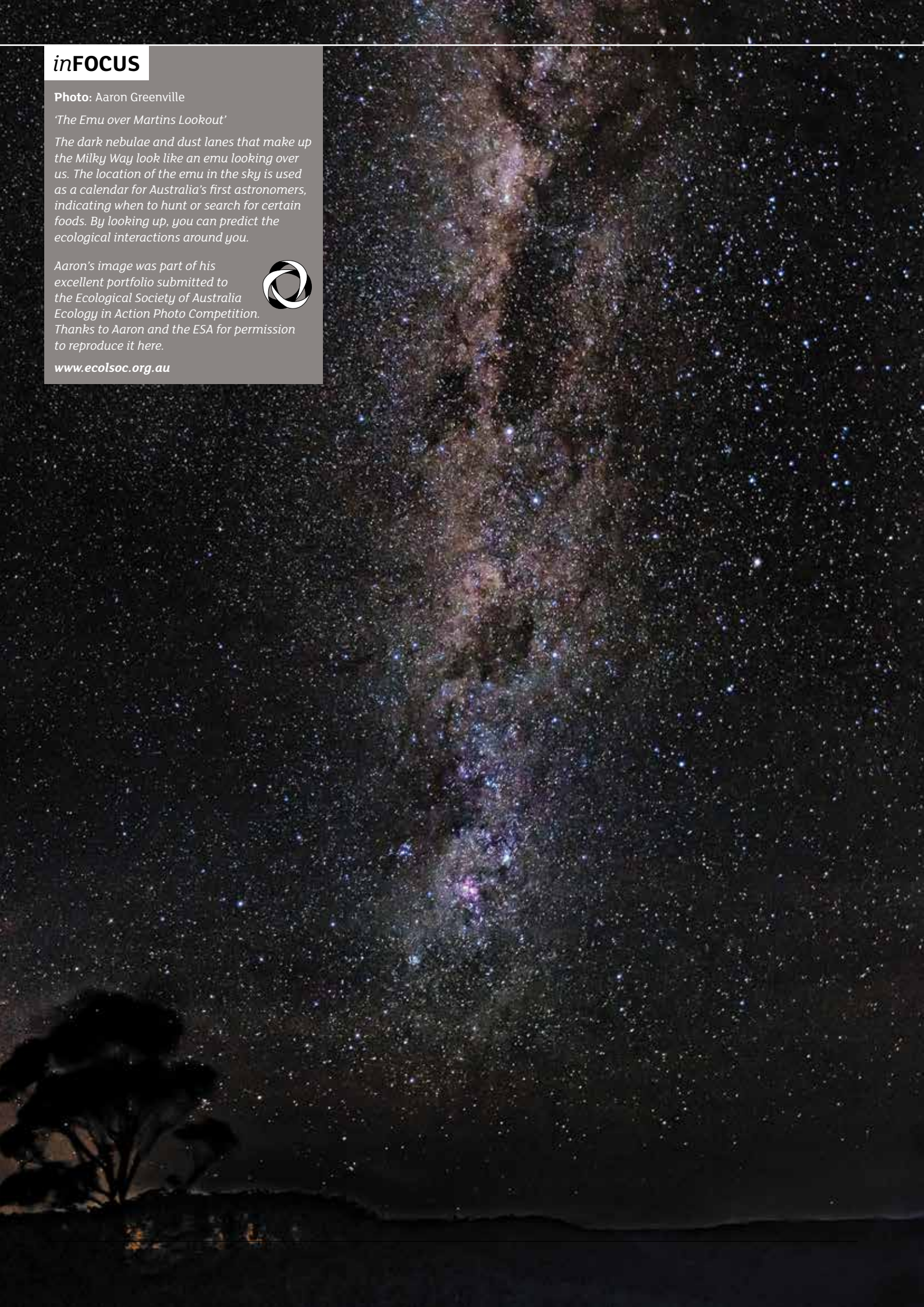
The Bulletin

YOUR MAGAZINE FROM THE BRITISH ECOLOGICAL SOCIETY

British Ecological Society



*in*FOCUS

Photo: Aaron Greenville

'The Emu over Martins Lookout'

The dark nebulae and dust lanes that make up the Milky Way look like an emu looking over us. The location of the emu in the sky is used as a calendar for Australia's first astronomers, indicating when to hunt or search for certain foods. By looking up, you can predict the ecological interactions around you.

Aaron's image was part of his excellent portfolio submitted to the Ecological Society of Australia Ecology in Action Photo Competition. Thanks to Aaron and the ESA for permission to reproduce it here.

www.ecolsoc.org.au

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PUBLISHING IN THE BES BULLETIN

The *Bulletin* is published four times a year in March, June, August and December. Contributions of all types are welcomed, but if you are planning to write we recommend you contact one of the editorial team in advance to discuss your plans (Bulletin@BritishEcologicalSociety.org).

Material should be sent to the editor by email or on a disk in Word or rtf format. Pictures should be sent as jpeg or TIFF (*tif) files suitable for printing at 300dpi.

Books to be considered for review should be sent directly to the Book Reviews Editor Sarah Taylor.

Cover photo: Adam Seward. Adam's image of a shag chick (Phalacrocorax aristotelis) was entered for the 2014 BES photocompetition. The image was chosen by our designer for its impact as a cover independently of the judging process.

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WELCOME

Where has 2014 gone?

It doesn't seem five minutes since we were putting together last December's issue summarising the 2013 BES Centenary celebrations, but already another busy year of Society activity is reaching a crescendo with the annual meeting in Lille in early December. There will be full coverage of the exciting joint event with Société Française d'Ecologie in the next issue.

In terms of Society activity, post-Centenary 2014 risked feeling a bit 'After the Lord Mayor's Show' (an expression apparently based on the proverb 'After the Lord Mayor's Show comes the dustcart'), but not a bit of it. Fantastic symposia, Special Interest Group meetings, field trips, workshops and training sessions (p24-31), Policy focused initiatives, events and opportunities (p14), publishing enterprise (p47), encouragement for education (p12): the Society has had a busy year, which I hope the Bulletin has reflected well.

If we asked most BES members their opinion of investment management we'd probably get a wide range of responses including 'dull', 'irrelevant', possibly even 'evil'. Yet to provide excellent membership services of the sort we all want, the BES has to make best use of resources and build a strong financial base. Those lucky enough to have any spare cash will know that in a savings account the returns are pitiful and below inflation. Your money is worth less the longer you keep it in the bank. As BES Treasurer, Drew Purves has to manage our investments to get good returns while keeping in mind the ethical and environmental credentials of companies we invest in. Drew explains our investment policy on p6.

Following the August issue the editorial postbag bulged with a message from a Professor H A Mooney of Northern California, who respectfully suggested that if there were fewer meeting reports written by the Bulletin editor there would be more space for interesting articles. Point taken Hal, so this time there's a proper report on the outcomes of the excellent BES/DICE symposium in Canterbury (p32), and Drew Purves enthuses about a bringing together of ecologists and economists to explore areas where those 'Eco's might learn from each other (p34).

While on the topic of friends who obviate the need to seek enemies, I was able to confront our two regular essayists in person recently. Our discussion of deadlines carried strong overtones of the Monty Python sketch in which a charity collector tries, in vain, to explain to a bemused chartered accountant the concept of giving money away. Actually, the conversation also reminded me of a second Python classic, the idea of paying to have an argument. Professors Wiens and Hobbs wrote a joint essay eventually: Boom and Bust describes them perfectly (p40).

You'll notice there's no President's Piece in this issue. We felt that with coverage of Bill's initiative Gratis books (p9), mention in Policy (p17), CIEEM (p43) and on the back cover, enough was enough. Professor Sutherland will return to the front of the Bulletin next time!

Peter Thomas steps down from the role of Book Reviews Editor with this issue, completing 20 years' continuous involvement with the Bulletin. Peter served 11 years as Editor, changing the format and widening the appeal of the content. Always friendly and approachable, he set the tone that the present team is seeking to build upon. As reviews editor he actively sought out a broad range of titles for review, and built an excellent panel of reviewers to comment on them. Thanks Peter, for your considerable contribution to our Society.

Alan Crowden / Editor

Bulletin@BritishEcologicalSociety.org

The British Ecological Society is the oldest ecological society in the world, having been established in 1913. Since 1980 it has been a Registered Charity limited by guarantee. Membership is open to all who are genuinely interested in ecology, whether in the British Isles or abroad, and membership currently stands at about 5000, about half of whom are based outside the UK.

The Society holds a variety of meetings each year. The Annual Meeting attracts a wide range of papers, often by research students, and includes a series of informal specialist group discussions; whereas the Annual Symposium and many other smaller meetings are usually more specialised and include invited speakers from around the world.

Proceedings of some of these meetings are published by the Society in its Ecological Reviews book series. The Society distributes free to all members, four times a year, the *Bulletin* which contains news and views, meeting announcements, a comprehensive diary and many other features. In addition the Society produces five scientific journals. The Journal of Ecology, Journal of Animal Ecology, Journal of Applied Ecology and Functional Ecology are sold at a discounted rate to members. Methods in Ecology and Evolution is free to BES members. The Society also supports research and ecological education with grant aid. Further details about the Society and membership can be obtained from the Executive Director (address inside back cover).

The *Bulletin* circulates exclusively to members of the British Ecological Society. It carries information on meetings and other activities, comment and other topical items. Unsigned commentaries are the responsibility of the Editor and do not necessarily represent the views of the Society.

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A NEW VISION FOR YOUR SOCIETY

Hazel Norman / Executive Director of the British Ecological Society
Hazel@BritishEcologicalSociety.org

Over the course of this year, Council with the support of executive staff of the BES have been working on a new strategic plan for the Society. Hazel Norman explains the background:

Those of you who kindly took part in the membership survey this year will know that we have been focusing on priorities and direction for the next five years. We drew on much information, including membership surveys, external stakeholder views, long-term financial models and staff workshops to draw together a new vision, mission and goals for the BES. In this *Bulletin* you will find a copy of that new plan; it is also available to share on our website. We'll also be talking about it at the BES AGM, part of the joint BES/SFE Annual Meeting in Lille in December.

The BES has a long and proud history of successfully supporting the academic ecological community and this remains core to our activities going forward. However, the development of our new strategic plan has highlighted several areas where we need to work harder. The Society must raise its profile and become more influential nationally and internationally, demonstrating how ecological knowledge can help meet some of the most important challenges of the 21st century. Part of increasing our impact is gaining a better understanding of the needs, behaviours and issues facing the communities with whom we work. We also need to help ecologists interact more effectively with those in different disciplines and do more to connect ecologists in higher education organisations with those working outside academia – so that both can benefit from a freer flow of information, ideas and collaboration. These themes are reflected across the five major goals of our new plan.

The first 100 years of the BES has seen unprecedented change of the earth's ecosystems; the study of ecology has never been more important in understanding those changes and the impact of human society. This plan sets out how we will work towards our vision of a world inspired, informed and influenced by ecology.

I hope you share my excitement in this bold and challenging strategic plan for the BES and that you will seize every opportunity to get involved in helping us deliver it.

SOCIETY NEWS

Investing in the Future: Ethical Screening and the BES

Drew Purves / Honorary Treasurer of the Society
dpurves@microsoft.com

Members who read the annual report and accounts in the August *Bulletin* will know that the finances of the Society are in robust health. Our treasurer Drew Purves explains how we seek to maintain that strength while making sure that the use of our funds is in keeping with the objectives of the Society.

I am sure that, as a BES member, you carefully pore over the financial statements in our annual reports, perhaps entering the data into a spreadsheet to check that our numbers add up correctly. You will therefore have noticed that, year on year, the BES has been building up a reserve, and for good reason; our current activities are heavily subsidized by a large annual profit from publishing, a profit which many think is likely, or might, or indeed should, reduce significantly in years to come. Currently nearly 70% of Society income comes from our publications, so a significant fall from that source could have a major impact on our ability to support the current level of student support, meetings activity, research grants and all the other things we do to support ecology and ecologists. Building a significant reserve will provide an endowment to secure the Society against future changes.

One side effect is that we need to think carefully how best to invest our reserve to maximize the returns to the Society, whilst considering any ethical implications of those investments. Any members with savings will be aware of the currently pitiful returns on cash investments and there is abundant evidence that investing in the stock market is the best long term policy for the BES to pursue. The law actually requires we Trustees to maximize returns, with the exception that we are allowed to avoid investments that are at odds with our 'charitable objects' (in our case, environmental issues) or that might bring us into disrepute with our members (a rather woolly consideration that is hard to put into practise).

The BES has been using 'ethical screening' on equities (shares to you and me) for some time now with the help of EIRIS, which scores UK companies (which account for the majority of our shares) on all kinds of metrics relating to environmental, social and governance performance. Recently a small group of trustees met with EIRIS to review our ethical screening policy. We decided to tighten it up, introducing what we thought was a natural policy of screening out any company that had received the worst possible score on any environmental metric. Amazingly, this simple policy screened out over 80% of UK companies. Yes really. Screening out such a large percentage of shares is considered completely unfeasible, so we modified our policy to screen out only those companies that also had a large overall environmental impact. This still left around 20% of companies excluded – still a radical screening policy by current standards – but we felt that we could not back off any further, so this is our current policy.

We hope that the majority of BES members will be supportive of us taking an ethical stance that goes beyond the norm in the charitable, or indeed any, sector. But more importantly, the results of the screening highlight how far we still have to go to make the business world take the environment seriously. UK business considers itself, probably quite rightly, to be highly advanced in many regards. Think, workplace practises, corruption policies, and issues of gender, race and sexuality. No doubt, compared to many countries, UK business does relatively well as regards the environment too. And yet, despite the fact that environmental concerns have been high on the public agenda for decades now, the vast majority of our largest companies fail disastrously on at least one aspect of the way they deal with the environment! OMG UK PLC!

As a non-campaigning scientific society, it's arguably not our job to worry about environmental sustainability (although we know our members well enough to know that most of you are highly concerned about it). However, compared to the public at large, many BES members are highly knowledgeable about the threats to biodiversity, ecosystem functioning, and ecosystem services, and therefore, economic sustainability, that are resulting from the business world largely ignoring the natural world. We have a duty to try to provide an unbiased scientific understanding of these threats. For some time now the BES as an organization, and many of our individual members, have been engaging in this kind of dialogue, for example through being involved in government policy initiatives or reports, and the Natural Capital Initiative. All good. But perhaps more of us need to find a way to talk to business leaders directly. My limited experience with such leaders has been almost universally positive, but no doubt turning that good will into action is, like ethical investing, easier said than done.

BES SYMPOSIUM 2015 – *DEMOGRAPHY BEYOND THE POPULATION*

CUTLERS' HALL, SHEFFIELD, UK
MARCH 24-26, 2015

Co-ordinator:
Alden Griffith, Wellesley College

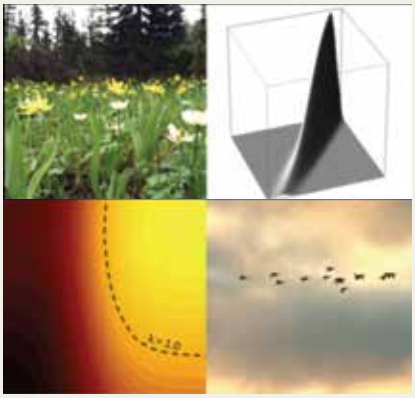
Organising Committee:
Cory Merow, Smithsonian Environmental Research Center; University of Connecticut

Rob Salguero-Gómez, Trinity College Dublin; University of Queensland; Max Planck Institute for Demographic Research

Jessica Metcalf, Princeton University

Sean McMahon, Smithsonian Tropical Research Institute

http://tinyurl.com/beyonddemog



The first of two BES Symposia in 2015 will highlight the expanding role of demographic tools as bridges across ecological, spatial, and temporal scales. Although demographic methods have long provided powerful tools for ecologists, their use has generally – and not surprisingly –focused on using population-level data to address population-level questions. However, patterns and processes at other scales are critically important in determining population dynamics (and vice versa). The relevance of forming bridges to, from, and through the population level is highlighted when one considers that the scale of population-level processes is arguably somewhere in the middle along biological, spatial, and temporal axes (see figure p8). This symposium will bring together key researchers working in different systems and focusing on different questions, but whose work expands demography beyond the population.

For example, significant temporal and biological scales are being bridged by the emerging field of evolutionary demography, driven by the recognition that demographic processes crucially underlie evolutionary processes (Metcalf and Pavard 2007, Childs *et al.* 2011). Spatial scales are being bridged by incorporating demographic factors into species range models that have often relied on presence/absence data (Vanderwel and Purves 2014, Merow *et al.* 2014a). Spanning the gap between environmental factors and population dynamics has been highlighted as a key way to improve the often poor forecasting ability of population models (Crone *et al.* 2013) and is providing new ways to quantify ecological niche space (Diez *et al.* 2014). Finally, bridging populations and communities is helping to bring new angles to some of the most fundamental questions in ecology regarding the coexistence of species (Adler *et al.* 2010).

New advances in population modelling methods, such as Integral Projection Models (IPMs; Merow *et al.* 2014b), have been a major force in expanding the broader application of demography. With a foundation on continuous variation and flexible regression techniques, one could argue that IPMs "play well" with other datasets. It is thus no surprise that many of the recent publications that utilize IPMs are asking questions about evolution, coexistence, environmental drivers, etc., and are not necessarily focused as much on population dynamics as an endpoint. However, IPMs are not the only new tool in this regard, and many relevant computational and quantitative methods have become more available and accessible to ecologists. An important goal of the symposium is to highlight key advances in methodologies and to increase awareness of the broad set of demographic tools used to address a range of ecological questions.

Importantly, this symposium is not meant to be of interest exclusively to demographers, and we enthusiastically invite those working on diverse questions, systems, and taxa. A broad range of delegates is important to achieving the main goals of the symposium:

- Foster a collective awareness of the multiple ways in which demography positively intersects with other areas of ecological research.
- Identify processes and metrics that are key to researchers working at different scales in order to foster better ways to quantitatively link them.
- Identify gaps in ecological and evolutionary understanding that can be informed by an understanding of demographic processes.
- Elucidate analytical tools that facilitate the integration of population-level processes into other biological, spatial, and temporal scales and vice-versa.

VENUE INFORMATION

We are thrilled to be hosting the symposium at historic Cutlers' Hall in Sheffield's city centre. Located directly across from the Sheffield Cathedral and its tram stop, Cutlers' Hall is conveniently situated and easily accessible. All events from Tuesday through Thursday will be held at Cutlers' Hall with a variety of rooms allowing for plenary sessions, concurrent sessions, and breakout groups. Evening poster sessions and social events will be held in the magnificent main hall, providing a distinctive character for the symposium.

CONFIRMED SPEAKERS

Yvonne Buckley

Hal Caswell

Johan Ehrlén

Stephen Ellner

Alden Griffith*

Eelke Jongejans

Sean McMahon*

Cory Merow*

Jessica Metcalf*

Arpat Ozgul

Drew Purves

Mark Rees

Rob Salguero-Gómez*

Frank Schurr

Shripad Tuljapurkar

Maria Uriarte

**Symposium Organizers*

SAMPLE OF PRESENTATION TITLES

- *Coupled dynamics of traits and populations in response to environmental change*
- *Phenotypic variance: when it matters and why it persists*
- *What drives spatial variation in population dynamics? Phylogeny, habitat suitability, environment or proximity?*
- *The demographic basis of large-scale niches and range dynamics*
- *The life histories of tropical trees in a changing climate: what are the key trade-offs?*

SCHEDULE

Tuesday March 24

- Framing and Scope
- Methodological Advances
- Environment and Physiology

Evening

- Poster Session 1
- Welcome Reception

Wednesday March 25

- Evolutionary Demography
- Conservation Ecology
- Species Ranges and Spread

Evening

- Poster Session 2
- Dinner and Social

Thursday March 26

Communities and Coexistence

Synthesis

HANDS-ON WORKSHOPS ON MONDAY, MARCH 23

Come to Sheffield a day early! There will be hands-on workshops offered the day before the symposium (Monday, March 23). This is a great opportunity to learn new methodologies and to engage with researchers that are using and developing them. Workshops will be held at the University of Sheffield and are co-organized with local host Dylan Childs. Please check the BES website for more information about attending the workshops.

Workshops offered:

Demographic, equilibrium and evolutionary analysis of structured population models with continuous development: a general methodology and software package – André M. de Roos, University of Amsterdam

Advanced applications of matrix population models: age-x-stage (and related) demographic models – Hal Caswell, University of Amsterdam

Bayesian Survival Trajectory Analysis in R using BaSTA – Fernando Colchero and Owen Jones, University of Southern Denmark

Integral projection models (IPMs) in population ecology and evolutionary biology – Symposium Organizers and IPMpack Team

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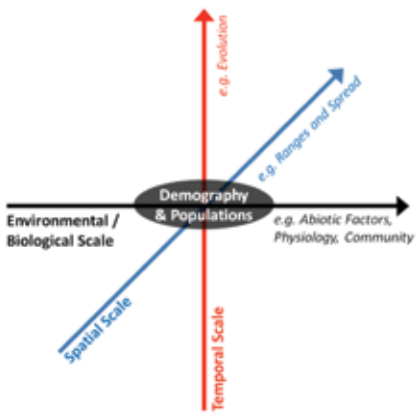


Important scaling axes pass through the level of the population

Fourteen years of free books – the Gratis books scheme

Nancy Ockendon / Department of Zoology, University of Cambridge
no200@cam.ac.uk

Ecologists and conservation biologists in developing countries have little access to decent libraries and lack funds to buy personal copies of key books in the field. Nancy Ockendon describes the origin and scope of the Gratis books scheme.

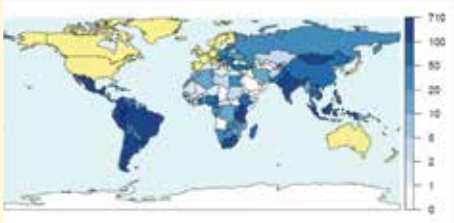
History of the scheme

The Gratis books scheme was set up in 2000, with the aim of distributing ecology and conservation textbooks to conservationists in developing countries who would otherwise be unable to obtain them. The scheme was founded by Bill Sutherland, who had just written *The Conservation Handbook* and was keen to ensure that it reached a global audience, especially those on the cutting edge of conservation practice. When his editor, Ian Sherman, told Bill that the cost of printing an extra copy of the book was roughly equal to the royalty from one book, they hatched a plan that he would receive a free copy for each one printed in lieu of royalties. Over the following few years more than 3000 copies of the book were distributed to ecologists, conservationists and libraries in 160 developing countries. Since then the scheme has been extended to 20 other conservation titles (see below), with up to 200 copies of each title being sent out to conservationists across the world.

The scheme works because the authors and publishers (Oxford University Press, Wiley-Blackwell and Cambridge University Press) kindly provide the books free of charge, the BES generously pays for the postage, and the environmental bookstore NHBS co-ordinates the scheme. Anyone may apply for a book from the titles currently available on the website, either for themselves or for others, with the proviso that recipients are restricted to those outside Western Europe, North America, Japan, Australia and New Zealand. Twice a year the authors of these books consider all the applications together and select the most deserving individuals to receive a copy. This leads to a win-win-win-win situation, with conservationists accessing books that they would not otherwise be able to, authors getting to widen their readership, NHBS gaining more visitors to its website and the publishers gaining publicity, goodwill and a guaranteed space in heaven. Everyone participates because they believe that it is a cost-effective way of making a difference and improving global conservation practice.

