cabs can be hailed in the street or pre booked on 0131 228 1211. www.citycabs.co.uk

Central Radio Taxis: 0131 229 2468

Just Eat Cycles

Edinburgh's new cycle hire scheme offers visitors a unique way to explore the capital in a simple and affordable way (£3 per day). The network of cycle hire locations across the city is being continually expanded, and the nearest hire station is located next to McEwan Hall in Bristo Square, containing 11 bikes.

www.edinburghcyclehire.com

By Car

Driving within Edinburgh can be difficult. There is no parking on main roads into the city from 7.30am to 6.30pm Monday to Saturday. On-street parking is controlled by self-service ticket machines from 8.30am to 6.30pm Monday to Saturday, and costs from £2.20 to

£4.20 per hour, with a 30-minute to four-hour maximum. The Nicolson Square Car Park is only a 2 minute walk from Appleton Tower and costs £9 for up to 5 hours.

www.nicolson-square-car-park.business.site

By Train

Edinburgh has two stations - Haymarket and Waverley. The main station is Edinburgh Waverley which is located in the city centre, sandwiched between the New and Old towns.

Edinburgh is easy to reach by train and the Great North Eastern Railway line is the fastest intercity railway in the UK, with a journey time of just under 5 hours between Edinburgh (Waverley) and London's King's Cross.

ScotRail operate an overnight service, the Caledonian Sleeper, between London Euston and Edinburgh 7 nights a week.

Edinburgh on Foot

Edinburgh is best explored on foot, with many pedestrianised streets, and the walk from the New Town to Old Town only taking around 20 minutes.

By Air

Edinburgh Airport lies 8km to the west of Edinburgh. A regular airport bus is operated by Airlink 100 and runs every 10 minutes, 24 hours a day departing from Waverley Bridge. Tickets can be bought at the airport information desk for approximately £8 return, at the bus stop, from the driver or online. www.EdinburghAirport.com/transport-links/buses-and-coaches

THINGS TO DO IN EDINBURGH

School holidays mean that the 08 - 12 April will be a busy week at many venues, but this also means there are extra events. Use the 'Visit Scotland' website to find out about events and restaurants. www.visitscotland.com

OUR DYNAMIC EARTH

Open 10:00-18:00

An interactive educational centre about the history of planet earth. During conference week there are special activities for the school holidays

www.dynamicearth.co.uk

DINO'S DYNAMOS – WILD WEDNESDAYS – BUGS AND BEASTIES

Wednesday, 10 April, 10:00-14:30, Age 6-14

£15 per child per day.

Sessions must be booked in advance.

EDINBURGH INTERNATIONAL SCIENCE FESTIVAL

Running throughout the conference week at various venues around the city.

EDINBURGH CASTLE

Open 09:30-17:00

Iconic Scottish royal castle dominating the city Centre at the top of the Royal Mile. A visit takes several hours, with lots to see for everyone. Tickets are expensive, but if you see one Scottish castle, it should probably be this one! www.edinburghcastle.scot

NATIONAL MUSEUM OF SCOTLAND

Open 10:00-17:00

Wonderful, family friendly and free! The museum traces the history of Scotland and its cultural impact on the world.

www.nms.ac.uk/national-museum-of-scotland

WALK ALONG THE WATER OF LEITH

If you want to walk through the heart of the city this is a fascinating and flat walk along the canal.

www.waterofleith.org.uk

ARTHUR'S SEAT AND THE SALISBURY CRAGS

A classic Edinburgh experience for those with plenty of energy to burn off. Easy to walk and you can't get lost! It can be very windy and wet at the top, so wrap up and take good walking shoes and waterproofs. At the top - view the whole city and learn about central Scotland's volcanic past.

THE ROYAL MILE AND THE OLD TOWN

Walk the length of the Royal Mile, from the Castle to Holyrood Palace. Lots to see and do along the way, plenty of local cafés and restaurants and usually some street performers as well.

CAFÉS AND RESTAURANTS

MUMS GREAT COMFORT FOOD (4A FORREST RD)

Traditional, hearty British fare with gourmet sausages, served up in a retro-style diner. Child friendly and only 6 minutes walk from Appleton Tower.

THE ELEPHANT HOUSE (GEORGE IV BRIDGE)

Where JK Rowling wrote Harry Potter, so a huge must for most kids (and adults!). Serving classic lunchtime meals and only a 6 minute walk from Appleton Tower.

SPOON (6A NICOLSON ST)

Cool and convivial café/brunch spot, serving soups, sandwiches, coffee and cake alongside a diverse evening bistro menu. Vegan options available and only 5 minutes walk from Appleton Tower.