Where have books been sent?

Over 8000 books have been distributed in the fourteen years since the scheme was established. These books have been sent to a huge range of countries, as shown in the map below. The darker blue a country is coloured, the more Gratis books it has received; the countries that have received the most books are Brazil, India and Colombia. Those coloured yellow are not eligible for the scheme.



Book titles distributed under the scheme

The first title to be distributed under the Gratis Book Scheme was William Sutherland's Conservation Handbook. Since then, titles that have been included have covered topics such as habitat management, statistical analysis, conservation genetics and remote sensing, as well as a range of taxa from insects to marine mammals. The titles currently available are 'Wildlife Ecology, Conservation and Management' by Fryxell, Sinclair and Caughley, 'Marine Conservation' by Carleton Ray and McCormick-Ray, 'Primate Ecology' by Sterling, Bynum and Blair, and 'Conservation and Carnivore Ecology and Conservation' by Boitani and Powell. Other suggestions for books are most welcome.

Happy recipients

"We work in the management of a set of natural areas and the book Conservation of Hambler and Canney, we use as references for the planning work. It has been very important in all stages of work, especially in establishing the general framework for "why conserve?" and evaluating threats of ecosystems present. In the picture you can see inside the Campo Mar Chiquita Nature Reserve in Argentina, a biologist who conducts research at the site, explaining the characteristics of the habitat present to a group of students doing their first visit to the reserve."

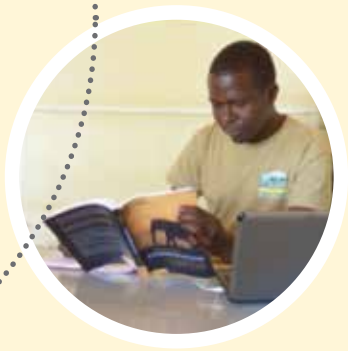
Martin Diaz

"The Madagascar Fauna and Flora Group (MFG) is very grateful to have been the recipient of several books via the Gratis Books Scheme. All titles are placed in our conservation library, based at our headquarters in Toamasina, on the east coast of Madagascar. The library is part of our capacity building focus for local environmental partners and is open five days per week to university students as well as to the general public."

Maya Moore, Madagascar Flora and Fauna Group

My name is Lucia Mhuulu and I am a Master Student at University of Namibia, conducting my research at the Cheetah Conservation Fund, Namibia. My masters' thesis focuses on the use of non-invasive techniques (genetics and camera traps) for estimating cheetah abundance. The Carnivore Ecology and Conservation book you donated has been very useful in towards my work, in particular Chapter 4 "Noninvasive Sampling for Carnivores".

A photograph of Duncan Kimuyu preparing lecture materials for a Wildlife Management class using one of the books received through the Gratis Books Scheme. Duncan teaches ecology and conservation classes in the School of Natural Resource management, Karatina University, Kenya and has received six books through the Gratis Books Scheme. These books have become important reference materials for him, his colleagues, and students in Karatina University, thanks to Gratis Books Scheme.



I can't thank you enough for your book donation! Your support is advancing ecological research in the Philippines. I use the books that you donated in teaching methods and techniques in conservation ecology to my undergraduate and graduate classes. I currently have three graduate thesis advisees working on birds and five undergraduate students working on birds and amphibians. Many of these species are endemic with a few that are threatened. A number of faculty members at my institute have borrowed the books for their own research or as reference in advising undergraduate thesis students. The book on invasive species management was useful during a national forum on invasive species. The list is long and that is just after less than a year of receiving the books! Ask me in another year and it will be even longer.

Carmela Española,
University of the Philippines

ECOLOGY EDUCATION AND CAREERS

in2scienceUK 2014 BES sponsored students

Karen Devine / Education Manager, British Ecological Society
Karen@BritishEcologicalSociey.org

In2scienceUK placements enable AS-level science students to experience research science first hand, to learn research methods and techniques, and to undertake wider reading around their subjects. This year, over 108 students have been placed in laboratories around London and Bath, covering the entire range of STEM subjects from Cell Biology to Neuroscience, Computational Chemistry, and Physics.

This year we increased our range of host institutions to include five universities (University College London, King's College London, Imperial College London, Goldsmiths, and the University of Bath), as well as a number of other renowned research institutions including the Crick Institute and the Natural History Museum.

In2scienceUK founder Rebecca McKelvey said of this year's scheme " we are very privileged to be funded by the BES which has allowed us to place more aspiring scientists from low income backgrounds into ecology-based placements'. This year the BES funded 10 students based in London and the Bath/Bristol area.

CASE STUDY 1: DIVISION OF GENOMICS AND MICROBIAL DIVERSITY, NATURAL HISTORY MUSEUM, LONDON

2013 BES sponsored students Bethany Jordon (right) with Supervisor Alessandra Dupont. Bethany is now at the University of Bath studying Biology.

Photo: 2014: Cassandra taking a break from the lab to look around the museum

Supervisors: Alessandra Dupont

Head of research group: Dr David Bass

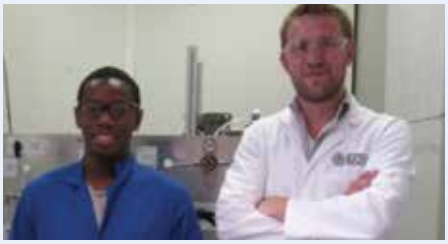
Research areas: Investigation into the effects of predators in model ecological communities composed of bacteria and their predators, protozoa.

Students: Cassandra Neves and Fahim Uddin (both UCL Academy)

From Alessandra:

"I've been part of in2scienceUK for two years now, and it has been a great experience! In August 2013 I hosted Bethany Jordon who arrived with a broad interest in biology, but clearly motivated in learning more. She has now progressed to the University of Bath to study a science degree and that her decision was strongly influenced by her placement in the museum. Likewise, the two students hosted this summer, although they didn't have a proper laboratory experience, showed great enthusiasm. They worked hard and with a constant curiosity. If they were initially insecure about what they could achieve, by the end of the placement they knew exactly what to do without detailed directions. Their confidence grew every day, as well as their curiosity about both a researcher's routine and the work carried in the lab. Before leaving on their last day this year, one of them said: 'we'll know so much more about lab techniques than the others, when back in school next week!'"

CASE STUDY 2: DEPARTMENT OF ENGINEERING, THE UNIVERSITY OF BATH.



Maleik with Dr Chuck at the University of Bath

Supervisors: Dr Chris Chuck

During the placement Maleik was given a project to convert coffee bean waste into a clean cheap and sustainable fuel (biodiesel). During the placement Maleik's highlight was working on a new and original project as well as speaking to a variety of members about careers and different degree options as well as learning a variety of science skills. Dr Chuck was very impressed with Maleik's genuine interest, excellent questions and dedication throughout the project.

ECOLOGY EDUCATION AND CAREERS

The 2014 Enhancing Fieldwork Learning Showcase event

Karen Devine / Education Manager
Karen@BritishEcologicalSociey.org

In early September a group of Biology, Ecology, Zoology, Environmental Science, Geology and Geography lecturers came together to discuss how Undergraduate teaching and learning in the field could be supported with digital technologies, apps and other tools. The event was hosted by the British Ecological Society and developed by the Enhancing Fieldwork Learning project team*

When restricted to using iPads in the field. Cables are a makeshift quadrat

The showcase was kicked off by Trevor Collins and Sarah Davies from the Open University. Adoption of the Bluetooth LE standard has led to the development of low-power wireless sensors that can connect directly with mobile phones and tablet devices or to the internet via a network point. Like other mobile devices, the exploitation of these technologies at scale within commercial industries is resulting in the production of relatively cheap sensor devices (e.g. SensorTag, SensorBug and Wimoto sensors) .

Sarah Taylor reported on a pilot study funded by a Keele University teaching innovation grant and School of Life Sciences teaching equipment grant investigating the potential to embed an activity utilising iPad educational apps and a self-directed tree tour to boost species identification skills. The Here&Near app and four tree species ID apps (FSC trees, ForestXplorer, LeafsnapHD and Isoperla's British TreeID) were used to identify the tree species.

Kat Jones demonstrated how to enhance student engagement pre-field trip to shift to a more student-led trip. A class "wiki" was used to produce the field-trip handbook and provided the only handbook for students.

Alice Mauchline from the University of Reading created a private Facebook group for a recent fieldtrip to Iceland to improve student learning, facilitate communication and develop their digital identities. To conclude the fieldtrip, the students were asked to write an assessed blog post on a public platform as a way of enhancing their professional digital identity. The blog was intended to encourage the students to reflect on how their field activities enhanced their understanding of the environmental samples they were using in the lab sessions.

You can read the storify here at https://storify.com/FIELDWORK_NTF/the-efl-showcase-2014

**University of Reading: Professor Julian Park, Dr Alice Mauchline, University of Chester: Professor Derek France and University of Sheffield: Prof Brian Whalley.*

The Enhancing Fieldwork Crew

SCIENCE POLICY

What next for environmental policy in the UK? Looking ahead to the general election

Ben Connor / Policy Officer, British Ecological Society
ben@britishecologicalsociety.org

MPs have returned to the House of Commons for the final sessions of this Parliament, and party strategists are gathering their thoughts ahead of the long campaign leading up to 7 May 2015: the UK's next general election. The coming months look set to see a closely fought and unpredictable race, with opinion polls showing no party holding a consistent lead, and support for smaller parties such as the Greens and UKIP eating into the support of the established triumvirate of the Conservatives, Labour and the Liberal Democrats.

So where will the environment figure on the agenda as the election campaign unfolds? Will our political parties address our biggest ecological challenges head on, informed by sound science, or will the natural environment remain a footnote in conversations dominated by the economy and immigration? As manifesto pledges emerge in the aftermath of the conference season, now is an apposite time to review the political landscape.

A NATURE AND WELLBEING ACT

In the run up to the election, the RSPB and The Wildlife Trusts are calling for political parties to commit to introducing new legislation – a Nature and Wellbeing Act – in order to "secure nature's recovery in a generation." Their proposal is framed by the conviction that a thriving natural environment is vital not just for its own sake, but as part of a solution to a host of social, economic and environmental problems from mental and physical health to pollination and water supply. The key pillars in the proposal are legally binding targets for biodiversity and the embedding of a natural capital approach across government, supported by a new independent statutory body able to hold government to account. For more information see www.wildlifetrusts.org/tags/nature-and-wellbeing-act

At the Conservative Party conference, recently appointed Environment Secretary Liz Truss defended the government's record of "practical conservative environmentalism" and promised that under a Conservative majority, Britain would "lead the world in food, farming and the environment"[1]. However, beyond a determination to "press ahead with restoring habitats", no new policy commitments were announced, suggesting a continuation of the flagship policies of the current government, as outlined in the Natural Environment White Paper, 'Nature's Choice', launched in 2011. Of possibly greater significance is the Conservatives promise of a referendum on EU membership should they win an overall majority, potentially placing the UK beyond the reach of European legislation such as the Common Agricultural Policy and the Birds and Habitats Directives.

For Labour, Maria Eagle, Shadow Environment Secretary, used her speech at the party's conference[2] to deliver a strong critique of the current government, describing its environmental record as "appalling." On one of the most controversial environmental policy issues of the last few years, Labour has committed to following a different course, pledging to end the current badger cull and establishing an alternative approach to tackling Bovine TB.

Beyond that commitment, a number of priority areas have been outlined, but with little firm detail, including a national framework for improving air quality, a new climate change adaptation programme and enhanced flood protection.

Of all the main parties, the Liberal Democrats have the most clearly articulated policy position on the natural environment, with a commitment in their "pre-manifesto[3]" to introduce a Nature Bill as one of "five new laws to protect the environment." Similar to that being proposed by the RSPB and The Wildlife Trusts (see Box), the bill would introduce legal targets for biodiversity, clean air, clean water and access to green space, extend the right to roam and establish new marine and coastal reserves. Also included is a commitment to establish the Natural Capital Committee in law and a mass tree planting programme over the course of the next parliament.

ENVIRONMENTAL QUESTION TIME

Join the British Ecological Society, The Sibthorp Trust and the Chartered Institute of Ecology and Environmental Management on 9 March 2015 at The Light, Euston Road, London for the opportunity to hear a panel of speakers representing the UK's major political parties answer your questions on the environmental content of their manifestos. The accomplished broadcaster Jonathan Dimbleby will chair what promises to be an informative and lively debate.

For full details and ticketing information, check www.britishecologicalsociety.org or follow @BESPolicy for the latest updates.

Beyond the "Big Three", The Green Party, in addition to its cross-cutting environmental ethos, has also committed to the creation of a new Nature and Wellbeing Act[4], which would include specific targets for nature's recovery, a mechanism for creating a national ecological network and targeted action for nationally threatened species. While UKIP's manifesto is still under development, their pledge to "scrap green taxes" and previously professed climate scepticism is offset by the priority placed on protecting green spaces in last year's local election manifesto[5].

With large portions of environmental policy devolved to the UK's constituent nations, the positions of the nationalist parties are of increasing importance, especially in light of the promises of further devolution across the country following the Scottish referendum. The Scottish National Party's vision for a "greener Scotland"[6] focuses mainly on tackling climate change, but with an emphasis on reforestation and the protection of peatlands as carbon sinks playing a key role. In Wales, Plaid Cymru has also been vocal in its demands for greater action on climate change[7]. In Northern Ireland, the Democratic Unionist Party, the largest party in both Westminster and the devolved assembly has pledged to prevent species decline and the loss of habitats by 2020, with a particular emphasis on the restoration of native woodlands[8].

While manifesto pledges and policy proposals will doubtless be fleshed out over the course of the next few months, from a scan of party websites and leaders' conference speeches it is clear that the natural environment is not currently high on political agendas: ecological issues will have to vie for attention with a host of other concerns. So what can BES members do? Write to your local MP, or visit their constituency surgery to highlight the issues that matter to you. Or why not attend our environmental question time event on 9 March (see Box)? If you can't make it on the day, follow the latest updates on the BES Policy blog, or on Twitter @BESPolicy, or join in the debate using the hashtag #ecoQT15.

Ben Connor is the new Policy Officer at the British Ecological Society, working to communicate ecological science to policymakers and to help ensure that policy decisions are built on the best available evidence. Ben joined the BES in September, having previously worked for the Bristol Natural History Consortium, where he managed collaborative projects bringing together policy, conservation, media and research organisations. Ben is looking forward to working with members to engage with policy, so please get in touch if you are keen to get involved in our policy work.

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[2] http://press.labour.org.uk/post/98217103749/speech-by-maria-eagle-mp-to-labour-party-conference

[3] http://www.libdems.org.uk/policy_paper_121

[4] http://greenparty.org.uk/news/2014/09/09/green-party-introduce-a-nature-and-wellbeing-act/

[5] http://www.ukip.org/

[6] http://www.snp.org/vision/greener-scotland

[7] http://www.partyofwales.org/our-vision-for-wales-environment/

[8] http://www.mydup.com/policies/environment

SCIENCE POLICY

Mutualism: Science – Policy Interactions in Scotland

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Ceri@BritishEcologicalSociety.org

Ecologists and policy-makers don't speak the same language. Researchers probe questions over long timescales whilst policy-makers need answers tomorrow, if not today. In the words of the authors of a recent paper on the science – policy interface in public health: 'scientists and policy-makers have different mentalities: for example, their goals, attitudes towards information, languages, perception of time, and career paths differ. The imperatives that drive scientists and policy-makers are also different, along with their production processes and what they consider to be good evidence'.[1]

With such apparently insurmountable disparities between ecologists and policy-makers, it may seem an impossible task to break down the barriers between these two communities. Yet to encourage good communication between scientists and policy-makers is essential to the development of evidence-based, sound environmental policy. This is central to the work of the British Ecological Society and this ambition has been ably championed by the Society's Scottish Policy Group in 2014, with a number of networking events for ecologists and policy-makers.

Scanning the horizons of Scottish environmental policy

Prof. Rob Brooker, Chair of the Scottish Policy Group, with Graeme Cook from the Scottish Parliament Information Centre (SPICe) and participants at the Policy Training Workshop

From climate change to invasive non-native species, population growth and demographic change to the emergence of novel technologies, there are plenty of issues on the horizon that exercise policy-makers and researchers alike. Yet these two communities may not often come together to discuss these challenges and share their perspectives, identifying policy questions and research needs. Back in June, members of the Scottish Policy Group, staff from the Scottish Government and Scottish Natural Heritage, convened in Edinburgh for an evening workshop to do just this.

One of the main points to emerge from wide-ranging discussions was the need for greater communication between scientists and policy-makers. This is perhaps not surprising, or particularly novel, but it was heartening to have the feedback from policy colleagues that regular input from ecologists is welcome. Ecologists need to be better at understanding what the users of research require and to work with them to design studies from the start so that these are answering policy-relevant questions; engaging in trans-disciplinary, as well as interdisciplinary research. Meanwhile, policy-makers must be more adept at communicating with researchers to tell them what these policy-relevant questions are.

A full report of the topics to emerge from discussion is available on the BES website[2]. To provide a flavour of the specific points to emerge in relation to particular policy areas, there was a particular focus on invasive non-native species: namely the need to be more fleet of foot in preparing risk assessments to determine which species are major threats and where further action is required. Dealing with risk and conveying this to policy colleagues in the absence of robust evidence was also discussed. Regular horizon scanning by standing groups of experts could help to identify emerging threats and there was a suggestion that the BES could play an important role in facilitating this.

The ongoing management of invasive non-native species was highlighted by both scientists and policy-makers as a research gap. Finding an expert on particular species that pose a threat is relatively straightforward. It is more challenging to find evidence on how to control and manage a non-native species when established. Evidence-based ecological advice on the different options to manage invasive non-native species, with research into these options, is important.

This event provided an opportunity to consider some issues of significance to environmental management and to think about where policy and ecological research may be lacking. Perhaps most importantly, this informal event allowed networking between researchers, practitioners and decision-makers, and resulted in an undertaking to repeat the exercise in summer 2015.

Policy, POSTnotes…and Pandas

Early career researchers represent the future of ecology and of the British Ecological Society. It was therefore extremely encouraging that a Policy Training Workshop, organised by the Scottish Policy Group at Edinburgh Zoo in October, saw over thirty participate. The opportunity to visit the zoo's giant pandas, Yang Guang and Tian Tian, was surely a draw, but undoubtedly too was the chance to hear from an engaging panel of speakers who had experience of straddling the science –policy interface.

Professor Maggie Gill, former chief scientific advisor to the Scottish Executive's (now Scottish Government) Environment and Rural Affairs Department, delivered her reflections on the importance of scientists communicating complex concepts simply. Dr Ian Bainbridge, Scottish Natural Heritage, also touched upon simplicity, brevity and relevance in dealings with policy-makers. Ian also emphasised the importance of ecologists familiarising themselves with the relevant policy-makers (an easier task in Scotland, with fewer people to get to know in Government, than in England). Reliability – the standing and track record of researchers communicating with policy-makers – was also discussed; developing a reputation for credible advice will lead to further calls from policy colleagues.

Neil Ritchie, Scottish Government, alluded to this in his own presentation, speaking about needing to know, quickly, who to pick up the phone and call, while being sure that he will receive a useful answer. Neil acknowledged that policy-making is '50,000 shades of grey', with complex issues requiring information to be collated from numerous sources and an element of 'making it up as you go along', rather than an ordered and rational policy-cycle. Neil called for simple, short, understandable briefings that demonstrate multi-disciplinary engagement in answering tricky policy-relevant questions.

Such a briefing was drafted last year by Danny Heptinstall, University of Aberdeen, as the BES's Fellow at the Parliamentary Office of Science and Technology. Developing a POSTnote on 'Risks from Climate Feedbacks', and launching this earlier in 2014 at a breakfast briefing in Westminster, allowed Danny an insight into some parliamentarians' perceptions of ecologists, as 'green' and somehow a bit strange. The briefing event, bringing together MPs and expert speakers, allowed MPs to dispel these preconceptions and led one MP to query why more science advice wasn't informing policy.[3]

From traditional to modern approaches to monitoring

The final element in the Scottish Policy Group's busy calendar this year was the joint conference between the BES, the Science and Technical Group to the Scottish Biodiversity Strategy and the Chartered Institute of Ecology and Environmental Management (with additional support from the RSPB's Centre for Conservation Evidence). Taking place immediately after the Policy Training Workshop, across Edinburgh at the Royal Botanic Gardens, BES President Professor Bill Sutherland's opening lecture set the scene for engaging and stimulating discussions the next day, of which there is space only to reflect a flavour here (a summary of discussion is available on the BES website)[4].

Environmental monitoring is at the heart of delivering the solutions needed to help conserve biodiversity, using both what may be considered more traditional methods and novel approaches. Drones, robots and 'e-DNA' will be used in the future to locate species to be monitored, suggested Professor Sutherland. Increasingly sophisticated software will be able to feed back to members of the public, citizen scientists, greater information about the organisms they have recorded and entered online. Metadata recorded, for example by smartphones, at the same time as a sighting of an organism, will increasingly be integrated with other information about the behaviour, ecology and conservation status of species. This will allow the development of models for population changes, benefiting decision-making regarding management by policy-makers and practitioners.

Continuing the conversation

A significant theme to emerge from all of this year's Scottish Policy Group events has been the need to maintain the conversations between the ecological and policy communities begun through the work of the Group. Regular communication is vital to build trust.

Bill Sutherland delivering his lecture on new technologies for monitoring biodiversity.

Delegates networking at the BES's joint conference on 'Protecting Scotland's Biodiversity:Monitoring in Action'.

Responding to the needs of policy-makers requires this community of research users to speak to ecologists at an early stage, informing the way that research projects are designed to answer policy-relevant questions. The Scottish Policy Group certainly intends to allow further opportunities for these two groups in Scotland to mix. Plans for 2015 already include an informal evening networking ('Pie and a Pint') event mooted for the spring, with a follow-up horizon scanning workshop in the summer. Finally, there will be the opportunity to showcase the work of the Scottish Policy Group and wider BES to Members of the Scottish Parliament in December 2015, when the group organises a reception at Holyrood, sponsored by Mary Scanlon MSP, as part of the busy programme for the BES Annual Meeting in Edinburgh.

Finally, in a return to the paper mentioned at the beginning of this article, the authors conclude by describing the relationship that they wish to see develop between scientists and policy-makers. They state that: "It is our hope that scientists and policy-makers [in public health] can draw lessons from ecology…Ecologists will tell us that populations can evolve together antagonistically or complementarily… The term 'mutualistic relationship' is used to describe the co-evolution of two populations in which both benefit".

The excellent work of the Scottish Policy Group since its formation in 2012, and in particular this year, does indeed provide a valuable example from ecology of how interactions between scientists and policy-makers can be encouraged. Over the coming years, doubtless the relationships between ecologists and decision-makers in Scotland, developed though the Group's busy programme of work in 2014 and beyond, will continue to flourish and develop mutualistically, to the benefit of both communities.

The BES Scottish Policy Group is chaired by Professor Rob Brooker, James Hutton Institute. Any member of the BES with an interest in Scottish environmental or science policy is welcome to join.

Group members will benefit from:

- Keeping up-to-date with policy developments in Scotland;
- Developing contacts at the science-policy interface;
- Exchanging information and ideas;
- Receiving dedicated Scotland policy briefings from the BES Policy Team;
- Having the opportunity to influence environmental policy-making in Scotland.

To join the group, email the External Affairs Team: policy@britishecologicalsociety.org.