KALPNA (2-3 ST PATRICKS SQUARE)

Established Indian vegetarian/vegan dining in striking, exotic decor with buffet, thali and lunch deals. 4 minute walk from Appleton Tower.

PARADISE PALMS (41 LOTHIAN STREET)

American diner style vegetarian dining with an on-site record store, bar & hangout. 4 minute walk from Appleton Tower. Vegan options available.

MONTEITHS (61 HIGH ST)

Intimate, refined spot for seasonal Scottish cuisine and cocktails in a smart, traditional decor. An 11 minute walk from Appleton Tower.

CODE OF CONDUCT

The British Ecological Society is an open, welcoming and inclusive organisation that believes no one should experience discrimination or harassment of any kind. We want to ensure that everyone who attends our events feels welcome, safe and comfortable.

The BES has a full safeguarding policy that covers all our activities and you are welcome to ask the main office for a copy or access it online at britishecologicalsociety.org/about/safeguarding. Part of our policy is to share our code of conduct with you.

We believe all participants and attendees at the BES annual meeting have:

- the right to be safe from harassment or discrimination in all its forms
- the right to fully engage in all the activities on offer
- the right to have any complaints or concerns investigated, regardless of career position

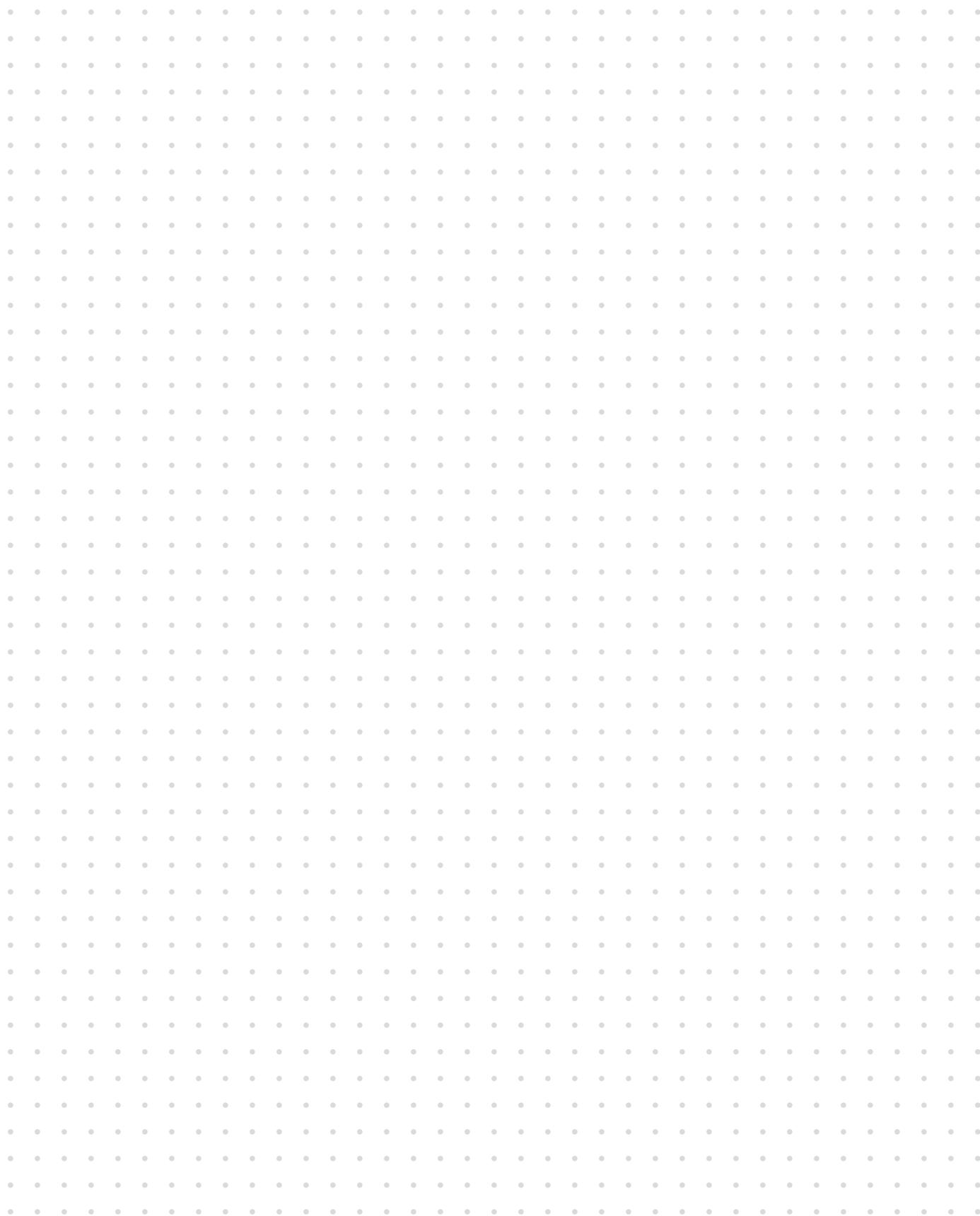
We ask everyone to help us maintain an inclusive, safe meeting for all attendees by agreeing to the common principles of our code of conduct:

- being courteous, respectful and professional towards others
- valuing the diversity of participants, their views and opinions

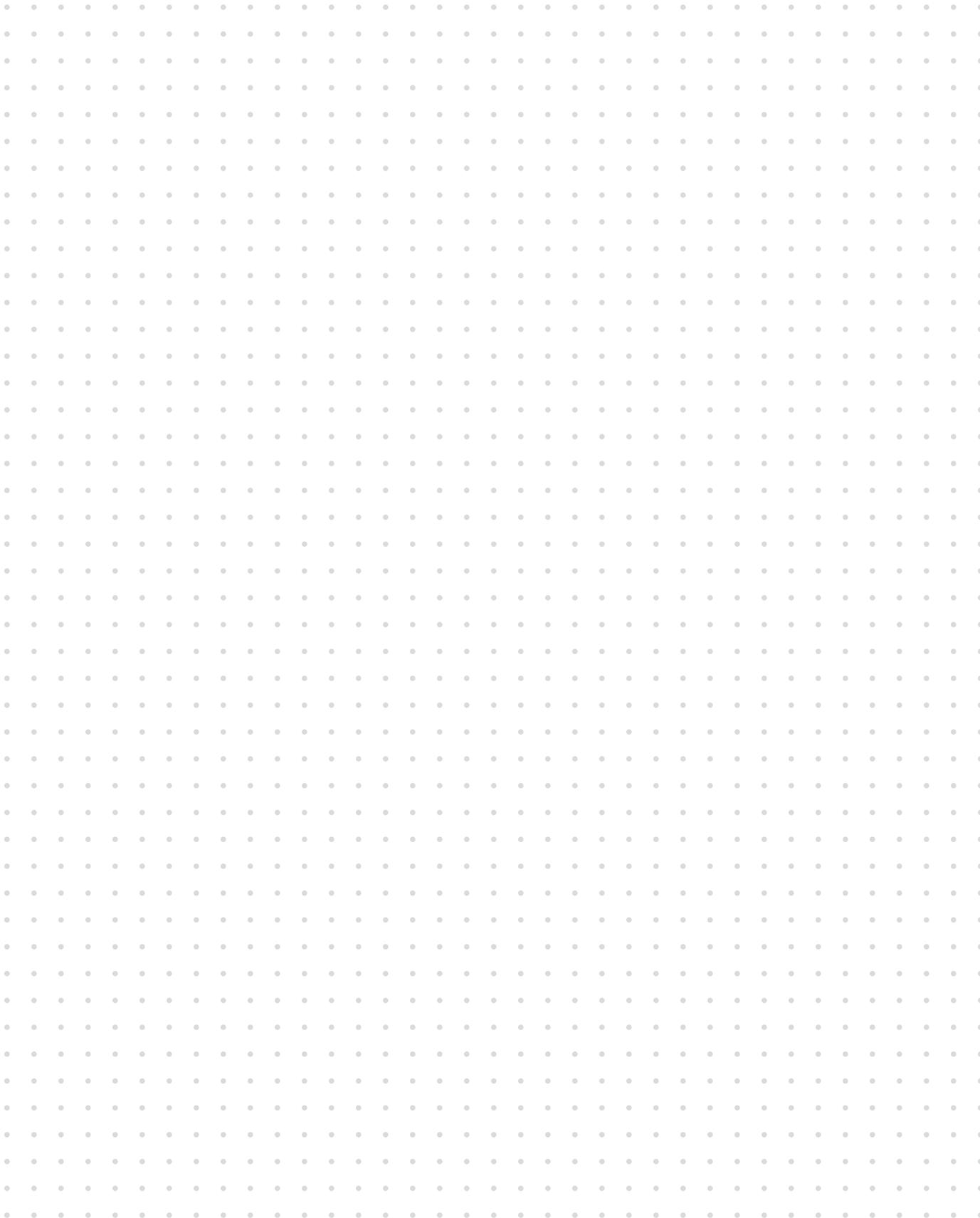
If you feel you have experienced any harassment or discrimination or would like to report any concerns, please speak to a member of BES staff or send a confidential email to conduct@britishecologicalsociety.org to report a concern or ask to speak to our safeguarding staff.