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[1] Choi, B.C.K., Pang T., Lin, V., Puska, P., Sherman, G., Goddard, M., Ackland, M.J., Sainsbury, P., Stachenko, S., Morrison, H., Clottey, C. 2005. Can scientists and policy makers work together?. J. Epidemiol Community Health, 59, pp632-637.

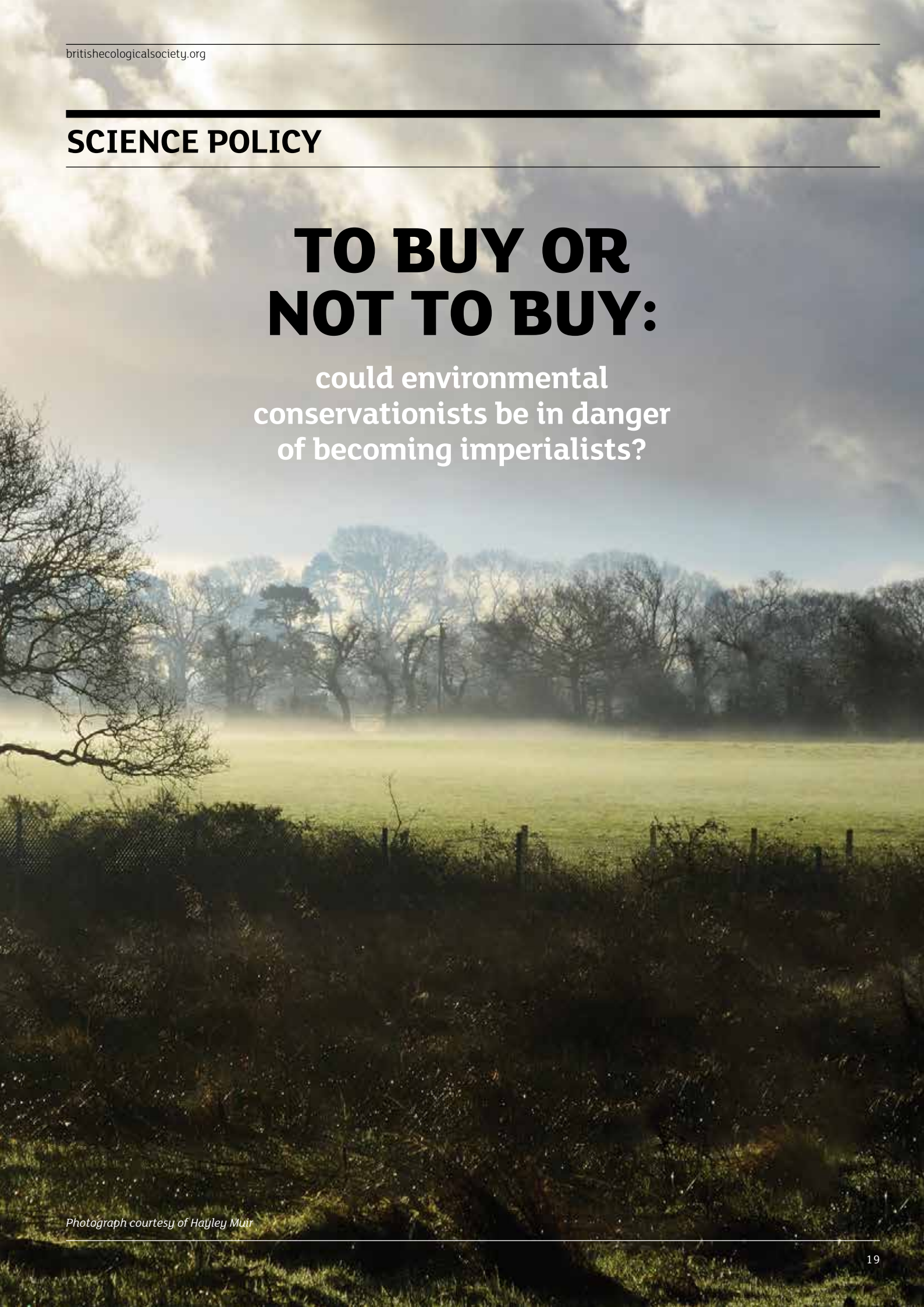
[2] Find out more about the Scottish Policy Group, and read a summary report of the horizon scanning session here: http://www.britishecologicalsociety.org/public-policy/get-involved/scottish-policy-group/.

[3] We also learned from Danny that House of Lords champagne is better than that in the House of Commons, important for any PhD student to know if considering applying for next year's POST Fellowship: http://www.britishecologicalsociety.org/public-policy/training-and-funding/bes-post-fellowship/.

[4] Details of our past Policy events can be found online here: http://www.britishecologicalsociety.org/public-policy/policy-events/past-events/.

TO BUY OR NOT TO BUY:

could environmental conservationists be in danger of becoming imperialists?



Photograph courtesy of Hayley Muir

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Degraded habitats, widespread deforestation and increased pressure on resources … it's enough to make any environmentalist weary. Many would agree that buying up all the land needed to protect our vital ecosystems isn't the solution – it would simply be too expensive. But even if it was affordable would that be money well spent?

The idea of buying up land to protect wildlife and habitats resonates throughout conservation. Here in the UK, NGOs such as RSPB, The Wildlife Trusts, and the Woodland Trust all focus significant resources on their nature reserves. These can act as havens for wildlife and a source for populations to spread out from if improvements are made to the surrounding landscape. More recently however, there is an increasing emphasis on helping private landowners manage their land more responsibly. Rather than wait around for something to be done to improve the land around their nature reserves, these NGOs are taking matters into their own hands.

The big benefit of buying land to protect it is that you have security that long term solutions can be put in place: "buying land means you have complete control over the management" says David Dench, Head of Conservation at Worcestershire Wildlife Trust. "The real issue is that even if the landowners wanted to sell, the cost of buying up all the land we'd like would be unrealistic. Besides, many landowners manage their land very effectively and working with them allows cooperative management across a much wider area which obviously has a much greater benefit for wildlife."

There are certain priority criteria to decide where to buy: "One of the things we consider is the fragility of the habitat, for example here in Worcestershire we focus on protecting grasslands," David adds, "these are much less robust than woodland habitats and can suffer hugely if neglected." Another possible criterion is whether it lies in one of the Living Landscapes areas, which have been identified across the UK by the Wildlife Trusts to promote a landscape scale approach to conservation.

The 'landscape scale' approach is already embedded in the strategic plan of most UK conservation organisations, however implementation is still in its early days. Aidan Lonergan is the RSPB's Futurescapes manager and works on developing the RSPB's approach to landscape scale conservation in the UK. "Rather than working with sites we don't know, many of the Futurescape sites are an extension of our current sites; working at a landscape scale is an obvious extension of the work we already do." As of yet there is no solidified national programme or shared policies between these NGOs but all organisations could benefit from sharing best practice and information. "There is a need for organisations with similar aims to act with greater maturity and respond in unison to the problems outlined in the 2013 State of Nature report" Aiden adds.

THE UK'S BIGGEST LANDOWNERS

The UK comprises of about 60million acres of land. Some of these top landowners – owning a total of about 10% of UK land – do have priorities to manage land for environmental gains, but what about the other 54million acres? (1 acre is 0.404ha)

1. The Forestry Commission: 2,571,270 acres
2. The National Trust: 630,000 acres
3. Defence Estates, for the Ministry of Defence: 592,800 acres
4. The Pension Funds: 550,000 acres
5. Utilities: water, electricity, railways: 500,000 acres
6. The Crown Estate: 358,000 acres (not including seabed, foreshore and urban estate)
7. The RSPB: 321,237 acres
8. The Duke of Buccleuch & Queensberry, Scotland: 240,000 acres
9. The Wildlife Trusts: Collectively own 222,395 acres
10. The National Trust for Scotland: 192,000 acres

Adapted from: Country Life 2010, Who Owns Britain – Top UK Landowners

"You don't have to be a tree hugger to appreciate the value of rainforests. The carbon storing capacity makes it highly valuable in carbon offsetting schemes built into many commercial ventures now."

Restoring landscapes can also provide economic gains to human populations and this is when natural capital truly comes into its own. An assessment of land use by the Office for National Statistics highlights that the majority of the land in the UK (75%) is used for agriculture. The answer to protecting ecosystem services can't be to revert all farmland to nature reserves – we do need this food after all to feed the growing population. Agri-environment stewardship agreements are supposed to encourage land owners to manage their land responsibly. Caroline Corsie is Worcestershire Wildlife Trust's Agricultural Officer, "many farmers in the older generation can remember a time before intensive farming when wildlife was much less scarce in our countryside, and they want to put it right." Perhaps through working collaboratively with these landowners there's a better chance of having a large scale impact.

So can the same principles be applied in protecting our rainforests? Those of us that watched the BBC TV series 'I Bought a Rainforest' earlier this year saw the scale of the problems faced internationally. Wildlife photographer Charlie Hamilton James, perhaps naïvely, bought a small patch of rainforest with the intention of doing his bit to stop this ecosystem deteriorating. Whilst some of us might have been inspired to start saving our pennies for our own philanthropic plot of degraded habitat to restore (a feasible option at £60 per acre of Amazon) jumping into an acquisition like that isn't all rosy. Charlie realises that he cannot protect habitat simply by owning it; whether in a tropical country or in the UK, the importance of education and building good relationships with locals is paramount. Most people want to do the right thing and will take the option with minimal environmental impact – if there is no negative impact on their own wellbeing.

World Land Trust (WLT), is one of many charities allowing donors can buy an acre of tropical rainforest, and they take a sustainable approach in implementing this. The money raised is used to help local partner organisations purchase and restore land in rainforests. Working with local partner organisations helps overcome restrictions on overseas organisations purchasing land in certain countries, but it is also perhaps a more sustainable approach. The WLT have good policies in place to include local people in all projects: local scientists, local volunteers, park wardens and local governments. In doing this they avoid the stigma associated with hot shot westerners coming in to save the day. However, RSPB's Head of Tropical Forests, Jonathan Barnard, does not believe that acquisition of land is a necessary step in its conservation: "Buying land isn't the answer, and in most cases would create more problems, such as 'green colonialism'." The RSPB have achieved international gains for wildlife on land they don't own through projects, for example, in Indonesia and Sierra Leone.

Acquisition of land has played a huge part in protecting it from deterioration, and will most likely continue to both in the UK and oversees. However the challenge we really face requires a much less simplistic solution. Big behavioural changes are needed, as is a new attitude to how we should be managing agricultural land, fisheries, and forests to maintain and restore our ecosystem services.

One acre of rainforest...

£60

...can cost about £60 to buy

50p

...can be protected for as little as 50p through empowering indigenous communities

200 tonnes

...can store 200 tonnes of carbon

Why you should be on Twitter

Richard English / Communications Manager / British Ecological Society
Richard@BritishEcologicalSociety.org

We at the BES love Twitter. It allows us to hear from and speak directly to thousands of people. It's not the only way we communicate with our members, but it's one with massive reach.

In the past few years, Twitter use has become more widespread in our field – and for good reason. People have seen its potential for disseminating research on a global scale, highlighting opportunities to get involved and networking with people in different disciplines.

Twitter is an informal, information network made up of 140 character messages called 'tweets'. 274 million people across the world are on Twitter – and they're not *just* talking about One Direction.

Set up a profile and you can craft your own newsfeed from tweets of people and organisations you like – by choosing who you follow, you will sieve out the extraneous noise for a fully tailored feed. Much of the breaking news appears first on Twitter – that includes career opportunities – so, chances are, you will hear things first.

It's also a great leveller as Twitter allows you to chat directly with someone you would ordinarily not meet – or not feel comfortable approaching.

Online communication can be faceless and it might be tempting to dispense with manners; before you tweet, think about whether you would say it to someone's face. Potential employers and collaborators might be watching…

WHY BECOME A TWEEP:

World domination

Join up and extend your global networking possibilities by millions

Network

Don't be shy, connect with people by using their @username in your tweet, e.g. *Hi, @BritishEcolSoc do you run policy intern programmes?*

Talk, help, share

Tweet about what interests you. Need help? Tweet and someone can probably give it. Know the answer to someone's question? Tweet them. Found a tweet interesting? Tell them. It's easy to make a connection

Lurk

You don't *have* to tweet – just follow the people you're interested in, sit back and read

Be your business card

Show your personality; people are less likely to engage if you have a blank profile. Carve yourself a niche

Favourite

Click on the 'favourite' button of a tweet to store useful links, advice or contact details

HOW TO BECOME A TWEEP:

1) Go to Twitter.com and download Twitter to your device

If you have it on your tablet or phone, you can more easily take a photo/video and share it immediately

2) Create an account

Your username could say something about you, whether it's your name or area of research, e.g. @Bill_Sutherland, @WaspWoman

A long username will eat into the 140 character limit and give people less room to talk. And no one likes that…

3) Upload a photo to your profile

People who keep the generic 'egg' image are less likely to be taken seriously. Change it to a photo of yourself for ease of recognition. Unless you look like an egg…

4) Follow people

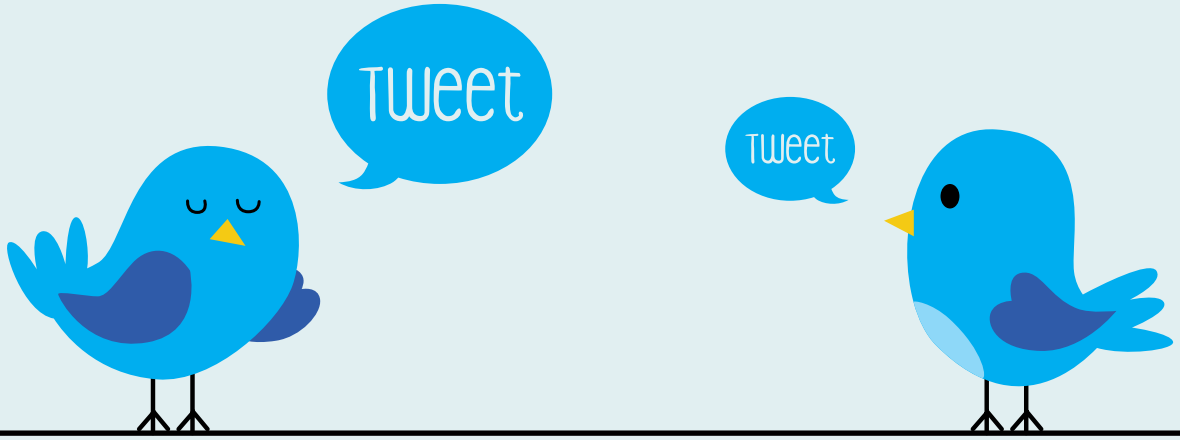
Look at @BritishEcoSoc to see who follows us and who we follow; get inspiration for people you might want to follow, then look at *their* followers. Click their 'follow' button to have their tweets appear in your timeline

5) Accruing Followers

Don't worry about this – you don't *need* a million followers. Most people are friendly and will follow you back

6) Find conversations

Click on the hyperlinked hashtag or type in the 'search' box to join in a conversation, e.g. #ecology, #womeninscience, #marine. Use the official hashtag when tweeting from a meeting, e.g. #BESSfe; that way, people can follow proceedings wherever they are based.



HOW TO BE A TWEEP AT OUR ANNUAL MEETING

- Sign up before the meeting so you can build connections ahead of time
- Follow @BritishEcolSoc and @SFEcologie and search for the meeting hashtag: #BESSfe
- Put your Twitter handle prominently on your talk or poster
- Poster sessions will be busy, so let people know other times you will be available
- Tweet about your talk or poster before you are due to present
- Be confident and tweet at specific people you want to notice your presentation, e.g. *Hello @GMMace. My 09.45 talk on biodiversity directly links to your project. Be great to chat afterwards.*
- Tweet a photo of where your talk or poster will be. Even try a selfie, so people can more easily find you
- Remember that Twitter will not only help you connect with people *at* #BESSfe, but also those users *not* attending
- Questions for plenary speakers will only be taken via Twitter; this means questions will be succinct, shyer delegates can participate and people outside of the meeting can join in, too
- Keep the conversation going – maintain connections you make after #BESSfe has finished. Twitter is for life, not just Christmas (well, until the Next Big Social Media Thing comes along…)

GLOSSARY

@

This identifies a username, e.g. *Hello @BritishEcolSoc!* People will use your @username to mention you in tweets or in a direct message

DM

Direct Messages are private conversations between people who follow each other. They also have a 140-character limit

Favourite

Favouriting a tweet indicates that you like it; you can also use the function to store information. Find your favourite tweets by clicking on the 'favourites' button on your profile. The author will see that you liked it

Follow

Click the 'follow' button next to their username to have their tweets appear in your feed

Hashtag or #

This groups conversations and marks keywords, e.g. #fieldwork. Click on the hyperlinked hashtag or type it into the search box. Popular hashtagged words are often 'Trending Topics'

Mention

Inclusion of another Twitter user in your tweet, e.g. *Thank you @BritishEcolSoc for a great meeting*

Reply

A response to someone's tweet that begins with their @username. Click the "reply" button to comment on a tweet

Retweet (RT)

Someone's tweet that you forward to your followers; often used to pass along news, views or jobs

Username

Your name on Twitter; it is always immediately preceded by '@', e.g. @BESpolicy

Trend/Trending Topics

A topic or hashtag that is popular at that moment, e.g. #Christmas

Tweep

A Twitter user

Tweet

A message that may contain photos, videos, links and up to 140 characters of text

Would you prefer a practical Twitter 101 tutorial? Richard English, Communications Manager, will be on hand throughout #BESSfe and is easily bribed with biscuits and cake.

Thanks to @ASPB for providing a helpful blog on Twitter use at meetings: http://blog.aspb.org/2014/06/23/social-media-increase-visibility-poster/

Twitter itself has useful guidance: https://support.twitter.com/groups/50-welcome-to-twitter# and https://support.twitter.com/articles/215585#

SPECIAL INTEREST GROUP NEWS

Calling Conservation Ecologists

Special Interest Groups (SIGs) are a vital part of the BES. They connect ecologists who share similar interests, run brilliant events that provide a forum for discussion of the hottest topics, facilitate mentoring at all career stages and give a focus to communities that are geographically widespread. They are also a lot of fun!

We have an exciting opportunity to get involved for those interested in conservation. We are looking for people who have the enthusiasm, ideas and time to push forward the Conservation Special Interest Group. We would especially welcome a new leadership that includes conservation professionals as well as researchers, so the group can more closely connect ecological research with applied conservation ecology; we are also keen to grow the international aspect of the group's activities.

If you are interested in these exciting challenges please get in touch.

Hazel Norman
Hazel@BritishEcologicalSociety.org

British Ecological Society
Plant Environmental Physiology Group

PLANT ENVIRONMENTAL PHYSIOLOGY GROUP

The Plant Environmental Physiology Group (PEPG) is one of the special interest groups (SIGs) within the British Ecological Society and the Society for Experimental Biology.

Plant environmental physiology represents the study of short-term acclimation and long-term adaptation of plants to changing environmental conditions. Our traditional goal has been to integrate leaf and plant- level responses to biotic and abiotic stress under field and laboratory conditions. Increasingly, our focus has been either to set molecular physiology in an ecological context, or to provide a basis for scaling root and shoot level responses to canopy, ecosystem and region in the context of climate change, whether for crops or natural vegetation.

Our remit is to:

- Advance and promote the science and practice of plant environmental physiology
- Integrate the plant environmental physiology community and research opportunities within and outside the BES and SEB
- Support, train and liaise with young plant environmental physiologists

The group holds its Annual General Meeting at the BES Annual Meeting – the PEP group is an informal group for physiologists of all ages and career stages, with as much emphasis on social interaction as on academic subjects. It is an excellent forum for meeting people working in similar fields, for socialising as well as general networking. Members interested in holding conferences, meetings, workshops or field meetings can apply through the Group Secretary for BES financial assistance and support for student attendance.

The main secretary is Dr Matt Davey (mpd39@cam.ac.uk) liaising primarily with the BES, and Dr Colin Osborne (c.p.osborne@sheffield.ac.uk) within the SEB, both assisted by Prof. Howard Griffiths (hg230@cam.ac.uk).

The PEP website and email discussion list is still popular (with nearly 300 members worldwide this ensures a response to your emails whatever time of day or night you send it!). Messages posted to the list are automatically forwarded to all members. Messages may include research questions/ methodology and information, discussion and requests, news of future meetings and PhD/job advertisements. To sign up follow the instructions at: http://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=env-physiol

http://plantenvironmentalphysiology.group.shef.ac.uk/

Join the Facebook page at:

The PEPG Facebook page has been a success, with over 200 followers from 14 countries

http://www.facebook.com/PlantEnvironmentalPhysiologyGroup

or follow us on Twitter: @pepg_sig

PEPG NEWS:

International Workshop on Plant Environmental Physiology techniques September 2014

This year saw the second of the new Plant Environmental Physiology SIG International Workshop on plant environmental physiology techniques. The aim of the workshop was to provide a unique opportunity for MSc, PhD students and early career post-docs to gain hands-on experience and training in environmental physiology techniques in both field and laboratory environments. The workshop took place at the Quinta de São Pedro study centre located 10 km south of Lisbon for one week starting the 8th September 2014.

As well as funding from the BES, the Society of Experimental Biology (SEB), 3to4 and NERC, we were fortunate to attract the sponsorship and involvement of manufacturers who are key players in providing the latest equipment and training for field and laboratory techniques for plant physiology research. The workshop attracted 62 delegates (ranging from MSc to Professorial level) from 16 countries. There was such a global demand to attend the workshop that we ended up with a reserve list of well over 50 people – so well done those of you who signed up early!

The week was split between a series of formal lectures, manufacturer training sessions and group practicals. The lectures covered a broad range of topics on the history, theory and limitations of gas exchange, porometry, eddy covariance, chlorophyll fluorescence, plant water flow, stable isotopes, conductance, growth measurements, thermography, modelling, soil moisture, metabolomics, hydraulic conductance and remote sensing.

The presence of manufacturers, who brought a fantastic range of equipment, provided a unique opportunity for the delegates (and organisers!) to learn how to use the latest field and laboratory kit. The delegates learnt first-hand how to use infrared gas exchange systems, porometry, soil parameters, chlorophyll fluorescence (including imaging techniques), eddy covariance, leaf area index and thermal imaging. This provided participants with a unique opportunity to gain hands-on experience with the equipment and conduct real measurements in a field situation – the rather wet weather (over a month's rainfall in 4 hours…) put a rather unexpected real field situation in the practical programme! Halfway through the workshop we were treated with an afternoon "off" where most of us took a coach to Lisbon city centre – thankfully the torrential rain also had an afternoon off...

Delegates had the opportunity to promote their research by giving 1 minute 'flash talks' and an impromptu disposable white board poster session. The week ended with speakers and industrial manufacturers presenting their results from the specific projects that were being run thoughout the whole week. We hope to repeat this workshop in 2016, so please keep an eye open on our PEPG website at: http://plantenvironmentalphysiology.group.shef.ac.uk/ (where you can also sign up to our email mailing list) and our Facebook page at: http://www.facebook.com/PlantEnvironmentalPhysiologyGroup

Many thanks to the manufacturers; ADC Bioscientific Ltd, Decagon Devices, Delta-T devices, Dynamax, Li-Cor, Ocean Optics, Opti-Sciences, Walz to the sponsors: NERC, Journal of Experimental Botany and 3to4 and to the speakers; Prof. Susanne Von Caemmerer (ANU, Australia), Prof. Steve Long (University of Illinois, USA), Dr Steven Driever (University of Essex), Dr Tracy Lawson (University of Essex); Prof. Maurizio Mencuccini (University of Edinburgh, UK), Dr Justin Mcgrath (University of Illinois, USA), Prof. Bernard Genty (CNRS/CEA Cadarache, France), Dr Colin Osborne (University of Sheffield, UK), Prof Lawren Sack (University of California, LA, USA), Dr Richard Whalley (Rothamsted Research, UK), Dr Colin Campbell and Dr. Steven Garrity (Decagon), Dr Gary Lanigan (Teagasc, Ireland), Dr Matt Davey (University of Cambridge, UK), Dr Katie Field (University of Sheffield, UK), Dr Sairose Tracy (University of Nottingham, UK), Dr Lisa Patrick Bentley (Oxford, UK), Dr. Wanne Kromdijk (University of Illinois, USA), Prof Christine Raines (University of Essex, UK), Dr. Craig Yendrek (University of Illinois, USA) and Dr Andrew Leakey (University of Illinois, USA).