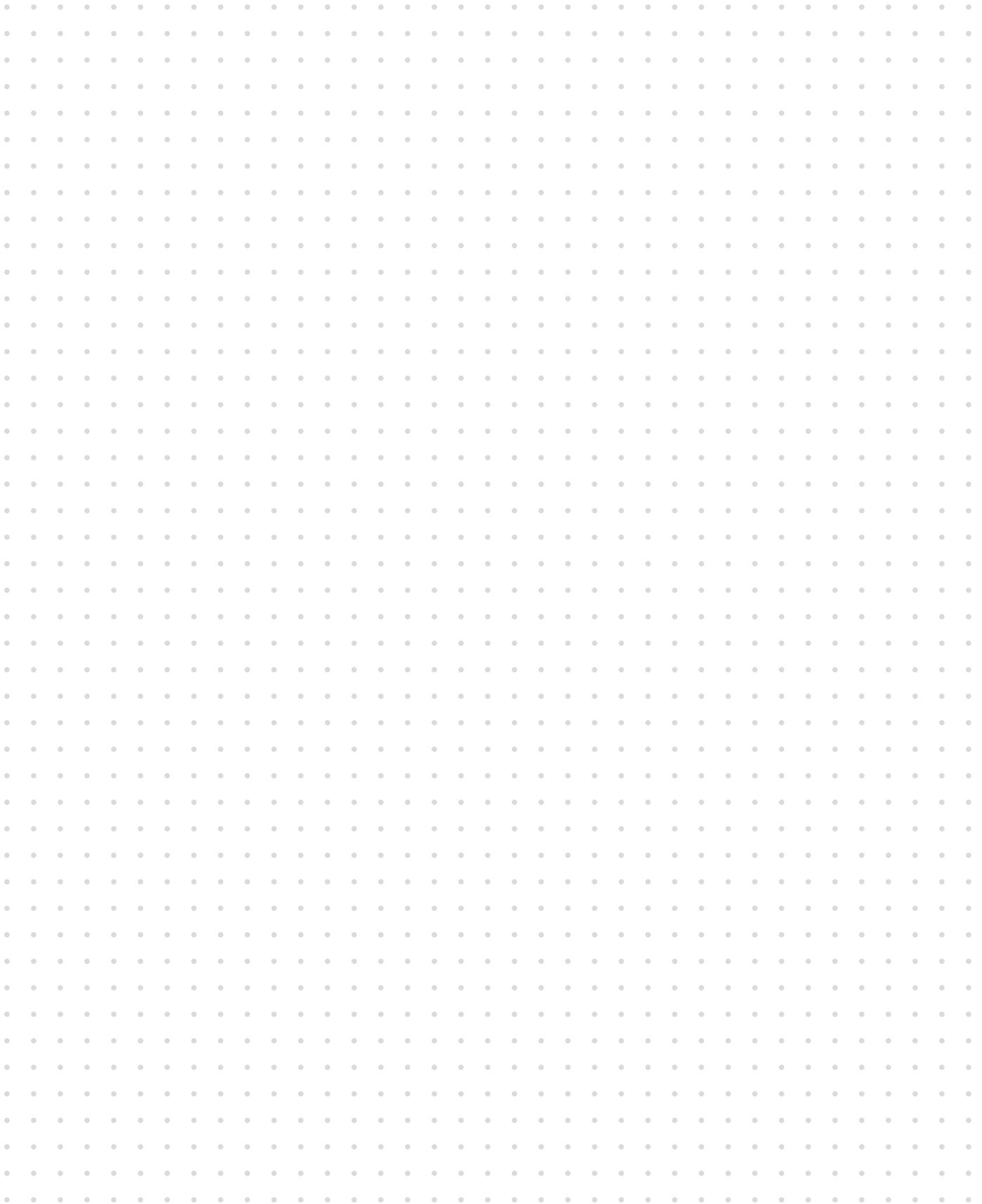
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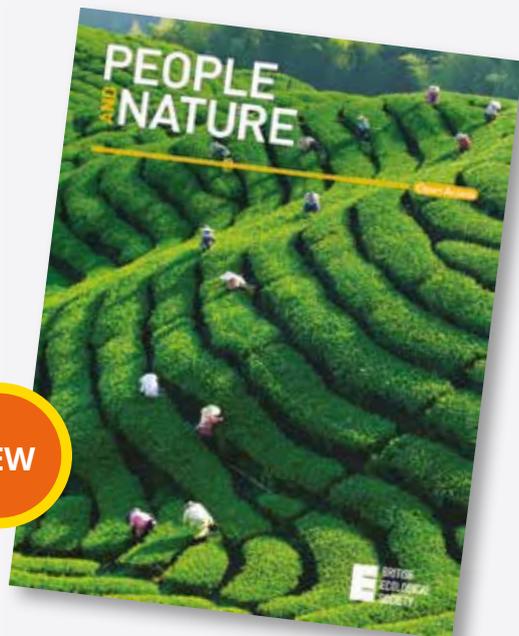
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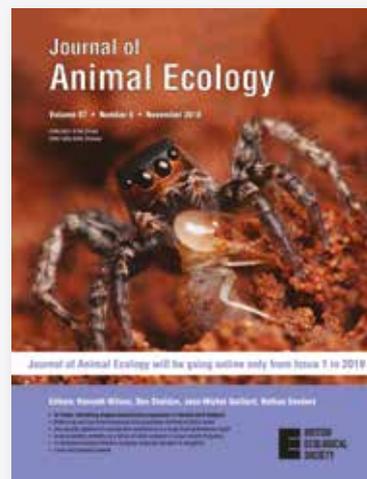
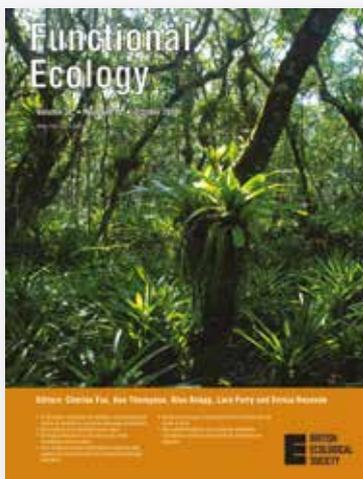
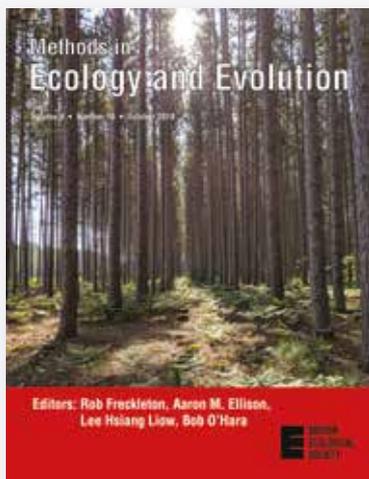