Finally a very special thanks to the drivers Jack Matthews and Silvere Vialet-Chabrand who had a very sober week, to Stephen Driver, Colin Osborne and Richard Webster for organising the practical sessions, to Marj Lundgren for making gallons of coffee, to Armin (site manager) and Benjamin (site owner) and Tracy Lawson who did a very fine job in organising the whole event!

Matt Davey

RECENT EVENTS:

Events to look out for in 2015…

4th Annual PEPG Mini Symposium – Spring 2015 – after the success of the Peak District walk and talk symposium we are planning another early career mini symposium using the same format – we are thinking about either somewhere in Wales or the Lake District

NEW COMMUNICATIONS OFFICER!

We are pleased to announce and welcome the appointment of our new communications officer – Dr Jennifer Cunniff. Jen is a plant physiologist at Rothamsted Research, UK. Currently she is working on optimising biomass yield of short rotation coppice (SRC) willow for sustainable biofuel production. Her main role is collecting phenotype data from a wide range of willow trials and

mapping families, to help locate QTLs (and hopefully genes) for traits that will improve yield. http://www.rothamsted.ac.uk/people/cunniffj

Jen will be the key contact for all your PEPG announcements on our media outlets:

Email: https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=env-physiol

Twitter: https://twitter.com/PEPG_SIG

Facebook: https://www.facebook.com/PlantEnvironmentalPhysiologyGroup

Webpage: http://plantenvironmentalphysiology.group.shef.ac.uk/

Dr Jen Cunniff – new PEPG communications officer jennifer.cunniff@rothamsted.ac.uk

Matt Davey – mpd39@cam.ac.uk

Colin Osborne – c.p.osborne@sheffield.ac.uk

Howard Griffiths – hg230@cam.ac.uk

Lucy Rowland – Postdoc rep lucy.rowland@ed.ac.uk.

Zoe Harris – Postgraduate rep Z.M.Harris@soton.ac.uk

Marjorie Lundgren – marjorie.lundgren@sheffield.ac.uk

Richard Webster – rcw@aber.ac.uk

Jen Cuniff – communications officer – please contact Jen with news and events you would like advertising on our website, email list, Facebook page and twitter @pepg_sig jennifer.cunniff@rothamsted.ac.uk

British Ecological Society
Forest Ecology Group

FOREST ECOLOGY

Dan Bebber

The FEG has grown, with 500 subscribers to the email list, 270 Facebook members, and more followers on Twitter @BESForests. Many thanks to Philip Martin and Thom Starnes for helping with the Twitter feed. We also have a new blog (besfeg.wordpress.org) which has replaced the old *Bulletin*, and is the place for all our news so sign up for alerts. Contributions for job postings, news, views, meetings, and of course Forest of the Month are always welcome.

The FEG helped to support a number of events this year. Martha Crockatt (Earthwatch) and Lynne Boddy (Cardiff University) ran a workshop on Fungi for Forest Ecologists at Wytham Wood, to encourage ecologists to think more about this often-overlooked component of woodland diversity. In the summer, Ted Wilson of the Continuous Cover Forestry Group held a meeting in Keswick, Cumbria on the best ways of managing sustainable, resilient woodlands in Britain. The meeting was truly cosmopolitan, with support from the Forestry Commission, Edinburgh University, Cumbria University, the Woodland Trust and Natural England, among many others. We end the season with a workshop on Waxcaps as Ecological Indicators, being held at Sheffield Hallam University at the end of October, and a Royal Society meeting on Threats to Tropical Forests that will feature many of the world's leading forest ecologists.

We have had several applications for funding of meetings and events for next year, and our blog site now has a form where you can apply for support for your own forest ecology activities. FEG will be holding a Poster Competition at the Annual Meeting in December this year...if you want to take part, keep your eyes on our blog for details of how to enter. See you all in Lille!

PEATLANDS RESEARCH

Ian D. Rotherham

In the Bog

September 2014, Sheffield Showroom & Workstation, Sheffield, UK

Summary of Conference Presentations & Discussions

The excellent, high quality presentations at the recent *In the Bog* conference held in Sheffield covered a range of disciplines, and gave a global perspective to the ecology, landscape, archaeology and heritage of peatlands. The broad range of topics encouraged discussion and challenged thinking for both delegates and speakers alike. The inter-disciplinary nature of the conference brought together historians, ecologists, archaeologists, land-managers, peatland-restoration specialists and climate-change scientists. Many of whom agreed that they seldom talk to each other and know little of each others' work – and the conference acted as an 'eye-opener'. Through this meeting and the exchange of views and ideas there are already several potential new areas of support and collaborative projects being discussed. One of which is to hold an annual informal low-cost 'Peatlands' network meeting to exchange updates, ideas and research and to help coordinate activities and future directions.

The conference was a mix of plenary and parallel sessions with an included field visit and a poster presentation session. The plenary and keynote speakers reflected a breadth of disciplines and the global reach. After Professor Ian Rotherham opened the conference with his context and scene-setting presentation, Clifton Bain outlined the IUCN UK's Peatland Programme: a 1-million hectare challenge of 1m ha of UK peatland in favourable conservation management by 2020. Dr Richard Tipping closed the first session with his paper on the archaeological investigation of late Neolithic and early Bronze Age farming communities and their peat working in the North of Scotland.

Professor Jack Rieley (International Peat Society) described the importance of tropical peatlands for carbon storage. Using Indonesia as a case study provided a graphic demonstration of the threat to peatlands from the economic and social pressures for timber and land for

agriculture and palm oil plantations. Over the past two decades the region's peatlands have undergone rapid deforestation, widespread drainage and frequent and intensive fires. The resulting degradation leads to release of carbon and a reduction in carbon storage contributing to the global environmental change process. Others took up this theme. Dr Ian Thomas talked about the peatlands of Tasmania, the fire-sensitive and fire-adapted vegetation and the fire-management practices of the Aboriginal people. Curtailment of traditional practices, changes in general habitat management and the increased incidence and intensity of wildfires (partly due to increase in storms and lightning strikes) is now threatening the existence of these unique eco-systems. Dr Andreas Heinemeyer presented modelling results from the MILLENNIA project and discussed not only climate change issues but also management pressures on UK uplands and work on water-storage capacities, which influence a range of ecosystem services. He concluded by highlighting implications and potential for future work to better understand the interactions between carbon dynamics and hydrology in a changing environment. Dr John Coll presented the findings of a collaborative project looking at the loss of climate space for active blanket bog in Ireland. He showed through a sequence of maps how areas of blanket bog may be lost or form across Ireland as climatic conditions change irrespective of other anthropogenic factors. Professor Jaanus Paal described the diversity of mires and mire forests in Estonia and their characteristic vegetation communities that make up an extensive part of the country. They too are facing threats from intensification of agriculture and forestry, drainage, and changes in water chemistry and greenhouse gas emissions.

Dr Benjamin Gearey talked about the implications of climatic and anthropogenic pressures on peatlands for the archaeological and paleo-environmental record using Ireland as a case study. He identified both opportunities and challenges for conservation and management of peatlands and their archaeological resource and how these are heavily influenced by Governmental economic and policy decisions that do not fully take into account the fragile nature of the resource. Professor Richard Oram presented an historical case study of the exploitation of peatland for fuel in medieval Southern Scotland using records from several monastic houses. He explained how the monasteries used peat as the principal fuel for their primary industry of salt extraction as well as for their own domestic use. This exploitation was on an unsustainable scale when added to the pressure from other communities and led to the depletion of many of the mosses as early as the fourteenth century. The impact of that loss is still apparent in the landscape today; the mosses, which now exist, are fragments of formerly extensive areas. Professor David Hey continued this theme by describing the impact of trade routes across the moorland areas of the Peak District and their legacy in today's landscape. He also talked about the transport of commodities harvested, quarried and mined within the Peak District and the tracks and route-ways that were built to accommodate these. Many, now degraded, still exist and are part of the archaeological and ecological record of these peatlands.

There was a similar breadth of presentations in the six parallel sessions. Contributions covered social aspects of peatland exploitation, the conservation of the peatlands of Turkey and agricultural management of the Falkland Island peatlands and the Blackland of the Hebrides. One session focussed on peatland restoration and management, and another on the detailed monitoring of vegetation and hydrological changes. The poster presentation session included over 20 different projects. Several of these were from PhD students covering topics such as the environmental history of Whittlesea Mere, an assessment of alternatives to burning heather for blanket bog management, and the implications of rising DOC trends for the water chemistry of treatment of potable waters. Other posters were presented by representatives from County Wildlife Trusts, the Thorne & Hatfield Moors Conservation Forum and HLF funded Living Landscapes projects. There were also displays from technical specialists involved in peatland restoration.

The included field visit looked at three local sites within the eastern fringe of the Peak District. The sites were chosen to reflect some of the themes from Ian Rotherham's opening presentation to set a context for the discussions through the rest of the conference.

A fuller account of the meeting will be published later, together with a book of the conference proceedings and individual papers in various publications. Photographs from the conference, taken by Chris Percy and Christine Handley, can be found at www.flickr.com/groups/syeconet . The conference was sponsored and supported by the British Ecological Society, Sheffield Hallam University, the International Peat Society, IUCN UK's Peatland Programme, JBA Consulting, Thorne & Hatfield Moors Conservation Forum, IUFRO and the Landscape Conservation Forum.

The conference organisers intended the September 2014 conference to be worthwhile in itself but also help set the scene for our international conference in September 2015 on the theme of 're- wilding' landscapes and landscape changes. From the conference feedback, these expectations were more than achieved and some of this year's contributors have already asked to be part of next year's event. The historic management of these peatland landscapes and the attempts to restore them will be one of the major themes for next year's conference.

WILDER BY DESIGN PART 2: SEPTEMBER 2015

The paradigms of wilder landscapes and the interactions between nature and culture, between history and ecology, and between climate, people and nature, will make for a continuing and rich discussion. This will continue at the major international conference to be held in Sheffield in September 2015. The events continue a long tradition of major meetings here relating to key issues of landscape and forest management. (Publications from these events and other outputs can be found on our website www.ukeconet.org). Following the 2015 conference there will be a full conference proceedings volume produced and published by Wildtrack Publishing, plus a book of selected and invited papers with Routledge.

The 2015 conference, 9-11 September, will expand on the discussions from the 2014 events and look critically at projects, issues and themes from across the world. Speakers will examine concepts of cultural severance and the nature of eco-cultural landscapes as well as addressing critical practical issues around (re) wilding.

Speakers already confirmed include Adrian Newton, Peter Bridgewater, Ted Green, Keith Alexander, Jill Butler, Della Hooke, Anna Jorgensen, Rob Lambert, George Peterken, Chris Spray, Ian Rotherham, Sue Everett, Frans Vera and Tom Williamson. Chris and Anne-Marie Smout will be attending as guests of honour.

Periodically there will be more information about the 2015 conference posted on our website www.ukeconet.org. If you want to be added to our mailing list or want to offer a paper / poster or other support for the 2015 conference, then please email us at info@hallamec.plus.com. Closing date for the initial call for papers was 30th September 2014 but there may still be spaces, especially for poster presentations so if you are interested, please contact us.

A LIFE IN ECOLOGY – A CELEBRATION OF THE WORK AND INSPIRATION OF DR OLIVER GILBERT PIONEER ECOLOGIST: NOVEMBER 2015

Ten years on from Dr Oliver Gilbert's premature death, this 2-day conference is being organised by Professor Ian Rotherham and Dr Paul Ardron, both long-term friends and associates of Ollie. It encompasses his many interests and is a celebration of his contributions to the ecology of peatlands and peat bogs, urban ecology, lichenology, exotic plants, and urban and post-industrial landscapes over a period of 50 years. Invited speakers will deliver papers relating to topics, which reflect some of Oliver's passions including 'alien' species, lichens, urban woodlands, and the flora associated with post-industrial sites. It will also reflect some of the themes which will be discussed at the September 2015 conference particularly the impacts of exotic plants and the natural colonisation of post-industrial landscapes. Speakers so far confirmed include Penny Anderson, Dr Rob Francis, Professor Melvyn Jones, Dr John Barnatt and Dr Peter Shaw. If you want to be added to our mailing list for this conference or want to find out more please email us at info@hallamec.plus.com ; more information will be added periodically to the events page on our website www.ukeconet.org .

The Peatland SIG will also be organising a programme of workshops and meetings with members and partners in 2015. Please see our webpage on the BES website, subscribe to our newsletter or follow us on twitter to find out more.

British Ecological Society
Tropical Ecology Group

TROPICAL ECOLOGY

Lindsay Banin

The TEG committee are happy to welcome the new Student Representative, Jess Baker (PhD student at the University of Leeds). Members are able to contact Jess via the usual e-mail (tropical@britishecologicalsociety.org) with student-related news and events, as well as ideas and activities you would like to see happen for early-career TEG members.

The 7th TEG early-career researcher meeting was hosted in August this year by the University of York, led by Rob Marchant, Suzanne Nvenakeng and the KITE research group. We welcomed 48 delegates, coming from all corners of the UK, and as far afield as the Brazil, Nigeria, Cameroon, The Netherlands, Denmark, Spain and Kenya. The sessions were opened on the first day with two fantastic keynotes by Henry Hooghiemstra and Jon Lovett. Presentations throughout the day took us from mangroves in Tanzania to the cloud forests of North Peru, from highland lakes of Ethiopia to earthworks in Bolivia, and from deep history to contemporary ecology. Discussions continued into the evening over a lovely Italian meal. The second day was similarly jam-packed with a diversity of great talks on riparian habitats, peat bogs, gas exchange dynamics and key community, policy and land-use interactions. We also enjoyed two further keynotes from Jane Hill and Marion Pfeifer on fragmentation and edge effects in tropical forests. The feedback from delegates was highly positive, reporting that they had enjoyed the variety of topics covered and the opportunity to learn about new areas of tropical ecology and discuss methods and approaches. They also valued the opportunity to meet and interact with new researchers and present and discuss in a friendly environment. We thank and congratulate the organisers for running such a successful event. We are currently thinking forwards to the 8th meeting, which we hope will be held in September 2015 at the University of Stirling – watch this space!

At the time of writing, TEG is preparing to attend the South East Asia Rainforest Research Program (SEARRP) event at the Royal Society, which has been jointly supported by the TEG and FEG special interest groups. The subject of the meeting is "Threats to tropical rainforests in an era of rapid environmental change – a global synthesis" and through a series of talks by leading scientists from across the globe, will deliver a comprehensive review of rainforest science, integrating biodiversity, ecosystem functioning, carbon cycling and atmospheric chemistry, and examining commonalities and differences across tropical biomes. The meeting will also examine threats faced by rainforests, their responses to environmental change and how the science base can more effectively contribute to the conservation, sustainable management and restoration of tropical rainforests. All 150 free tickets for the event have already been allocated, and we look forward to the lively discussions that are likely to ensue amongst the delegates.

The TEG committee are also currently planning activities for the Annual Meeting in Lille. There will be a special TEG session, co-organised by Stephen Cavers (CEH), David Burslem (University of Aberdeen) and the TEG team, on "Generation and maintenance of genetic diversity in tropical forests", and a second tropical ecology session, particularly focused on carbon cycling in the tropics. We hope to see many of you there!

As ever, keep in touch with TEG news via the twitter (@BES_Tropical) and facebook pages and sign up for our newsletter via tropical@britishecologicalsociety.org.

British Ecological Society
Plants, Soils, Ecosystems

PLANTS, SOILS, ECOSYSTEMS

Plants, Soils, Ecosystems is a special interest group on plant-soil interactions, with a focus on biogeochemical cycling, community dynamics, and ecosystem functioning.

Aims

- To promote research on plant-soil interactions and their role in ecosystems through workshops, symposia, and events at BES meetings
- To provide opportunities for networking and collaboration among researchers involved in the study of plant-soil interactions and ecosystem ecology
- To serve as a platform to discuss and share techniques, expertise, and data
- To promote research across scientific disciplines to students, facilitate training opportunities in different techniques, and provide support for early-career researchers

Committee

The organizing committee currently consists of Franciska De Vries, The University of Manchester (Secretary: franciska.devries@manchester.ac.uk); Ellen Fry, The University of Manchester; Mike Whitfield, Trinity College Dublin; and Sarah Pierce, Imperial College, as student representative. Franciska is on maternity leave for the next few months, so if you have any questions in the meantime, contact Mike Whitfield (michael.whitfield@tcd.ie) or Sarah Pierce (s.pierce11@imperial.ac.uk).

Plants, Soils, Ecosystems online journal club (#psejclub)

The Plants, Soils, Ecosystems journal club is seven months old! The idea behind the journal club is to highlight interesting papers in the field of plants, soils and ecosystems (potentially a very broad topic!) and stimulate discussion about the papers. The discussion does not have to focus on the scientific content of the paper – it could also look at the ways in which papers have been written, or data presentation techniques, for example. So far we've looked at papers on mycorrhiza-mediated competition, grassland eutrophication, plant-soil interactions and range shifts, ecosystem multifunctionality, endemism in soil fungi, and much more besides.

The journal club has attracted over 3,800 hits from 75 countries since it started in February. If you want to join the discussion, you can always comment on the posts or get in touch on Facebook or Twitter using hashtag #psejclub. We'd also welcome suggestions for papers to discuss, and have just published our first guest post, by regular commenter Relena Ribbons! If you'd like to see more frequent posts, why not write a guest post for us on paper you find interesting? It's great practice on critically reviewing a piece of literature and writing about research, as well as a good way to raise your profile.

Plants, Soils, Ecosystems Bulletin

Plants, Soils, Ecosystems not only sends interesting emails about job opportunities, studentships and meetings regularly to those signed up for our email list. We also compile a two-monthly *Bulletin*, which includes everything of interest to ecologists interested in plant-soil interactions, and is compiled by committee member Sarah Pierce. If you want to stay up to date with everything that is happening in Plants-Soils-Ecosystems world, sign up for the mailing list, and you'll receive the *Bulletin*, as well as other announcements. But more importantly, the success of PSE depends on you, so keep sending us your jobs, studentships, and interesting facts. You can find all past bulletins, as well as instructions on how to sign up for the mailing list, on our website: https://besplantsoileco.wordpress.com.

2014 ACTIVITIES

Two-day PSE-PEPG meeting 'Carbon cycling: from plants to ecosystems', The University of Manchester, UK, 16-17 October 2014 #psepepg

By the time you're reading this, our joint meeting with the Plant Environmental Physiology Special Interest Group will already have taken place – you can expect a detailed report in the next *Bulletin*, and of course in our very own Plants, Soils, Ecosystems bulletin! Social media coverage can be found using the hashtag #psepepg. We expect this meeting to be as big a success as last year's 'Digging Deeper' meeting!

GSBI Conference in Dijon, France, 2-5 December 2014.

The first GSBI Conference – Assessing Soil Biodiversity and its Role for Ecosystem Services, is organised by the GSBI (Global Soil Biodiversity Initiative) and Ecofinders and held in Dijon, France, December 2-5th, 2014. This will be a dynamic international meeting summarizing the current state of knowledge and recent advancements in the science of soil biodiversity.

The conference will provide a venue to meet and discuss current research efforts in soil biodiversity and its links to earth processes, and to promote interdisciplinary collaboration. The goal of this meeting is promote scientific research on the role of soil biodiversity for ecosystem functions and ecosystem services, and to integrate such understanding into international environmental agendas, sustainable policy and land management decisions.

Plants, Soils, Ecosystems will organise an evening session on Tuesday the 2nd of December, followed by a drinks reception. We are currently in the process of finalising the programme, so keep an eye out for more information on Twitter, Facebook, and our mailing list (see below for details how to join).

Joint BES-SFÉ Annual Meeting in Lille, France, 9-12 December 2014.

We are organising a special session on Wednesday the 10th of December at the Annual Meeting, entitled 'Welcome to the dark side – Opportunities, challenges, and solutions for synthesizing global soil biodiversity'.

The description and biogeography of belowground biodiversity is severely lagging behind that of aboveground diversity. This is despite increasing recognition of the importance of soil organisms for ecosystem functioning, including carbon and nitrogen cycling, and feedbacks to plant community composition, which underlie ecosystem services such as food production and climate mitigation. Moreover, recent evidence suggests that patterns of belowground biodiversity might not

follow those of aboveground biodiversity. Thus, belowground biodiversity offers a unique opportunity to test and develop ecological theory. In this session, we will highlight the current status of soil biodiversity knowledge, initiatives that are being developed to increase this knowledge, and opportunities that arise with greater knowledge of soil biodiversity, both theoretical and practical. In addition, we will discuss the tools and steps needed for this, and make a plan for a workshop to be held in 2015.

Speakers for this session include Diana Wall (keynote – Colorado State University and the GSBI, USA), Kelly Ramirez (keynote – Netherlands Institute for Ecology, the Netherlands), Ingrid Lubbers (Wageningen University, the Netherlands), Rob Griffiths (Centre for Ecology and Hydrology, UK), and David Russell (Senckenberg Museum of Natural History Görlitz, Germany).

Afterwards, we will organize a social event, so come to the session and join the discussion!

2015 ACTIVITIES

We are currently making plans for 2015! By the time this *Bulletin* is out we'll have a better idea of the activities that we'll be organising, but you can of course expect an annual meeting, and at least one workshop focused on a specific topic or skill, potentially a field trip, and some updates on our website!

Join the committee!

We are looking for new committee members to run our special interest group! As a committee member, you get to organise and decide on our activities, are in close contact with the BES, represent the BES at meetings and activities, learn a lot about organising meetings and the inner workings of the BES, and, last but not least, you raise your profile and boost your CV!

Apart from regular committee members, we are also looking for a new student representatve, as Sarah Pierce will finish her PhD soon (good luck, Sarah)!

If you think this sounds great, or if you have any questions, get in touch with Franciska (franciska.devries@manchester.ac.uk) or Sarah (for student rep questions; s.pierce11@imperial.ac.uk)

Get involved!

We are looking for regular contributors to our online journal club (see section above), and for enthusiastic people with ideas for organising meetings, training events, field trips, or anything else interesting within the field of plant-soil interactions and soil ecology. Email us at besplantsoileco@gmail.com if you are interested and have ideas about how to make the special interest group work for you!

Join us!

Sign up for our email list by sending an email to listserv@jiscmail.ac.uk; Subject: BLANK Message: SUBSCRIBE PLANT-SOIL-ECO Firstname Lastname. Follow us on Twitter @BESPlantSoilEco, or like us on Facebook: https://www.facebook.com/BESPlantsSoilsEcosystems.