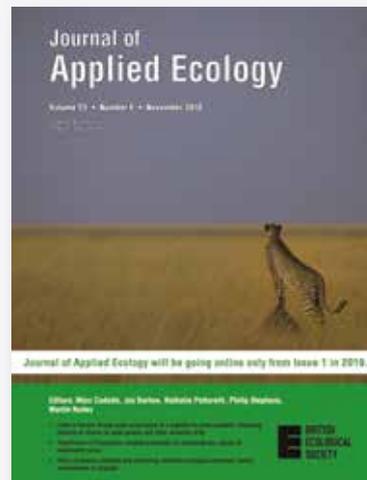
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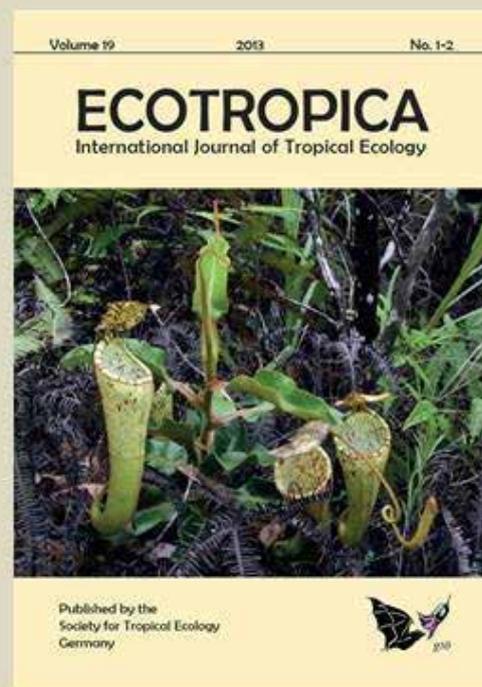
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Eckhard W. Heymann & Marco Tschapka, Editors

BES FUTURE ANNUAL MEETINGS

2019 | BELFAST, UK | 10–13 DECEMBER

2020 | EDINBURGH, UK | 14–17 DECEMBER