AGRICULTURAL ECOLOGY

Barbara Smith

The Agricultural Ecology Group in Lille

The Agricultural Ecology Group is running three events at the Annual Meeting in Lille, two of them with our French colleagues. A special interest group session on long-term monitoring in agro-ecological systems has been convened. Six speakers (three from the UK and three from France) will discuss what long-term monitoring has contributed to our understanding of ecological change.

Secondly, a joint workshop will be organized with the Conservation Ecology Special Interest group on *Planning for change in the real world.* The aim of the workshop is to use case-studies to develop thinking about how to plan a project to bring about tangible change or to translate existing project output into practice on the ground.

The third event is a social event, again in collaboration with our French colleagues, The purpose of this social is to allow scientists working in Agricultural Ecology to share their research and develop collaborations. The organizers will use a game-based format to enable people to meet and discuss their research interests while tasting a selection of French and UK wines. After the event we plan to move on to a tapas bar to continue the … ahem … discussions.

Please do come along to the Agricultural Ecology events at Lille!

Lydia Smith (right) shows AeG members around NIAB's Innovation Farm at a meeting she organised on 'Growing sustainable ecosystem services around farming' held at NIAB in July. See the Agricultural Ecology Group website for more information on the day.

MEETING REPORT

Considering the Future of Conservation

25 – 27 June 2014, University of Kent Canterbury

Zoe Davies, Bob Smith and Freya St John
Durrell Institute for Conservation and Ecology, University of Kent

In the August issue a report on the recent conservation symposium focused entirely on the enthusiasm generated by a hugely successful gathering. Here the three organisers offer a more considered view on the lessons and messages emerging from the meeting.

The discipline of conservation has evolved rapidly in recent decades. While the 2010 target to halt biodiversity loss globally was not met, and we bemoan the fact that protected areas are failing to represent or conserve many important species and habitats, much progress has been made and should be celebrated. Nonetheless, our accomplishments remain vulnerable as the threats to biodiversity persist and grow. So, when planning the symposium, we thought it would be fitting to consider the lessons that have been learnt across the discipline and look towards the future. Our emphasis was very much on exploring potential solutions to stem biodiversity declines, rather than merely identifying and/or quantifying the issues.

In recent years, one of the most critical realisations has been that conservation is an interdisciplinary endeavour which demands an understanding of both ecological and human systems. Similarly, there is a growing awareness that evidence should underpin the development and implementation of conservation interventions, thereby increasing the likelihood of success and ensuring that limited resources are invested effectively. With this in mind, we designed a symposium that would bring together and inspire both natural and social scientists from academic, government and NGO sectors, who are interested in high quality research that informs conservation policy and practice.

The three days comprised a mix of plenary speakers, themed talk sessions, workshops and posters, with plenty of time for networking. Not all of the time was set aside for highbrow discussion however, with the social highlight being a barn dance. Here we made the important discovery that, contrary to popular belief, most landscape ecologists and conservation planners have very limited spatial awareness!

Plenary speakers

Peter Kareiva opened the Symposium brilliantly, issuing a clarion call to the conservation community to make sure our core messages appeal to the public. He also stressed the need to engage with the corporate sector, although his point was nuanced and balanced, including praise for the role green activists have played in scrutinising conservation-business partnerships and reducing scope for "green-washing". Luigi Boitani provided an insightful and enjoyable overview of large carnivore conservation in Europe, showing that these wide-ranging species will always rely on the wider matrix for their survival and that current positive population trends are more linked to changing human land-use patterns than conservation interventions. Andrew Balmford's talk critically examined the controversial land-sharing/land-sparing debate. He highlighted that species with limited global-range tend to be impacted by all types of agriculture, almost irrespective of its intensity, and argued that low-intensity farming that benefits biodiversity in places with a long history of agriculture should be viewed as another form of conservation management. Dan Brockington's was one of the best illustrations of the disciplinary breadth of the Symposium, as he gave a highly entertaining talk examining celebrity culture in conservation. He showed the value of research on this intriguing topic, providing evidence that conservationists are making a mistake when they rely on the famous to promote their causes. Finally, Camille Parmesan rounded off the plenary sessions with a tour-de-force of her state-of-art knowledge of climate change and conservation. We thoroughly recommend that you attend her plenary at BES Annual Meeting in Lille – it is certainly not to be missed!

The role of protected areas in conservation

In November 2014, the decadal World Parks Congress is being held in Sydney, Australia, which has reignited interest in the role of protected areas in conserving biodiversity. New data indicate that nearly 14.6% and 2.8% of the terrestrial and marine realms respectively are protected. Nonetheless, there are still major concerns regarding whether this portfolio is effective. Matthew Linkie (one of our DICE alumni – we are very proud of him!) opened this themed session with an informative talk on the trials and triumphs of managing protected areas in Sumatra, Indonesia. In particular, he showed how Fauna and Flora International have used the SMART system to adaptively manage ranger patrols to maximise their impact on the ground. Eddie Game drew the audience's attention to the complexity of the ecological systems that protected areas aim to conserve, challenging us to question what constitutes evidence that a conservation project is working. Moving to a temperate climate, Rob Stoneman presented the Yorkshire Wildlife Trust's visions for a living landscape, as well as

providing convincing evidence of the cost-effective nature of peatland restoration as a climate change mitigation mechanism.

Human behaviour and conservation

Conservation interventions frequently aim to influence human behaviour, for example, through encouraging uptake of agri-environment schemes, limiting resource extraction, or reducing illegal hunting. Using the case study of saiga antelope (*Saiga tatarica*), E.J. Milner-Gulland addressed the complexities surrounding local community engagement in order to minimise poaching of this critically endangered species. Using the theory of planned behaviour, E.J. illustrated how social science conceptual frameworks can usefully guide the focus of interventions aiming to modify people's actions. In his talk, Chris Sandbrook drew attention to the potential ethical minefield and public relations disasters that could be associated with the new technologies being employed to bring about behaviour change. A particularly timely example that seemed to resonate with members of the audience was the use of drones for enforcement. Robert Barrington covered another ethical issue, corruption, which is woefully overlooked within conservation. Most of us work in countries that score poorly on global corruption indices, but know little about how it may affect conservation outcomes, so his expert perspectives on this important topic were particularly welcome and insightful.

Threats to biodiversity

Threats to biodiversity are diverse and varied, as was reflected in the breadth of this session. As the probability of being affected by an extreme climate event increases, James Watson emphasised the need to explicitly integrate people into conservation planning to ensure that inventions reduce the vulnerability of both human and species communities. He also made the point that much of the conservation and climate change literature focuses on the next 50 to 100 years, yet practitioners need predictions for the coming two decades to help guide their work. Stephen Redpath talked about conservation conflicts and the need to appreciate they occur between different groups of people. As such, transdisciplinary approaches are needed to develop successful solutions. He also called on conservationists to recognise they can be antagonists in conflict situations and that we should not assume we are simply acting as spokespeople for wildlife. Trent Garner's talk stressed the need to tackle emerging infectious diseases, as the evidence he presented from amphibian case studies clearly demonstrated how rapidly population sizes can be reduced, leaving species vulnerable to other threats. He argued convincingly that conservationists should focus on managing environmental conditions to make them less suitable for pathogens.

DICE PHD STUDENT PERSPECTIVE

The Symposium in June was a big success, and we were proud to represent the DICE postgraduates. The event consisted of three days of world-class speakers covering an array of topics which would have resonated with anyone with an interest in conservation. Despite the obvious bias, there is a general feeling that this was the most stimulating conference any of us have ever been to. The topics of the talks were so consistently interesting that you never wanted to miss any sessions, and it felt like we made some real progress in understanding potential solutions to some of the biggest issues in conservation. There was a brilliant mixing of academic hierarchies in the breaks, in an environment where people felt welcome to share an opinion or ask questions. Many of us presented posters, and we were thrilled with the friendly atmosphere and the interest everybody showed in our work, with some of us coming away with ideas of new directions to take or collaboration opportunities. For many of us, the conference reaffirmed our place in conservation and inspired us as early career academics.

Conservation in the wider landscape

Given that protected areas cannot conserve biodiversity in the absence of other interventions, it is widely recognised that conservationists need to ameliorate conditions within the wider landscape. Using a series of illustrative case studies, Juliet Vickery provided us with a practitioner's insight into how this can be realised. In particular, it was uplifting to hear how the RSPB have helped to reduce declines of the white-back vulture (*Gyps bengalensis*) through incidental poisoning and wandering albatross (*Diomedea exulans*) caused by bycatch. Both these projects were underpinned by science, supported by policy/legislative infrastructure, and had public and political support. Pete Brotherton provided a whistle stop tour of the historical context of biodiversity conservation in England, identifying policy and delivery approaches that have been/are used to better manage our natural capital, such as agri-environment schemes to support the creation of coherent, resilient ecological landscape-scale networks of habitat. Offering an altogether different perspective on conservation in the wider landscape, Bhaskar Vira bought the audience's attention to the social and political landscape within which conservation operates. He challenged listeners to think about the costs and benefits associated with conservation actions, many of which are unequally distributed among actors.

A big thank you!

The three of us had a fantastic time organising and running the Symposium and we highly recommend the experience to anyone. Just make sure that you have Amelia, Amy and Richard (the BES events team) to ably assist you! We are also fortunate enough to have great PhD students at DICE, as they all chipped in and volunteered their time to help make sure that the meeting ran smoothly. The Symposium was only made possible through financial support from the School of Anthropology and Conservation, University of Kent, BES and RSPB Centre for Conservation, for which we are very grateful.

THE RSPB CENTRE FOR CONSERVATION POSTER SESSION

We are extremely grateful to the RSPB Centre for Conservation, who kindly sponsored the Symposium poster session. The evening was a great success and past by in a blur of engaging conversation and debate, as well as overindulgence in Kentish ales, apple juice, and scrumptious locally sourced food. The quality of the posters was very high indeed, both in terms of content and appearance, so we have to thank the 50 presenters for doing an amazing job and making the event so interesting and thought-provoking.

MEETING REPORT

A DIFFERENT KIND OF SYMPOSIUM: Eco squared

Drew Purves / Microsoft Research, and Treasurer of the British Ecological Society
dpurves@microsoft.com

Is there common ground between Ecology and Economics that can be exploited to the advantage of both disciplines? Drew Purves and his co-organisers put together an exciting and edgy meeting format to explore whether the theory and ideas of either discipline have any prospect of being applied to the other. Drew reports on the outcome:

Eco^2 squared (aka Eco**2 and pronounced Eco2) was intended to be a different kind of symposium both in exploring the interaction among two sciences that rarely interact (at least at the fundamental level that was the focus of this meeting); and in adopting some alternative meeting formats to foster that interaction. I and the other organizers are grateful to the BES for supporting what they viewed, quite reasonably, as a somewhat high risk event on both counts!

So out went back-to-back 15 minute talks. In came plenaries in pairs (followed by a long discussion moderated by a third expert), panel sessions, and plenty of group discussions. For example, I would commend our 'problem solving' format to anyone planning a meeting. Four people introduce four topics via short talks, then everyone splits into four groups for a half hour of discussion around the topic of their choice, then someone in each group (not the original speaker) reports back to the whole room. This way, each speaker presents their idea, but also gets a personalized discussion with a group of people of all career stages, AND everyone hears a summary of every discussion – in the same time per person (15 minutes) that you get at a 'normal' conference session of 15 minute talks!

Three days of this, as challenging as it was, allowed us to identify and explore some exciting ideas and topics that many of us will be thinking about from now on. What was clear was that ecology can contribute to economics, and vice versa, and that we need to combine both subjects at a fundamental level to solve some of the world's most pressing problems. But we've barely begun on any of these three directions.

*Discussion groups were a central feature of Eco**2 organisation*

One area where the fundamental overlap has been explored relatively well is in studying 'systemic risk' in the banking system. The key idea – which would come naturally to ecologists but which was novel to economists until recently – was that a complex network of banks, individually at apparently low risk of collapse, could itself be at high risk due to all the secondary and tertiary links in the system. Think trophic cascade. Or 2008. This idea was expounded by Bob May, who wrote a seminal paper on the idea with George Sugihara (also at Eco^2). At the centre of their paper was a new model of a 'node' in the system, basically a bank reduced to about four numbers, and yet out popped a host of new recommendations that the Bank of England is actually taking seriously. Bob's talk was a marvellous example of how a clear-thinking outsider can make an important, and with hindsight, relatively easily understood contribution to a subject. Our co-hosts JP Zigrand and Katja Neugebauer had managed to corral an amazing set of economists who have embraced and expanded on ideas of system risk, and I think it's fair to say that the ecologists were amazed at how deeply they have thought about ecological ideas. So perhaps one day names like Lux, Hens and Kirman will be as familiar to as MacArthur, or indeed May, are today. Not least because lectures like Michel Loreau's 'most important models in ecology' gave them a better understanding of the many ecological ideas still have left to steal!

*The writing is on the wall, even at innovative meetings like Eco**2*

Many topics in addition to systemic risk emerged as important: tipping points, participatory modelling, Malthus, generalism vs specialism, movement and migration, ethics, uncertainty, inequality, socioeconomic modelling and trophic structures, to name but a few. To give you a flavour, take a major cross-cutting topic that emerged in almost every session: equilibrium. It might seem strange that

economics has been wedded both to equilibrium, and to continual economic growth. Then again, ecology has been wedded to both equilibrium, and to the idea that all species, and therefore ecosystems, have developed over evolutionary timescales. Actually, in both subjects the concept does not always have quite the 'fixed point' that the word 'equilibrium' conjures in our heads. In economics, Partha Dasgupta explained that at a deeper level it refers not just to stable combinations of supply, demand and prices (so-called general equilibrium), but also to sets of beliefs and behaviour that are self-consistent, i.e., situations where people behave in a way that is consistent with their own beliefs about the likely behaviour of others. Mike Begon pointed out that this behavioural concept of equilibrium, which at first seems difficult to apply in ecology because it presupposes too much cogitation on the part of the agents, in fact might apply on evolutionary timescales. Those species that have made it through the filter of evolution are those that behave in a way that, given the behaviour of other species, results in survival. Could this be a new way to combine community and behavioural ecology? I'm not sure I understand the former enough to say either way. In ecology, we have come to accept the idea of disturbance as a natural feature of ecosystems, pushing the equilibrium concept to larger spatial and temporal scales (e.g. an equilibrial landscape of disturbed patches, or an equilibrial time series with a distribution of deviations from equilibrium). This idea seems not have been explored very much, if at all, by economists, despite the fact that, sadly, one needs only to read the news to see that there are at least as many sources of dramatic economic disturbance in the world as there have ever been.

What would it mean to truly abandon the idea of equilibrium? My impression was that this particular exploration initially struck many attendees as nihilistic. But George Sugihara showed that replacing the ideas of mechanistic understanding and equilibrium with the idea of weak attractors – i.e. that ecosystems tumble around in often complex spaces of possibility, with no single centre of gravity corresponding to an equilibrium – can, counter-intuitively, give new practical methods for understanding and predicting the dynamics of real ecosystems in a way that could improve things like fisheries policy. Perhaps it would be nihilistic to go further even than George, and assume that many, if not most, aspects of economies and ecosystems just keep on changing forever, in a way that simply cannot be predicted. But let's postpone that discussion for ecophilo. Which would have to be in Paris. With espresso. All night long.

Sharing ideas: what meetings are all about

For such discussions it would help if you were perfectly rational and well informed, but you're not, because you don't belong to *homo economicus*, the imaginary species that makes up most standard economic theory. By contrast, ecologists have an ambiguous relationship with rationality, often assuming in a lot of it at the individual level (think optimal foraging), but practically none of it at higher levels (think Lotka-Volterra, or the whole idea of a fixed foodweb). Doyne Farmer, who actually used ideas from community ecology to create a profit-making investment company, exploded the rationality assumption in financial markets, showing that 'inefficiencies' in the markets, far from disappearing instantly, can take decades to die away (incidentally these inefficiencies are similar to unused resources, of the kind that lead to new niches in ecosystems – but that's another story). Doyne therefore encouraged economists to 'tunnel in from the other side' by starting with assumptions of irrationality and lack of information. The truth being somewhere deep in the rock in between. Perhaps we ecologists will meet him there, digging away to try to find out what the (partial) rationality of organisms might mean for ecosystems. Whether we'll meet each other dead on and shake hands remains to be seen. It might make getting to Paris easier.

All a bit theoretical? To be fair, the meeting did have quite a theoretical bent, partly because economics is often more theoretical than ecology, and partly because we did want to separate Eco^2 from some more immediate applied meetings such the Natural Capital Initiative meetings (which we commend to you most highly!). Most people at Eco^2 seemed convinced that neither subject has yet developed the theory necessary to deal with the complexities of the artificial and natural ecological / economic systems on which we all depend, implying that current attempts to address ecological sustainability by valuing nature and like might be premature. Ironically, it's also obvious that both subjects are hugely short of the data they need to test even the theories they already have: the ecologists because ecological interactions are so hard to monitor, economists because of legal restrictions due to the confidential nature of most micro datasets. It's far from clear which barrier might be harder to remove. Faced with this impasse maybe we should all pack it in and do an easier subject, like physics? Or philosophy #ecophilo2016?

Nonetheless, I hope were weren't just fiddling while Rome burned and all that. Many attendees were, quite rightly, concerned with how we can combine ecological and economic thinking to create a sustainable future, and discussions, both structured and free, often turned to this topic. We held a 'top questions in…' exercise inspired by the one Bill Sutherland ran for the BES centenary (Sutherland el al *Identification of 100 fundamental ecological questions.* Journal of Ecology (2013) 101 pp58-67) and our top one was 'How can we source and protect funding for public goods?'. Partha Dasgupta argued strongly that economists have not grappled sufficiently with the natural environment, while Kathy Willis showed how we can, right now, combine ecological thinking and data to provide novel assessments of ecosystem services to aid land use planning and other forms of decision making. As her research made clear, climate change and ecosystem services are not just ideas, but realities that are affecting us all already, and will do so much more in the future. Kathy's ideas particularly hit home with the economists when she discussed climate change and coffee. After all, if the coffee stops, so too does humanity's ability to think its way out of its problems. Better make it ecophilo2015 then.

British Ecological Society

Methods in Ecology and Evolution

Anniversary symposium: Looking forward to the next 5 years

22 April 2015 • Charles Darwin House, London

- Modelling • Statistics
- Field monitoring • R
- Evolution • Remote sensing
- Biodiversity • Metabolomics

Methods in Ecology and Evolution is holding a symposium to celebrate the success of its first 5 years of publication, and to hear what's in store for the future from young, international researchers.

Early Bird registration opens in December 2014

For more details visit:
www.methodsinecologyandevolution.org/events

OF INTEREST TO MEMBERS

MATHEMATICAL MODELS IN ECOLOGY AND EVOLUTION PARIS 2015

http://www.biologie.ens.fr/mmee2015/

This meeting will host 6 selected mini-symposia, with 6 speakers each: 2 invited speakers (approximately 25 minutes talk) and 4 contributed speakers (approximately 15 minutes each).

If you would like to participate in the conference, we invite you to propose a mini-symposium devoted to your favourite subject. We ask you to provide a title of your symposium, along with a short introduction to the subject and a list of (2+2 spare) invited speakers.

You can propose 1 or 2 (related) mini-symposia by email to info-mmee2015@list01.biologie.ens.fr

Deadline December 12, 2014.
Decision mid-January 2015.

Mini-symposia close to the following themes are especially appreciated: epigenetics and information transfer, evolution of cooperation, modelling of speciation, adaptive dynamics, individual-based models of phylogenies, microbial ecology, and adaptation in a changing environment.

Once the list of 6 mini-symposia is established, a call for contributions of 3 kinds will be sent: oral contributions within a mini-symposium (6*4 = 24 slots), free oral contributions, posters (deadline April 2015).

Organisers:

Amaury Lambert
(UPMC, Collège de France)

Guillaume Achaz
(UPMC, Collège de France)

Minus van Baalen
(CNRS, ENS)

Silvia De Monte
(CNRS, ENS)

Todd Parsons
(UPMC, CNRS, Collège de France)

Emmanuel Schertzer
(UPMC, Collège de France)

To join the MMEE mailing list, see http://www.biologie.ens.fr/mmee2015/information.html

(No more than approx. 5 emails per year). You can also follow us on twitter using @MMEE2015Paris.

Call for papers

12th European Dry Grassland Meeting (EDGM)

From Population Biology to Community Ecology

Mainz, Germany, 22-27 May 2015

Palearctic dry grasslands have a long tradition of community analysis and description, leading to a detailed picture of these habitats, especially in Central Europe. In contrast, research on the biology of species and populations, such as pollination biology, dispersal ecology, demography or population genetics, is expanding rapidly. The connection between the two scientific disciplines is often weak; we will focus on this connection between population biology and community ecology for all dry grassland biota (invertebrates, vertebrates, non-vascular plants, vascular plants, fungi and lichens) as the overall topic of the next EDGM.

Specific topics of the conference

- Population biology of dry grassland species
- Diversity and community ecology of dry grasslands
- Management and conservation of dry grasslands
- Socio-cultural aspects of dry grasslands

The European Dry Grassland Meetings are organised annually by the European Dry Grassland Group (EDGG, http://www.edgg.org), a network of dry grassland/steppe researchers and conservationists from all disciplines. EDGG is affiliated with the IAVS (International Association for Vegetation Science) as a Working Group as well as with the EFNCP (European Federation for Nature Conservation and Pastoralism), and membership is free of charge.

Registration and deadlines: The conference webpage will open in autumn 2014. Deadline for abstracts is planned for February 2015.

We are looking forward to seeing you in Mainz, Germany!

Péter Török
Contact officer, EDGG Executive Committee

Dr Malcolm Cherrett

1935 -2014

The Society has profound reasons to mark the passing of Malcolm Cherrett at the end of August. Malcolm was a faithful member for more than 50 years and a major contributor to its growth and development, particularly when he held the post of Secretary to Council from 1977 to 1985.

Younger members may need reminding that in those days the Society relied on the holder of this voluntary post to carry out much of the day to day business through a small secretarial office housed in the Linnean Society rooms in Burlington House. As a new secretary, he set about locating the early minute books of the Society to form the basis of its archive, a thing of significance for a Society with such a long and distinguished history; no easy task, one volume being discovered propping up the bed of a member's son. During his term of office the Society grew from 3580 members to over 4000.

A very special contribution which Malcolm made to help celebrate the BES 75 year jubilee was his survey of the ecological ideas and findings which had in the opinions of the members made the most impact on science and world affairs (Ecological Concepts 1989).

John Malcolm Cherrett was born and grew up in Bishop Auckland, County Durham where his father had a printing business. He was educated at Durham School and St John's College, Durham University where he read Zoology and went on in 1957 to complete his PhD under Professor James Cragg. At that time Cragg was heading a research group specialising in the ecology of Pennine moorland. He encouraged Malcolm's somewhat unusual interest in quantitative spider ecology and Malcolm was to be seen wandering purposefully over the Moor House National Nature Reserve increasing the visibility of webs by dusting them with lycopodium powder or spraying them with a fine water mist from a back-pack spray. He also invented and built a series of heat extractors driving spiders and many of their prey sideways out of cut turves brought back with considerable effort to the laboratory. This became one of the first serious demonstrations of how animal micro distributions can be determined by habitat structure and architecture. By contrast a graph displayed on his laboratory wall revealing cost per spider sampled, was a measure both of Malcolm's humour and his financial acumen!

His formidable teaching skills were already emerging as a knowledgeable and considerate demonstrator and he also found time to give excellent supervision of some third year projects at Durham. It was not therefore surprising that on completion of his PhD in 1960, Malcolm opted to study for a PGCE in London where he achieved the rare double distinction in both theory and practice. Then he was appointed to a lectureship in applied zoology at University College of North Wales at Bangor (now Bangor University), where in 1986 he achieved a Readership in the School of Biological Sciences. Research remained a significant part of his life, but teaching and administration in the undergraduate programme also led to him helping to found and run a highly regarded Masters degree in ecology funded by NERC. From 1988-96 he was asked to organise the Erasmus and Tempus science student exchange system on behalf of Bangor. This resulted in many trips to Europe where firm contacts were made with universities, personnel and numerous students. A great net-working experience.

A Bangor expedition to Guiana in 1963 taught him to cope with bêtes rouges, snakes and nocturnal ants. All this triggered what was to become a life-long interest in tropical ecology with more than 20 trips, most often to Trinidad, where he held a senior Research Fellowship from 1966 to 68, but later including a further seven or eight S. American countries. Malcolm was a founder member of the British Arachnological Society before moving readily from spiders to leaf-cutting ants which continued to interest him for some thirty years. These studies formed the basis for many publications covering the ants and their interactions with other organisms, particularly wild and cultivated plants. Again his pioneering and characteristically thorough field work formed the basis of significant discoveries and conclusions. It was not entirely expected, for instance, that 95% of the energy requirements of the ants came from plant sap, not the fungi which they cultivated. The ants, although sampling many plants, cut a large amount of leaf material from only a few species during any particular foraging period yet even those most highly preferred were usually abandoned before being completely defoliated. Malcolm proposed a resource

UCNW Bangor Expedition to Guiana 1963. Malcolm is in the middle of back row

conservation hypothesis to explain these findings. Such conclusions led to an important corpus of work conducted in field and laboratory with the objective of understanding what determined ants' choice, and what effect these preferences had on the plants involved.

Nevertheless who could forget an understated quip in one of his instructive but entertaining seminars when a leaf-cutter induced by him to climb a ramp for the camera was seen to be carrying a banner on its back promoting "home rule for Cumberland."?

Yet another of his interests was the ecology of below-ground organisms, particularly invertebrates feeding on live roots, at a time when little was known about their behaviour and interactions. Characteristically he remedied this by forming a team at Bangor which built a rhizotron allowing the investigator to be underground at the level of the organisms so that they could be viewed through a transparent wall in their natural habitat. It was exciting and informative to be invited to accompany him "below stairs".

Malcolm was also active in the Forest Entomology Group of the Royal Entomological Society, particularly enjoying their field trips on which he carried his trademark umbrella. But that was overshadowed by the neat bow tie which graced his everyday dress. In others this might have been considered a little conspicuous but with Malcolm it was seen as a label of a much respected, conscientious and very capable gentle-man.

Was it a complete coincidence that in a year when Malcolm edited the Journal of the Durham Colleges Natural History Society, the Secretary of the Society was a charming Biology student named Jane Oldham who subsequently became Malcolm's wife and loving supporter throughout his active career and later retirement? They and their son Tom enjoyed a beautiful garden at their hospitable home overlooking the Menai straits and Snowdonia. For recreation they had a caravan (sometimes used for field trips) and later a narrow boat on the canals. This was a longed-for retirement dream and they spent three long summers travelling on the canals of England and Wales. It inspired a brilliant but unfulfilled idea of Malcolm's to go into business manufacturing a scaled down garden canal system.

We extend our deepest sympathies to Jane and Tom in their loss, and record our pride and pleasure in seeing both Malcolm and Jane so recently at the Society's Centenary party which could not have been such a poignant event without the past endeavours of persons like him.

John Whittaker

FROM OUR SOUTHERN CORRESPONDENT(S)

Boom and Bust: Lessons from the Outback

John Wiens and Richard Hobbs

John Wiens and Richard Hobbs. Brings one in mind of Hamlet: 'O villain, villain, smiling, damned villain!'

"I love a sunburnt country/A land of sweeping plains/ Of ragged mountain ranges/ Of droughts and flooding rains…". John was in a particularly poetic mood, reciting Dorothea Mackellar's My Country (1908) freely and accurately, while Richard brought another round of beers.

The two of us were in Alice Springs for the annual meeting of the Ecological Society of Australia. We were pondering booms and busts over beers (as ecologists are wont to do) while we watched the afternoon sun highlighting the river red gums bordering the dry, sandy bed of the Todd River in Alice Springs. It's the site of the famous Henley-on-Todd Regatta, in which the Australians (ever creative) race down the dry riverbed, running barefoot in bottomless boats. Only once in more than 50 years has the race been cancelled because there was actually water in the river. It's the epitome of boom (the rare floods) and bust (the rest of the time).

Central Australia (the "Outback" of legends and tourist brochures) is a vast arid land, one of the largest relatively intact environments on Earth. It's not only a sunburnt country but, most of the time, a parched country. But now and then, with little warning, the flooding rains come. It's a country where "the creeks run dry or ten feet high."[1] A boom and bust country.

The ESA meeting was replete with talks focusing on different aspects of this boom and bust environment. Flora and fauna, terrestrial and aquatic, adapted in a myriad of ways to coping with long periods without water and capitalizing on the sudden, brief periods where water is abundant. Birds, mammals, and insects covering large distances to reach isolated water sources or adapting behaviourally and physiologically to long-term scarcity. Complex interactions developing when water suddenly becomes abundant, plants can grow, and animals of all sorts can thrive and reproduce. Truly amazing human understanding and use of the landscape that allowed Aboriginal people to persist through boom and bust over millennia. And gradual development of pastoral practices that are more in tune with the country's dynamics.

The Todd River as it normally is (bust), Alice Springs, NT, Australia. Photograph courtesy of Steve Morton

Boom and bust dynamics are more evident in arid Australia than in many other places, but such extremes characterize most arid and semi-arid parts of the world. And they're all about water – too much of it or far too little. Past civilizations have risen on the booms and fallen on the busts. For example, a severe, prolonged drought in the 12th century that followed an unusually wet period may have led to the decline and disappearance of the Anasazi culture in the American southwest. The Hohokam culture in what is now Arizona lasted longer, into the 15th century, perhaps because they had built elaborate irrigation systems to support agriculture with water from rivers in what was otherwise a desert. But then they too suddenly disappeared.

Boom and bust episodes are not confined to the sparsely populated Australian Outback or past civilizations, however. California, which is at the opposite extreme in population and agricultural production, also has boom and bust water dynamics. As we write, California is in the third year of a drought that is nearly unprecedented in historical times. In 2013 and 2014, a vast region of persistently high atmospheric pressure over the northeastern Pacific Ocean – the "Ridiculously Resilient Ridge" – prevented typical winter storms from reaching California, bringing record-low precipitation and record-high temperatures.[2] Many reservoirs that store water for the dry spells are at less than 15% of their operating capacity. Domestic water use has been curtailed, wells in towns have run dry, and some farmers are receiving no irrigation water at all this year. Californians are even being asked not to wash their cars or water their lawns!

The biota are also suffering. The wetlands that were once traditional wintering habitats of millions of migratory waterbirds are long since gone, replaced by agriculture. The birds have come to depend instead on flooded rice fields, but this winter many of those fields are dry and barren. Salmon, Delta smelt, and several other fish are legally protected under the US Endangered Species Act, so water must be released from the reservoirs to meet the needs of the fish. That's water the farmers don't get, sparking debates about water for "stupid little fish" that's allowed to flow out to sea, and therefore "wasted." As the drought continues, the debates get angrier.[3]

Another view of the Todd River running. Photograph courtesy of Ashley Sparrow

That's the bust. But California also has booms. In the midst of the current drought, southern California was deluged by the remnants of a tropical storm that flooded neighborhoods and submerged cars, although it did little to alleviate the effects of the drought. In 1862, the city of Sacramento was virtually destroyed by the "Great Flood" resulting from rains of Biblical scale (actually, 45 days). Every few years the "pineapple express" (the technical term is atmospheric rivers) brings pulses of moisture-laden Pacific air to the state, dumping more water than the streams and rivers can handle. But not lately.

Southern California, where much of the water normally goes, used to be a desert. Unlike the Outback, however, it had sources of water from elsewhere – northern California, the Colorado River – that could be tapped, albeit over long distances and at great cost. Over the past century, Californians have adapted to the boom and bust dynamics, not by adjusting their agricultural practices or water use, but by building a vast infrastructure of dams, channels, pumps, and aqueducts that stores water and then conveys it into the desert, creating an agricultural breadbasket and fueling the explosive growth of the Los Angeles Basin.[4] The current drought has brought calls for more dams, built higher, and ever greater technology to soften the boom and bust water dynamics. In the meantime, farmers have responded to global demands by planting high-income crops such as almonds, which require more and more irrigation water and are therefore increasingly vulnerable to busts.

How will this end? Eventually the current drought in California will be broken and the rains and floods will return. The boom may erase memories of the bust, but the adaptation by engineering will continue apace. Yet there are limits (recent history notwithstanding). Climate-change models uniformly predict that the frequency and magnitude of extreme events – the booms and busts – will increase. In past millennia California has experienced droughts that lasted 30, 50, or even 500 years.

Todd River running full (boom), Alice Springs, NT, Australia. Photograph courtesy of Margaret Friedel

California may seem far removed from the Australian Outback. Certainly, the long-term aridity of the Outback, the extended drys, the sparse population, and the lack of free-flowing rivers fed by snowfall in distant mountains have precluded the development of the infrastructure that has (so far) enabled Californians to cope with much lesser drys. It seems unlikely that central Australia will ever see the sort of development going on in California. On the other hand, it is also unlikely to run into the problems now being faced by Californians. The same is not true for the less arid fringes of Australia, though, where California-type issues are being faced for very similar reasons.

"Wot's all this about?" interjected Alan Crowden as he appeared, looking for a beer. "Not likely to be very interesting to BES members in the UK, is it? Rains all the time there, doesn't it?" We wondered whether to try to ignore Alan as usual, but thought he had a fair point. Wrong, but fair. The boom and bust cycles of interior Australia may seem a long way removed from a rainy UK, but it may be that even the UK could yet experience such dynamics, albeit less dramatic and on a shorter timeframe. Droughts do occur in the UK and there is evidence to suggest that these may become more frequent and intense.[5] Because of high population densities and low storage capacities, droughts can get serious quickly in the UK – busts, if you like. On the flip side, storms and flood events also seem to be making news more often in the UK – in line with many other parts of the world.

So, perhaps instead of being a weird outlier, the boom and bust interior of Australia could serve as a useful bell-weather for changing dynamics in many other places, even those traditionally seen as having more equable and predictable climates. Anyway, that seemed like a reasonable premise as we watched the sun finally set behind the red rocks of the range bordering Alice Springs. "This could even be a good topic for a BES *Bulletin* essay" quipped John. "When's the deadline again?" asked Richard. "Typical" grumbled Alan. And the attractive waitperson brought another round of beers.

FOOTNOTES

[1] Friedel, M.H., B.D. Foran, and D.M. Stafford Smith. 1990. Where the creeks run dry or ten feet high: pastoral management in Australia. Proceedings of the Ecological Society of Australia 16: 185-194.

[2] Herring, S. C., M. P. Hoerling, T. C. Peterson, and P. A. Stott, Eds. 2014. Explaining Extreme Events of 2013 from a Climate Perspective. Bulletin of the American Meteorological Society 95 (9), S1–96. http://www2.ametsoc.org/ams/assets/File/publications/BAMS_EEE_2013_Full_Report.pdf

[3] John has written about this in a previous essay, Wildlife, people, and water: Who wins? Bulletin of the British Ecological Society 43(4): 54-55.

[4] Chronicled in detail by Marc Reisner in Desert Cadillac (1993. Penguin Books, New York, NY).

[5] Rahiz, M., and M. New. 2013. 21st Century Drought Scenarios for the UK. Water Resources Management 27: 1039-1061.

Public participation in ecological research: a reflection on 'Conker Tree Science' and the rise of citizen science

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It is difficult for ecologists who are passionate about their subject not to enthuse to others about the marvels of the natural world. It was perhaps not surprising then that, back in 2009, we (Darren and Michael) found ourselves out of our depths in a Bristol shopping mall talking to hundreds of people about 'alien' invasive insects and some of the threats they posed to trees.

A few months earlier we had made a hasty submission to RCUK for a small pot of money as part of 'National Science and Engineering Week'. As then postdoctoral researchers at the University of Bristol, we were keen to find ways of presenting aspects of our work as network ecologists to anyone who would listen. In particular, we wanted to highlight some pressing environmental problems in a novel and engaging way to a general audience. This inevitably took us outside of our comfort zones. Some of our academic peers questioned why we wanted to spend some of our much-guarded research time involved with public engagement work, but we did not regard the two things as separate. Our intention was to capitalise on the growing interest in public participation in environmental research by asking the public to take part in a real, mutually beneficial science experiment that would ultimately generate publishable data. In so doing, members of the public would gain a greater understanding of the threats to nature and we would benefit from their insights and experiences. Indeed we could see from highly successful projects, such as Evolution MegaLab, that it could be possible to mobilise members of the public across the country to become 'citizen scientists'. Little did we know that this would ultimately lead to our project involving over 8000 people, resulting in national TV, radio and newspaper coverage and us becoming finalists in a national public engagement competition[1].

So one weekend in March 2009, armed with fliers and plastic vials containing 'alien' insect-infected pyracantha leaves, we set up a stall in a busy Bristol shopping mall and challenged locals to get involved with our first science experiment. The public's mission was to check the leaf in their vial each day and record the insect that emerged — either a tiny moth not from the UK or a parasitic wasp — on a purpose-built website. If the wasp emerged, then natural pest control had occurred. Despite often being mistaken as 'chuggers', we had a great weekend talking to people about ecology. Giving away 'alien' insects was a particular draw for children. Reports in the local media were welcomed by the University. However, the response rates by the public were quite low, partly because the project was 6 weeks long (would you remember to log results after 6 weeks?) but they were high enough to inspire us to develop these ideas further.

Spurred on by our experiences and the positive feedback we received from our newly recruited citizen scientists, we decided to build on the positive aspects of the work and run a new project the following year. We still wanted our work to be hypothesis-driven, but we acknowledged the need for checking and assessing data quality control. At the same time we were noticing that horse-chestnut trees were becoming infested with an alien, leaf-mining moth (*Cameraria ohridella*) and that this plant-leafminer-parasitoid interaction would be an ideal study-system, not least because people are interested in iconic trees such as these. Additionally, we could see the benefits of citizen scientists providing additional data on the distribution of the leafminer moth to complement ongoing research by Forest Research. So with support from a BES Outreach Grant and NERC Public Engagement funds, we established 'Conker Tree Science' in 2010. We created a purpose-built website to answer two specific hypotheses regarding the rate of spread of the horse chestnut leafminer moth and their associated pest-controlling parasitoids. We badged these hypotheses as 'missions' with school teachers in mind and provided detailed instructions on how to score leaf damage by the leafmining moth as well as how to rear parasitoids in sealed plastic bags. To ground-truth the quality of the data that was subsequently submitted by the citizen scientists, we trained STEM Ambassadors in cities across the UK, who actively worked alongside school classes. We were particularly keen to capture feedback from participants, which they were able to provide on our website (which also recorded hit rates and other useful metrics). As this was a nationwide project, we were fully aware that the success of Conker Tree Science depended on publicity and coverage by the media. After lots of uncertainty, our break came when BBC Radio 4's Material World helped us to launch the project. But we soon realised that to get long-term national participation in the project we would need lots more publicity, which did actually come as journalists started to contact us to ask "what's happening to our conker trees?" Conker Tree Science has since featured on BBC's Autumnwatch and The One Show, as well as articles in the national newspapers.

Central to the success of Conker Tree Science has been the development of the technology to capture the data across the country (which also provides us with invaluable information regarding project participation). We were keen to make our website as interactive as possible and instantly show participants the results of the project via time-filtered maps. However, it was in 2011 that Dave Kilbey and the Nature Locator team revolutionised the project by creating a JISC-funded geospatial smartphone app that allowed people to take photographs on their mobile phone and to upload damage scores to a central database. The number of downloads for the app spiked after it rose in the iTunes chart for education apps (reaching number 1), and although Stephen Fry's tweeting about the project was exciting, it had a more modest impact on downloads! The app is no longer in active use now that the current stage of the project has come to a close but it formed the foundation for a range of new and exciting citizen science apps, such as iRecord Ladybirds and PlantTracker.

Conker Tree Science has enabled us to engage over 8000 people with a pressing ecological problem through participation in real science. With adequate checks for data quality, we were able to publish our first open-access scientific paper this year and establish a framework for future hypothesis-led citizen science (Pocock and Evans, 2014). With the help of citizen scientists from across the country, we discovered that there was a rapid rise in leaf damage during the first three years that *C. ohridella* was present in a location and only a slight rise thereafter, while estimated rates of parasitism increased from 1.6 to 5.9% when the time *C. ohridella* had been present in a location increased from 3 to 6 years. We think that this increase is due to recruitment of native generalist parasitoids, rather than the adaptation or host-tracking of more specialised parasitoids, as appears to have occurred elsewhere in Europe. We were thrilled that Conker Tree Science made the finals of the National Coordinating Centre for Public Engagement's 'Engage Competition' this year.

Those wishing to get involved with science communication can read more, including a case study of our project in a recent book by Bowater and Yeoman (Bowater and Yeoman, 2013). More about the horse-chestnut leafminer and its parasitoids can be found in Pocock et al. (2011), and the guide to identifying parasitoids to species is also on our website. Conker Tree Science is featured as a RCUK impact case study on their website[2].

If you are inspired and want to find out more about getting involved with citizen science, it would be worth reading the recent guides on best practice in using citizen science and running projects (Tweddle et al., 2012;Pocock et al., 2014)[3] – and definitely joining with the BES Citizen Science SIG (email: citizenscience@ceh.ac.uk) to meet and share experience with other enthusiasts.

5 TOP TIPS FOR ENGAGING CITIZEN SCIENTISTS

1. Evaluate – what do you hope to achieve? Be clear about your aims and evaluate afterwards to see if you achieved them and what you can learn (and share) for the future (see http://www.publicengagement.ac.uk/plan-it/evaluation/evaluation-resources).
2. Reflect – why are you doing it? Who is your audience? Make sure that your engagement is appropriate. Reflect, learn and adapt to situations as you go along.
3. Get support (e.g. university engagement officers, press officers, BES staff etc.) – they won't usually do the work for you, but if you are enthusiastic they will be willing to help you as much as they can. Also learn from other people's experience by talking to them or reading case studies (see: http://www.publicengagement.ac.uk/)
4. Time – be prepared to put in lots of effort. It *will* take more time and energy than you expect and you may need to opportunistic (but in our experience it is worth it, and makes a change from the 'day job')
5. Have fun! Science is not just about facts, analysis or solitary work – it involves people and should be enjoyed as part of a community.

FOOTNOTES

[1] Bowater, L. & Yeoman, K. (2013) Science Communication: A Practical Guide for Scientists. Wiley-Blackwell, Chichester.

[2] Pocock, M., Evans, D., Straw, N. & Polaszek, A. (2011) The Horse-chestnut Leaf-miner and its parasitoids. British wildlife, 22, 305-313.

[3] Pocock, M. J. O., Chapman, D. S., Sheppard, L. J. & Roy, H. E. (2014) Choosing and Using Citizen Science: a guide to when and how to use citizen science to monitor biodiversity and the environment. Centre for Ecology & Hydrology.

Pocock, M. J. O. & Evans, D. M. (2014) The Success of the Horse-Chestnut Leaf-Miner, *Cameraria ohridella*, in the UK Revealed with Hypothesis-Led Citizen Science. Plos One, 9.

Tweddle, J. C., Robinson, L. D., Pocock, M. J. & Roy, H. E. (2012) Guide to Citizen Science: developing, implementing and evaluating citizen science to study biodiversity and the environment in the UK. Natural History Museum and Centre for Ecology & Hydrology.

NOT JUST SPEEDY – *SUPERSONIC!* Part 2

Emma Sayer / Associate Editor of the *Bulletin* / University of Lancaster
@panemma

Here's the second instalment of super-speedy BES journal editors (one of whom wishes to remain anonymous) and their thoughts on reviewers, top papers and finding time to do all the extra work involved in editing a top ecology journal…

JEAN-MICHEL GAILLARD

Journal of Animal Ecology

The best thing about being an editor…

To get an accurate picture about the current state of a broad research area (animal ecology in my case).

How I find the time…

It is just matter of priority. I rank reading papers very high in my research activity

The next big thing…

Difficult to guess for sure but there is a clear trend towards more integrated studies involving a mixture of skills from different fields of research. In the case of ecology, there is clearly an increasing use of statistical, genetic, molecular, and physiological concepts and approaches.

A good reviewer is…

From my viewpoint, a good reviewer focuses on the material presented in the paper to evaluate and not on the authors, provides a critical assessment of the paper and makes explicit suggestions on how to improve the quality of the paper. A good reviewer should waive her/his anonymity to allow the authors asking for further details if required.

My favourite (own) paper…

My review paper published in Ann Rev Ecol Syst in 2000 because it is the only paper for which I had enough space to write the paper I had in mind, my papers on environmental canalization (Ecology 2003), coin-flipping (JAE 2013) and optimal litter size (JAE 2014) because I revisited old concepts of life history evolution with new data and methods, and my papers on comparative life history across mammals and demography across populations of large herbivores because of my special interest in these research topics.

DAVID J. GIBSON

Journal of Ecology
@DavidJohnGibson

The best thing about being an editor…

The opportunity to interact with other ecologists from around the world is inspiring, as is the opportunity to help promote and encourage publication of research at the forefront of our discipline. And, I get to see it first!

How I find the time…

I don't! I wish that I did, but we work as a cooperative team of four Editors and over 50 Associate Editors. I'm responsible for about 25% of the submitted manuscripts and read these in as much depth as necessary to make an informed decision. Don't worry; accepted manuscripts do get a thorough reading!

The next big thing…

If I knew I'd be working on it. But, I think that using molecular phylogenetic data to relate below-species level relationships (i.e., practically ignoring the species concept) to abiotic community metrics (e.g., soils, locations) has fascinating potential. In other words, reinvent community ecology without being forced to always recognize and use species names. We are seeing hints of this with some of the phylogenetic analyses already. Evolutionary-minded taxonomists have told me that the species concept is flawed, yet the basis for community ecology is the species by site matrix. OK, let's use our new molecular tools to deal with this.

A good reviewer is…

Efficient, on time, thorough, fair, knowledgeable, and offering constructive criticism that helps the Editors make a fair decision, and helps the author(s) improve their work.

My favourite (own) paper…

I've never been prouder of the first paper from my doctoral thesis that I published in Journal of Ecology (Gibson, D.J. 1988 The relationship of sheep grazing and soil heterogeneity to plant spatial patterns in dune grassland JEcol., 76: 233-252). I not only feel that the paper, along with the accompanying follow up also in the Journal in the next issue, was pretty good work (it still gets cited), but it gave me a great boost of self-confidence as a young ecologist. I felt very proud to publish in a journal with such a long-standing tradition. Helping young ecologists publish their best work is something we should strive to do.

ANON.

Journal: if you need to ask, you won't know.

The best thing about being an editor…

I'm afraid there is a court order preventing me from revealing this.

How I find the time…

I borrow my wife's time turner

The next big thing…

What I'm working on, of course.

A good reviewer is…

One who either agrees with me or whose comments are so over the top that the response cannot fail to be comedy gold. Unfortunately there is another court order preventing me from discussing this in more detail.

My favourite (own) paper…

My unpublished manuscript, which unites neutral theory and Cope's Rule. Unfortunately this has been repeatedly rejected by shortsighted editors who insist that I use old 18th Century statistical methods.

The Chartered Institute of Ecology and Environmental Management

Sally Hayns MCIEEM / Chief Executive Officer, Chartered Institute of Ecology and Environmental Management
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BES PRESIDENT TALKS AT CIEEM AUTUMN CONFERENCE

We were delighted to welcome BES President Professor Bill Sutherland as a keynote speaker at our Autumn Conference in Edinburgh in November. The Conference, which was on the themes of Progress in Effective Habitat Restoration, Translocation and Creation, was very well attended by delegates keen to share knowledge of what works in practice. Evidence-based policy and practice is something that is very important to CIEEM and it was great to hear Bill talking about the importance of linking research evidence to what happens 'in the field'. He also echoed our wish for CIEEM and BES to work more closely together in trying to influence decision-makers to use sound evidence in policy making.

The conference was opened by the Scottish Minister for Environment and Climate Change, Mr Paul Wheelhouse MSP, who set out his government's commitment to protecting and enhancing Scotland's environmental riches. Further presentations, including those from CIEEM President John Box and CIEEM Fellow Professor Rob Marrs looked at techniques for evaluating success of habitat management techniques. A number of small and large-scale practical case studies were showcased, allowing lessons learnt through experience to be openly shared and discussed. Rewilding as a conservation management tool was also debated.

The Conference Dinner in the University of Edinburgh's magnificent Playfair Library was a great success. Dick Balharry, conservationist and environmental writer, gave an entertaining after dinner speech which was warmly received by those attending.

For the first time the conference also included some 'speed networking' sessions to allow early career ecologists and environmental managers the opportunity to spend some time talking about career development with some of our more senior (in experience – not age) members. This was felt to be very rewarding and enjoyable on both sides and is something that we would look to do again.

A more detailed summary of the conference will be in the December issue of In Practice.

EXPANDING THE DEGREE ACCREDITATION SCHEME

CIEEM's degree accreditation scheme has been running for almost two years and there are now 14 accredited degrees and degree pathways. A recent review of the scheme has shown that it is working well and CIEEM is also seeing tangible benefits in terms of greater engagement between members and higher education institutions and direct benefits as a result to students following accredited degree programmes.

It was always the intention, once the scheme had settled in, to consider the practicalities of accrediting more specialist degree programmes that focus on a narrower range of knowledge and skills in depth rather than the breadth required by the current scheme. Accordingly the Accreditation Advisory Group has now reconvened to start exploring options to achieve this. Further details will be published in due course.

2015 STUDENT PROJECT AWARDS LAUNCHED

Following the success of the 2014 CIEEM Awards the 2015 Awards have now been launched. Of particular interest to BES student members will be the undergraduate and postgraduate Student Project awards which are already open for application.

NEW SPECIAL INTEREST GROUPS

CIEEM's Special Interest Groups (SIGs) are networks of members with a common interest in a specific area of ecological and/or environmental practice. Like our Geographic Sections, SIGS are knowledge-sharing and mutual support vehicles operating through discussion forums, events and practical activities.

In response to members' suggestions two new SIGS have recently been formed: the Academic Special Interest Group and the Marine Special Interest Group. Both SIGs are self-explanatory from their titles! We hope that, with Secretariat support, they will flourish and become active networks that add an extra dimension of CIEEM membership benefit to those involved.

DIVERSITY WORKING GROUP

CIEEM's Diversity Working Group, which was formed earlier this year, has recently undertaken a survey of members to identify barriers to diversity within the profession and / or within CIEEM's activities. Feedback from the survey is still being analysed but it is clear from the interest in the survey that this issue has touched a chord in many members' minds.

CIEEM is also contributing to the Royal Society's *Leading the Way* initiative. We have contributed members' case studies of good practice in supporting diversity to the project which we hope will help other branches of science looking to tackle diversity issues.

REGISTER OF CHARTERED ECOLOGISTS

There are now over 75 Chartered Ecologists on our Register with a further 15 applicants currently undergoing assessment. We are delighted with the growth of the Register and the response from external stakeholders, such as statutory agencies, who are starting to see the Chartered Ecologist accreditation as a standard of high professional practice. We are also very pleased with feedback from registrants who say they have found the process 'daunting' and 'rigorous' but well worth the effort and are very proud to have achieved it. Well done to them all.

ONLINE LEARNING

CIEEM is starting to look at online learning as an addition to its professional development programme offering. Over the next few months we will be undertaking a feasibility study into the potential for online learning to sit alongside our more traditional field and classroom-based taught courses. We hope that there might be scope for using online learning to increase accessibility and affordability of some learning provision in the future.

PEREGRINE TALES

As the staff of the CIEEM Secretariat spend far too much time at their computers and desks and not enough time in the great outdoors we were delighted when a pair of peregrines took to nesting in the vicinity of our Winchester office in 2013 and reappeared this year. At last some 'real' wildlife to enjoy. And enjoy them we have since the church steeple almost opposite our office windows is a favourite perching spot. This does have its downside of course. They are definitely a distraction as we often stop to look out for them. Their screeching as they fly around our block of buildings in summer (when we have the windows open) is so loud that we often have to apologise to those on the other end of the phone. They regularly catch pigeons and other birds and then sit and tear their prey apart before our eyes. But we love them and would be bereft if they left us. Isn't nature wonderful?

FORTHCOMING CONFERENCES:

Lessons to be learnt from invasive species mitigation and management in the British Overseas territories

December 16 2014
London

Managing change in coastal habitats

March 2014
venue tbc

Further details are available at
www.cieem.net

PUBLISHING NEWS

Liz Baker / Deputy Head of Publications, British Ecological Society

RECOGNITION OF ACHIEVEMENT FOR A RESEARCH PAPER AWARD 2014

The Recognition of Achievement for a Research Paper Award is being presented to those authors whose papers have been the most highly cited in the BES journals for the past 5 years.

The British Ecological Society has an international reputation for publishing high-quality ecological research. Annually it publishes many papers that go on to be highly cited in the scientific literature and this Award has been introduced to acknowledge authors whose papers have been particularly well cited.

We congratulate the following researchers for the success of their papers published in our journals:

JOURNAL OF ECOLOGY, 2014 AWARD

Dario Fornara

Awarded to Dr Dario Fornara for his paper *Plant functional composition influences rates of soil carbon and nitrogen accumulation.* Co-authored with David Tilman (Journal of Ecology, 96: 314–322).

In this paper the Fornara and Tilman demonstrate that plant functional complementarity is a key reason why higher plant diversity leads to greater soil C and N accumulation on agriculturally degraded soils. The results suggest the combination of key C4 grass–legume species may greatly increase ecosystem services such as soil C accumulation and biomass (biofuel) production in both high- and low-diversity N-limited grassland systems.

Dario Fornara is currently Principal Scientific Officer in the Sustainable Agri-Food Sciences Division of the Agri-Food & Biosciences Institute (AFBI), Belfast, UK. He is a former Lecturer in Terrestrial Ecology at the University of Ulster. Dr. Fornara was awarded his PhD in 2005 from the University of Pretoria in South Africa and has spent the last 12 years working in very different biomes from tropical forests in Central-America and sub-tropical savannas in Southern-Africa to temperate grasslands in Northern America and Europe. His research addresses how changes in plant species diversity and land use management could influence the biogeochemistry of grassland ecosystems and in particular the delivery of key ecosystem services such as soil carbon sequestration.

JOURNAL OF ANIMAL ECOLOGY, 2014 AWARD

Jane Elith

Awarded to Dr Jane Elith for her paper *A working guide to boosted regression trees,* co-authored with John Leathwick and Trevor Hastie (Journal of Animal Ecology, 77: 802–813).

In this paper Dr Elith and colleagues explain the statistical learning method, boosted regression trees (BRT). They demonstrate the practicalities and advantages of using BRT through a distributional analysis of the short-finned eel (*Anguilla australis* Richardson), a native freshwater fish of New Zealand. They use a data set of over 13 000 sites to illustrate effects of several settings, and then fit and interpret a model using a subset of the data. They also provide code and a tutorial to enable the wider use of BRT by ecologists.

Jane Elith, who is also acknowledged for her work published in *Methods in Ecology and Evolution*, is an Australian Research Council Future Fellow at the University of Melbourne. She enjoys working at the interface between the technical aspects of statistical and machine learning models, and the practical needs of ecologists and conservation practitioners wanting to apply them. Since completing her PhD in 2002, Dr Elith's main research and teaching focus has been understanding and advancing methods for species distribution modelling.

JOURNAL OF APPLIED ECOLOGY, 2014 AWARD

Regula Billeter

Awarded to Dr Regular Billeter for her paper *Indicators for biodiversity in agricultural landscapes: a pan-European study* co-authored with Jaan Liira, Debra Bailey, Rob Bugter, Paul Arens, Isabelle Augenstein, Stephanie Aviron, Jacques Baudry, Roman Bukacek, Francoise Burel, Marten Cerny, Geert De Blust, Raphael De Cock, Tim Diekötter, Hansjoerg Dietz, *Jolanda Dirksen, Carsten Dormann, Walter Durka, Mark Frenzel, Roman Hamersky, Frederik Hendrickx, Felix Herzog, Stefan Klotz, Koolstra, B., Angela Lausch, Le Coeur, D., Jean-Pierre Maelfait, Paul Opdam, Martina Roubalova, Agnes Schermann, Nicolas Schermann, Thomas Schmidt, Oliver Schweiger, Mary Smulders, Marjan Speelmans, Petra Simova, Jana Verboom, Walter Van Wingerden, Martin Zobel, and Peter Edwards (Journal of Applied Ecology, 45: 141–150).*

Dr Billeter and colleagues conclude that indicator taxa are unlikely to provide an effective means of predicting biodiversity at a large spatial scale, especially where there is large biogeographical variation in species richness. However, a small list of landscape and land-use parameters can be used in agricultural landscapes to infer large-scale patterns of species richness. Their results suggest that to halt the loss of biodiversity in these landscapes, it is important to preserve and, if possible, increase the area of semi-natural habitat.

Regula Billeter is a plant ecologist interested in varying aspects of biodiversity, vegetation dynamics and climate change. She was awarded her PhD by the University of Zurich working on secondary succession in fens. For her postdoc on biodiversity in agricultural landscapes she joined the plant ecology group at ETH Zurich and continued to work there as senior scientist. Currently she is working at the Zurich University of Applied Sciences.

FUNCTIONAL ECOLOGY, 2014 AWARD

Michael Kearney

Awarded to Dr Michael Kearney for his paper *Integrating biophysical models and evolutionary theory to predict climatic impacts on species' ranges: the dengue mosquito Aedes aegypti in Australia,* co-authored with Warren Porter, Craig Williams, Scott Ritchie and Ary Hoffmann (Functional Ecology, 23: 528–538).

The study described in this paper by Dr Kearney and colleagues demonstrates how biophysical models of climate–animal interactions can be applied to make decisions about managing biotic responses to climate change. Mechanistic models of the kind applied in this study can provide more robust and general predictions than correlative analyses. They can also explicitly incorporate evolutionary responses, the outcomes of which may significantly alter management decisions.

Michael Kearney is a physiological ecologist, Senior Lecturer and Australian Research Fellow in the Zoology Department at The University of Melbourne. His research is focused on ways to connect what we can measure about an animal's basic survival skills and capabilities (e.g. temperature tolerances, water loss rates, energetics, microhabitat requirements, nutrition) with what we can measure about their environments and how they change though space and time (maps of temperature, rainfall, terrain, habitat features and so on). From a theoretical and conceptual point of view, this has led Dr Kearney to work in the fields of microclimate modelling, biophysical ecology and metabolic theory.

METHODS IN ECOLOGY AND EVOLUTION, 2014 AWARD

Jane Elith

Awarded to Jane Elith for her paper *The art of modelling range-shifting species* co-authored with Michael Kearney and Steven Phillips (Methods in Ecology and Evolution, 1: 330–342).

The biodiversity of many regions in the world is experiencing novel threats created by species invasions and climate change. Predictions of future species distributions are required for management, but there are acknowledged problems with many current methods, and relatively few advances in techniques for understanding or overcoming these. Using data on cane toads in Australia, and comparing mechanistic and correlative models, this paper explored why various methods performed as they did. Dr Elith and colleagues developed new methods for model interrogation and made these available in MaxEnt.

Jane Elith, who is also acknowledged for her work published in the *Journal of Animal Ecology*, is an Australian Research Council Future Fellow at the University of Melbourne. She enjoys working at the interface between the technical aspects of statistical and machine learning models, and the practical needs of ecologists and conservation practitioners wanting to apply them. Since completing her PhD in 2002, her main research and teaching focus has been understanding and advancing methods for species distribution modelling.

JOURNAL NEWS

Journal of Applied Ecology

www.journalofappliedecology.org
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Associate Editor Mentoring Opportunity

We are extremely excited to announce a new opportunity for early career researchers who are interested in gaining editorial experience. The idea behind this initiative is to provide a new route into editorial work, along with the associated networking benefits that it can provide. Most Associate Editors are invited to serve on boards, but to a certain extent being invited can be the result of a fortuitous event or simply who you know (Nathalie Pettorelli has written an excellent post on this topic for our new blog, see below), which means many good, enthusiastic people are not given an opportunity to serve on an editorial board. We hope this initiative will provide an opportunity for any early career applied ecologists to express their interest and gain some editorial experience. Starting in January 2015, each of the five Senior Editors will act as a mentor to one participant, providing advice and guidance on handling papers during a six-month Associate Editor training post. The opportunity is open to anyone who has completed a PhD in the field of applied ecology within the past 10 years and who has little or no editorial board experience. One post per year is available with each Senior Editor.

To apply, just send a CV or link to your personal webpage, a list of 3–8 recently published papers, and a short statement outlining your views and experiences of publishing, areas of expertise, and stating which Senior Editor would be most appropriate for your research area to admin@journalofappliedecology.org If you know someone who might be interested, please do encourage them to apply. All the information is also available on the journal website (http://www.journalofappliedecology.org/view/0/editorialBoard.html#mentoring).

The Applied Ecologist's Blog

If you follow the journal on Twitter (@JAppliedEcology) or have visited our homepage recently, you may have already seen our new online initiative "The Applied Ecologist's Blog" (http://jappliedecologyblog.wordpress.com/), which was launched in August.

Our first blog post was a wonderful stop-motion video "Pine fiction" based on the paper by Mortelliti *et al.* (Vol. 51 Issue 5, 1179–1187). Other posts on the blog so far include Nathalie Pettorelli's post on the Associate Editor mentoring opportunity "Opening your own door into our editorial team" and a guest post from the winner of the Southwood prize 2013, Kulbhushansingh Suryawanshi, on his research studying the conflicts between pastoralists and snow leopards in the Trans-Himalayan mountains "People, predators and perceptions".

Changes to the Editorial Board

We warmly welcome Guillaume Chapron, Akira Mori, Jörg Müller, Jason Rohr, and Steve Willis to the editorial board. Santiago Saura recently stepped down as Associate Editor and we take this opportunity to thank him for his service to the journal and wish Santiago all the very best for the future.

Erika Newton
Assistant Editor

Functional Ecology

www.functionalecology.org
@FunEcology

The first issue in our new, online-only 12 issues a year format will be published in January, and will include our new Extended Spotlight: Community phylogenetics and ecosystem functioning, guest-edited by Anita Narwani, Jeremy Fox, Blake Matthews & Patrick Venail. This select set of specially commissioned papers provides a much-needed evaluation of the state-of-the-field of community phylogenetics and biodiversity-ecosystem functioning research and also highlights much-needed changes and provides concrete guidelines for the next generation of studies. Also in this issue is our latest FE Spotlight, "Nutritional geometry provides new insights into the interaction between food quality and demography in endangered wildlife", which puts Nie *et al*'s paper "Obligate herbivory in an ancestrally carnivorous lineage: the giant panda and bamboo from the perspective of nutritional geometry" (also in this issue) in broader context and explores the greater significance of this paper.

An obligate herbivore at work

Also in progress for 2015 is our latest Special Feature, guest-edited by Amy Hahs and Karl Evans, on Urban Ecology: Expanding fundamental ecological knowledge by studying urban ecosystems. The expansion, densification and proliferation of urban areas around the word is currently occurring at an unprecedented rate, with ecologists are increasingly being called upon to help to create sustainable and resilient cities. Despite this, there are relatively few studies that provide a mechanistic understanding of ecological responses to the intense and often novel selection pressures imposed by urban development. This special feature will highlight the research opportunities that exist in urban landscapes.

In advance of the upcoming AGM, Senior Editor Duncan Irschick has interviewed Kyle Demes, winner of our 2013 Haldane Prize For Young Investigators award for *Functional Ecology*, about his paper "Survival of the weakest: increased frond mechanical strength in a wave-swept kelp inhibits self-pruning and increases whole-plant mortality" (Functional Ecology, Volume 27, Issue 2: 439-445)" for our podcast (https://soundcloud.com/besjournals/fe-haldane-prizewinner-kyle-demes-talks-to-duncan-irschick-about-the-advantages-of-fragile-fronds). Both Kyle and Duncan will be presenting at the joint British Ecological Society and Société Française d'Ecologie meeting in Lille.

As our submission rate continues to increase, *Functional Ecology* has expanded our Associate Editor board. As well as specialist knowledge of areas where *Functional Ecology* has developed significantly (plant-animal interactions, ecological and evolutionary physiology, climate change impacts, conservation behaviour and socioecology), our new editors cover a range of approaches to ecological research, emphasising the multi-disciplinary nature of *Functional Ecology's* scope. Jessamyn Manson, joins us from the University of Alberta, Kailen Mooney and Sergio Rasmann from University of California, Irvine, James Bell from Rothamsted Research, Caroline Williams from University of California, Berkeley and David Lusseau from the University of Aberdeen. We look forward to working with them in 2015.

Jennifer Meyer
Assistant Editor

Methods in Ecology and Evolution

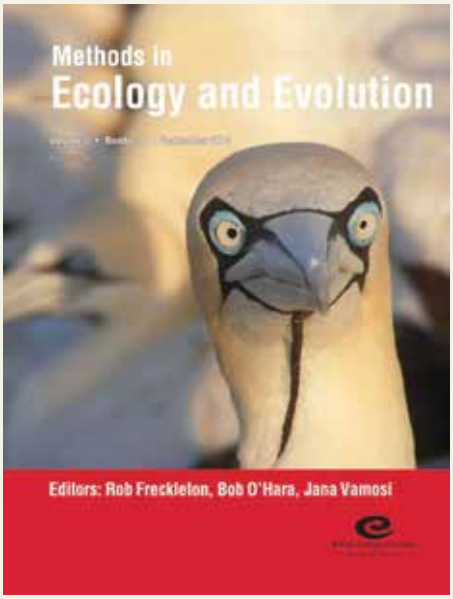
www.methodsinecologyandevolution.org
@MethodsEcolEvol

5th Anniversary Symposium: looking forward for another 5 years

2015 marks *Methods* 5th Anniversary! We are running a symposium to celebrate the success of the journal over its first 5 years of publication, and to look forward to what's in store for the future. The symposium will be held in Charles Darwin House, London, on 22-April 2015. Topics covered will include modelling, statistics, field monitoring, R and evolution. Early bird registration will open in January, for more details visit: methodsinecologyandevolution.org/events.

Methods blog

Earlier this year David Warton interviewed the Graybill/ENVR Conference organisers to discuss the conference highlights, current trends, and where the conference series is going next; David also interviewed Ben Bolker and Mark Brewer about the tendency to develop and use big fancy analyses that are in some applications unnecessarily complex, why it happens, and what can be done about it; In addition, Pat Backwell wrote an interesting piece on gender bias in the publication of scientific papers (methodsblog.wordpress.com).



Virtual Issues and Special Features

Keep an eye out for our upcoming joint Special Feature with the open access journal, *Ecology and Evolution*, on 'Modelling Demographic Processes in Marked Populations: Proceedings of the EURING 2013 analytical meeting'. In October we published a Virtual Issue showcasing some of the Open Access papers that we have published over the previous year, to coincide with Open Access week (methodsinecologyandevolution.org/virtualissues). To remind you, as a BES member you get a 25% discount on our Open Access fee if you are the first or corresponding author of a primary research paper.

New Associate Editors

We have recently recruited a new group of Applications Editors who will deal solely with our Applications papers, while considering the implementation of methods as computational tools. So far we have Rich Fitzjohn from Macquarie University, Ruth King from the University of St Andrews, Brian O'Meara from the University of Tennessee, Knoxville, Timothée Poisot from the University of Canterbury, and Greg McInerny from the University of Oxford. We would also like to welcome 2 new Associate Editors to the team: Jason Matthiopoulos from the University of Glasgow, and Oscar Gaggiotti from the University of St Andrews.

Look out for the *Methods* Editors at the BES/SFE Annual Meeting in Lille, and do say hi!

Samantha Ponton
Assistant Editor
coordinatormethodsinecology andevolution.org

Journal of Ecology

www.journalofecology.org
@JEcology

Journal of Ecology @ the BES/SFE Annual Meeting

The *Journal of Ecology* team are all looking forward to the BES & SFE joint Annual Meeting in Lille. Editors Mark Rees and Richard Bardgett will be attending the meeting. As will Managing Editor, Andrea Baier and myself. If you have any questions about the *Journal* then stop by the British Ecological Society's stand to speak to Andrea or I.

The *Journal* Editors and the BES are pleased to announce that Dr. Dario Fornara has been awarded with *Journal of Ecology's* "Recognition of Achievement for a Research Paper" for his paper "Plant functional composition influences rates of soil carbon and nitrogen accumulation", which was published in the *Journal* in 2008. Dr. Fornara will be speaking about his current research at the Annual Meeting.

Special Features

The *Journal* will be publishing two Special Features online towards the end of 2014. Firstly in issue 102:6 Osvaldo Sala and Fernando Maestre have Guest Edited a Special Feature on grassland-woodland transitions.

In issue 103:1 the *Journal* will publish a Special Feature on forest resilience & tipping points. This Special Feature is Guest Edited by Christopher Reyer,

Niels Brouwers, Anja Rammig and Fanny Langerwisch. This Special Feature is based on two symposia at INTECOL 2013.

COMPADRE Plant Matrix Database

The *Journal* will be publishing a paper on the COMPADRE Plant Matrix Database at the start of next year. The publication of this paper will coincide with the launch of the database, which the authors of the paper describe as a "data-rich and ecologically relevant resource for plant demography". Keep your eyes peeled for both the paper and the database.

Virtual Issue in honour of Deborah Goldberg

At the end of 2012 *Journal of Ecology* launched an annual series of Virtual Issues recognising the career and expertise of seminal ecologists. To date we have published Virtual Issues on former *Journal of Ecology* Executive Editor Mike Hutchings and Phil Grime. This year the *Journal* Editors have chosen to honour the work of Deborah Goldberg. The Virtual Issue can be accessed on the *Journal's* homepage. Deborah has also kindly written a post on the *Journal* blog and Executive Editor David Gibson interviewed Deborah at ESA. This interview is available to listen to on the *Journal's* SoundCloud channel, which can be accessed via our blog (http://jecologyblog.wordpress.com/).

Welcome to the Editorial Board

We would like to welcome Shurong Zhou (Fudan University) to the Editorial Board. We would also like to take this opportunity to thank all of the members of the Editorial Board for their commitment to the *Journal* throughout 2014. I look forward to meeting those Associate Editors who will be attending the Annual Meeting in Lille.

Lauren Sandhu
Assistant Editor
admin@journalofecology.org

Journal of Animal Ecology

www.journalofanimalecology.org
@AnimalEcology

In 2005, *Journal of Animal Ecology* set-up its first editorial board to help the editors handle the rise in submissions as the Journal became more successful. At that time it was agreed that editors and Associate Editors would serve no more than three consecutive 3-year terms on the editorial board. Sadly this means that those Associate Editors who have been with us from the start have now left the board. We would like to thank: Stuart Bearhop, Stan Boutin, Corey Bradshaw, Jean Clobert, Andre Gilburn, William Gurney, Murray Humphries, Rolf Ims, Bror Jonsson, Simon Leather, Kate Lessells, Atle Mysterud, Stuart Piertney, Joseph Rasmussen and Henri Weimerskirch. They have all been incredibly supportive, hard-working and loyal Associate Editors and they leave the Journal with our utmost thanks.

We have also recently said farewell to the Journal's Assistant Editor, Peter Livermore who left the BES in August for a new editorial position at the Royal Society of Chemistry. During his 2 years with us Peter instigated many exciting initiatives and we wish him all the best in his role.

Simon Hoggart
Assistant Editor

BES PUBLICATIONS TEAM

The current BES Publications team are pictured below.

Catherine Hill, Head of Publications

Andrea Baier, Deputy Head of Publications

Liz Baker, Deputy Head of Publications

Erika Newton, Assistant Editor, Journal of Applied Ecology

Jennifer Meyer, Assistant Editor, Functional Ecology

Samantha Ponton, Assistant Editor, Methods in Ecology and Evolution

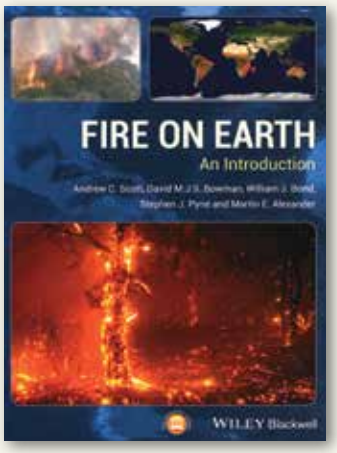
Lauren Sandhu, Assistant Editor, Journal of Ecology

Simon Hoggart, Assistant Editor, Journal of Animal Ecology

Kate Harrison, Assistant Editor

BOOK REVIEWS

The book reviews are organised and edited by **Peter Thomas and Sarah Taylor**



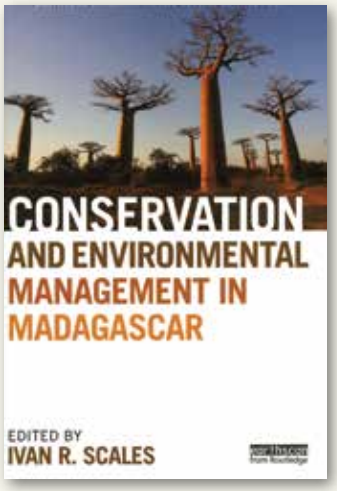
Fire on Earth: An Introduction

Andrew C. Scott, David M.J.S. Bowman, William J. Bond, Stephen J. Pyne & Martin E. Alexander (2014) Wiley-Blackwell, Chichester. £85.00 (hbk), £39.95 (pbk), £25.00 (eBook)

ISBN: 978-1-119-95357-9 (hbk)
ISBN: 978-1-119-95356-2 (pbk)
ISBN: 978-1-118-75894-6 (eBook)

There are a number of recent fire books around, so what separates this from the others? Firstly it is written by five authors from across the world, all acknowledged experts in their area. This is reflected in the range of examples and topics included – wider than most fire books. So for example, the first of the four sections (almost a quarter of the book) deals primarily with the geological history of fire. Part three deals at length with anthropogenic fire over almost the same number of pages. Woven around these subjects there is information in part two on the effects of fire on plants and animals and their various adaptations for coping, and in part 4 the science of predicting and therefore coping with fire behaviour. The emphasis is on the broad global picture and it does this very well. In many parts you can see the particular interests, and often the writing style, of the different authors but the whole thing hangs together as a cohesive story. There are some peculiarities; for example the effect on human-caused climate change is dealt with in Chapter 10, while Chapter 12 'Building on the history of the current Anthropocene' discusses our relationship with fire but stops short of integrating climate change except for a few words in the final section. It would have been instructive to see how the authors saw the interaction between these. There are a few little niggles such as rather unhelpful figure legends and some peculiar punctuation but these are far outweighed by the abundance of relevant figures in full colour and the wide global perspective across the book. Despite the title including *An Introduction*, this will be most appreciated by senior undergraduates and the like who have some science or engineering under their belt; for them it will be a huge source of fascinating information.

Peter Thomas



Conservation and environmental management in Madagascar

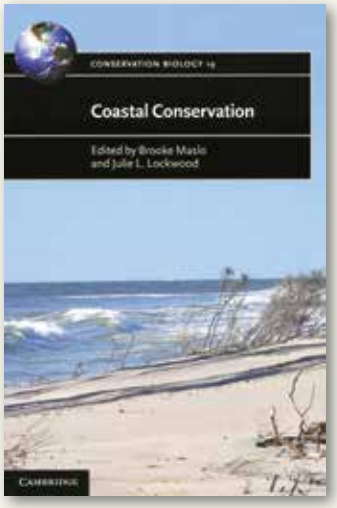
Edited by Ivan R. Scales (2014) Routledge, Abingdon. £85.00 (hbk)

ISBN 978-0-415-52877-1 (hbk)

Madagascar is one of the most biologically diverse areas on Earth, not because of an unusually large number of species, but because of the remarkable level of endemism, which is estimated to be around 80% across all groups. Such a special place has obviously attracted a great deal of interest over the years and there are several books, as well as many papers, on aspects of conservation there. This book of 15 chapters by 20 authors is different. It tries to look at both the misinformation that has underlain much of the received wisdom on conservation in Madagascar, while also examining in considerable detail the politics of conservation and environmental management. Madagascar is a very poor country with over 20 million people and what seems like permanent political instability, exacerbating the dilemma over how to achieve conservation objectives and still protect the rights and aspirations of the native population. Given the level of tertiary education there, the book has understandably few Malagasy authors, but all the authors show a general sympathy with the importance of engaging with the Malagasy people in making conservation work.

Whilst the chapter explaining the mainly geological drivers for such a high level of speciation seems uncontroversial, the chapters on the changes in forest cover and the impact of early human activities address head on problems with inadequate estimates of forest cover, and the way in this has affected conservation judgements and decisions. Probably the most important parts of the volume are the chapters in Section 3 on the interaction between politics, conservation and environmental management. Whilst details of the early history of human activities are limited, the impacts of colonial rule by the French up to independence in 1960 are clearly outlined. Later chapters examine the basis of current conservation activities spending hundreds of millions of dollars, provide a highly critical analysis of the transfer of natural resources to local management (described as "a dream of optimistic social engineers whose main function is to legitimate conservation policies to a wider audience by giving it a more ethical colouration") and the ways in which a sudden expansion of protected areas has undermined their major objectives by spreading resources too thinly. In considering current management problems Scales suggests that nature tourism cannot be a panacea for conservation, whilst Neimark and Tilghman conclude that bioprospecting is not a sustainable alternative to the profits from logging and mining. An interesting chapter highlights how Western conservation values do not integrate well with Malagasy cultures, and suggests that colonial attitudes persist in many international conservation organizations. In the final summary chapter, Scales sets out some priorities for the future and reiterates his earlier theme that a simplistic narrative leads to the wrong questions and conclusions. In Madagascar conservation will be messy and complex, and will only succeed with the enthusiastic support of the rural poor who use the protected areas. In summary, a useful book.

David Walton



Coastal Conservation (Conservation Biology Series Number 19)

Edited by Brooke Maslo & Julie L. Lockwood (2014) Cambridge University Press, Cambridge. £65.00 (hbk), £35.00 (pbk)

ISBN 978-1107022799 (hbk)

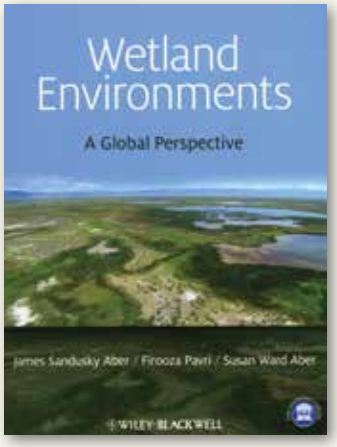
ISBN 978-1107606746 (pbk)

Shorelines are literally the frontline of climate change impacts, but this of course is only part of a more complex set of pressures placed upon the narrow zone of ecosystems found at the interface between sea and land. *Inter alia* an increasing part of the world population is moving to the coast, catchment change impacts nutrients and sediments in rivers entering coastal systems and we overexploit near shore marine resources. This book is a timely and well written stock-taking of coastal biodiversity, the ecosystem services it delivers and human impacts. It is well worth reading by the specialist and more generally interested reader; while the individual chapters are potentially useful as teaching material.

The first chapters of the book provide a habitat based survey of biodiversity status covering mangroves, beaches and dunes, oyster reefs, seagrass meadows, saltmarshes and South Africa dune forests. However, I should churlishly point out that, whilst these habitat accounts together give a useful overview of global costal system, this survey does leave gaps. For example, intertidal sediments, lagoons, hard cliffs and soft cliffs are not covered. Thematically, I was surprised more was not said about the role of sediment dynamics in shaping the ecology of sedimentary habitats and the damaging effects of disrupting them.

Other chapters of the book use case studies to illustrate the way that specific human impacts, including invasive species, climate change, oil spills and overexploitation, impact coastal systems. This includes a very interesting chapter on the ways in which the Exxon Valdez oil spill has over varying timescales impacted marine vertebrate populations. The chapter I found most interesting concerned overexploitation of the horseshoe crab (*Limulus polyphemus*) as bait for conch and eel fishing in the US. It is a story of human folly as this fishery only grew due to the collapse of the over exploited Atlantic cod fishery. Whilst current horseshoe crab exploitation is unsustainable for human uses, the impact on red knot and other migratory waders that feed on the pulse resource of crab eggs has been disastrous. There are some sobering reflections on the relationship between evidence, the public, vested interests and legislatures in this chapter.

John Hopkins



Wetland Environments: A Global Perspective

James Sandusky Aber, Firooza Pavri & Susan Ward Aber (2012) Wiley-Blackwell.

£90 (hbk), £42.50 (pbk)

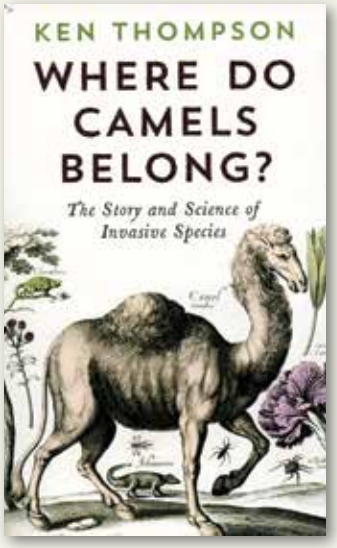
ISBN 978-1-4051-9842-4 (pbk)

ISBN 978-1-4051-9841-7 (hbk)

Having spent twenty four years conserving wetlands, eight on the mires of Dartmoor I, like the authors of this lucid and attractive book, share a passion for them. Unfortunately, too many people regard wetlands as dank, dangerous places inhabited by blood-thirsty hounds! Their views would surely be changed by this book, even if they only looked at one plate; the breath taking Landsat image of the Lena River delta, Siberia. This is an excellent introduction to global wetlands, with an emphasis on palustrine, i.e. non-tidal systems. It has a clear structure, with lots of images and diagrams positioned with the text, making for an easy read. It's also thorough, with helpful (sometimes amusing) annotation of images, and a glossary (though some key words are missing from the index). As well as describing the wildlife, vegetation, soils and hydrology of wetlands, there are chapters on services and valuation, environmental cycles and feedback, conservation and management, restoration, and governance. There is something new to learn from each chapter, for example, the Lake Mono bacterium that can use arsenic in place of phosphate, with implications for life on other planets.

Having attempted a classification of the Dartmoor mires using satellite imagery in 1999, I was intrigued by the chapter on methods in wetland research. In the years since my partially successful efforts, remote sensing has become a cheaper and more powerful tool, and the authors are clearly expert users of blimps and kites. I was surprised, therefore, that they did not mention 'Unmanned Aerial Vehicles', but perhaps that underlines the pace of (remotely sensed) change. I have two criticisms: one, the bias towards North America, betrayed at one point by the reference to the Wildflower & Wetlands Trust; and two, the case studies, which though global, could have included more on the different approaches to conservation. For example, the restoration of the Iraqi marshes is a monumental achievement which Dr Mike Moser, formerly of Wildfowl & Wetlands Trust, has had a hand in. We need to hear success stories like this if more battles to conserve wetlands are to be won.

Simon Bates



Where do Camels Belong? The Story and Science of Invasive Species

Ken Thompson (2014) Profile books, London. £10.99 (pbk)

ISBN 978-178125-1744 (pbk)

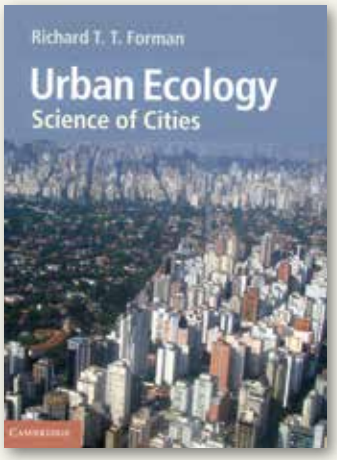
ISBN 978-184765-9958 (eBook)

What book do you pack for a five week expedition to the jungle, when you have to carry everything on your back and are likely to read it twice? The main thing I felt as I cast my eyes across the pages was "damn, this is the book I wanted to write!" Thompson reviews the case for the native-alien paradigm of 'native good – alien bad' (said in a Frankenstein voice). Four invasive species case studies on the brown tree snake, zebra mussel, tamarisk and purple loosestrife, are used to great effect to examine the myths of invasions and whether these species really are guilty as charged. I do not want to spoil the plot line so you will have to read it for yourself to find out the answer. And of course the camel is considered too.

Thompson crafts an interesting if slightly skewed argument for a global conspiracy to promote and maintain the negative view of alien species, and questions the way academic researchers have moulded them to their own needs in the 'alien invasions industry.' I have to admit that I am totally guilty of jumping on the invasive species bandwagon myself when it comes to justifying research funding, and I credit phytophthora for the success of rhododendron-related bids. Pause for thought: getting an ecology grant funded by NERC is like extracting blood from a stone and in the days of 'pathways to impacts' can we really blame researchers for latching onto something that makes a project more fundable, especially when invasive species provide an excellent way to demonstrate impacts that stretch beyond the immediate academic community?

This book will be useful to undergraduates, postgraduates and lecturers alike who are interested in invasion biology and the political commentary that underpins it. As an academic text, my only gripe was the lack of citations in the text, although a detailed notes section at the end of the book provided source information for each chapter with description of the section to which it relates. And, ignore the clanger of the spelling error in the opening sentences of the book. I have copies on order for the library and it will make a great accompaniment to the rant I give in my conservation lectures. Its accessible style also makes it a good citizen science book. So, if you want something entertaining, informative and natty to read when you are sweating buckets in a fly infested camp – this is the book for you.

Sarah Taylor



Urban Ecology: Science of Cities

Richard T.T. Forman (2014) Cambridge University Press, Cambridge. £75 (hbk), £35 (pbk)

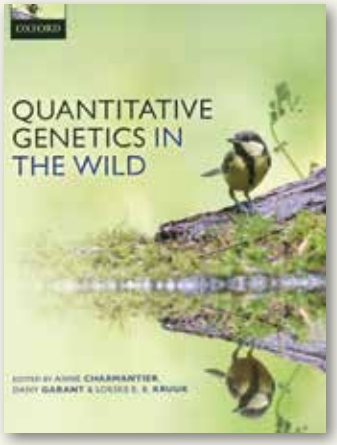
ISBN 978-1-107-00700-0 (hbk)

ISBN 978-0-521-18824-1 (pbk)

According to United Nations statistics there have been more people living in urban than rural areas worldwide since 2009. Urban areas are not just brick, concrete and tarmac, but are being increasingly recognised as housing many ecological niches with rich floral and faunal populations, and providing carbon sinks as well as being major carbon producers. In other words urban ecology is coming of age as is reflected in Forman's substantive and innovative book. It is divided into three parts. The first, entitled 'Framework', contains three chapters that consider the development of urban ecology, the various ecological models, such as patch-corridor-matrix, and change over time. Each of the six chapters of Part II examines a specific ecological characteristic in detail. It is encouraging that there is emphasis on the non-living elements of urban ecology, notably soil, air (including microclimate) and water systems (e.g. groundwater, sewage, and water bodies, such as ponds, streams and constructed wetlands). All play a part in the urban ecosystem, all are substantially affected and are affected by human activity, and all provide a habitat for micro- and macro-organisms. Two further chapters specifically examine habitats, and plants and animals. There is a wealth of detail on habitat diversity, invasive and cultivated plants, population change, fragmentation, the adaptation of both plants and animals, animal populations in relation to vegetation, and animal movement. The final section considers specific habitat types, reflecting the diversity, value and often transitory or ephemeral nature of human constructions. The chapter on 'human structures' involves the infrastructure of urban environments as habitat and catalyst: roads, railways, walls, house plots including yards and gardens, and buildings. There is detail at scales from the micro-scale (e.g. cracks) to the macro-scale (e.g. road systems). Different types of urban areas are considered in the penultimate chapter; the focus is on residential, commercial and industrial areas and each of these categories is as diverse as the habitats it provides. Consider, for example, the contrasts between apartment blocks, large houses with gardens, high investment versus low investment areas, densely populated versus lightly populated areas and land-use type such as residential, retail, industrial. The final chapter focuses on green spaces, corridors and integrated systems. It includes urban agriculture, as well as parks and other large green spaces (cemeteries, golf courses, quarries, landfill sites and airports) and the value of connection through corridors and networks. Instead of a conclusion, Forman presents an epilogue which emphasises the diversity, excitement and potential of urban ecology.

Overall, this book brings together a wide range of material and points are well illustrated with examples from cities worldwide in association with black and white photographs and diagrams. At £35 and 462 pages it is a worthwhile and accessible addition to the literature and should inspire further research.

Antoinette Mannion



Quantitative Genetics in the Wild

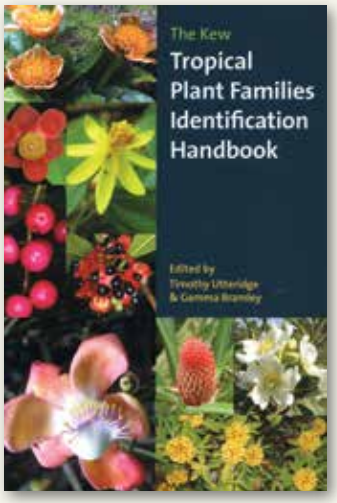
Edited by Anne Charmantier, Dany Garant & Loeske E. B. Kruuk (2014)

Oxford University Press, Oxford. £37.50 (pbk)

ISBN 978-0-19-967424-4 (pbk)

Variety, especially when genetically determined, is not only the spice of life, but also the raw material of evolution. But it also generates challenges in many areas of biology, not least for taxonomists facing identification problems in the field. Genetic diversity, however, can influence many aspects of a species' biology besides its morphology. Physiology, and hence behaviour, varies within species, and the study of the genetic basis of complex traits (quantitative genetics) has become a key area of biological research development. There have been major advances recently in molecular genetics and statistics which, when coupled with the development of large and long-term data sets by field biologists, have permitted the field of quantitative genetics to expand into the wild, thus impacting upon evolutionary ecology. In this edited volume a number of questions are approached, all relating to the application of genetic studies to populations in natural environments. Topics include the heritability of traits in vertebrate populations, the influence of genetics on mating systems and sexual selection, as well as behaviour patterns in individual organisms. The relationship between genetic constitution and age-related decline in fitness will interest many older ecologists. Also, does the genetic make-up of a parent affect its behaviour and hence the fitness of its progeny? The interaction of plants and animals in pollination activities affects both the gene flow in plants and the success of the pollinating organism, so here two genetic systems interact. Topics covered range in the organisms discussed, from plants and arthropods to large ungulates, and the scale of analysis, from molecular levels to field populations. It is in the crossing of these barriers between separate research areas and the integration of such disparate fields that this book is most successful. There is, therefore, material here that will interest a range of research workers, from those concerned with molecular genetics right through to field ecologists and wildlife managers.

Peter Moore



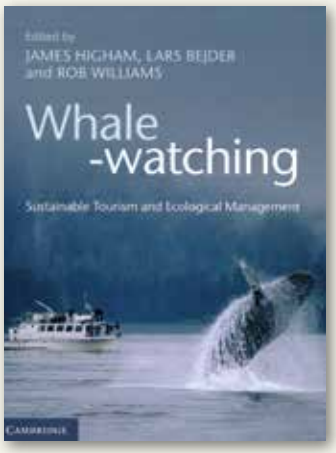
The Kew Tropical Plant Families Identification Book

Edited by Timothy Utteridge & Gemma Bramley (2014) Royal Botanical Gardens, Kew, Richmond. £20.00 (pbk)

ISBN 978-1-84246-381-9 (pbk)

In less than 200 pages this book covers 83 of the commonest and most economically important tropical families. Each is covered on two pages with the same format, including text in morphology and ecology, plus the main characteristics that distinguish it from other families. There is also a world distribution map and a page of high-quality colour pictures mostly of typical leaves, flowers and fruits. The book originates from a Kew identification course, and that's certainly the emphasis, but it does have its more general uses. There are a number of important European families here that we don't necessarily think of as being tropical – such as the willows Salicaceae and heathers Ericaeae – which will help students gain a broader perspective. And there are families that are barely represented in Europe, such as the Rubiaceae where we have just a bunch of bedstraws, woodruffs and the like. But globally the family contains 132,000 species over 620 genera and includes the main source of our favourite drug, coffee. Again, good for adding perspective. Not to mention all the other families not found in Europe that have neat adaptations to their environments. So while this might not be at the top of your Christmas list, for its price and its quality it really should be in your library.

Peter Thomas



Whale-watching: Sustainable Tourism and Ecological Management

Edited by James Higham, Lars Bejder & Rob Williams (2014) Cambridge University Press. £70.00 (hbk)

ISBN 978-0-521-19597-3 (hbk)

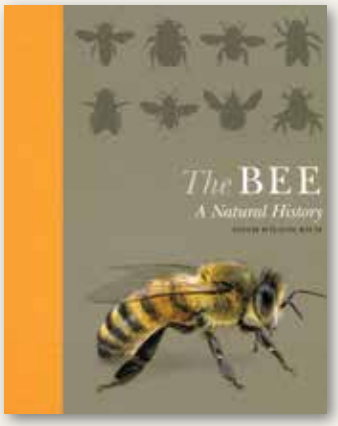
Since maritime communities first came to realise that more money could be made from using whales as a tourist attraction than from killing them, whale watching has taken off on an almost industrial scale. It has not brought an end to commercial whaling, of course, and there will always be those who insist on retaining their tribal rights to slaughter these magnificent animals or to kill them for "scientific purposes" and, incidentally, to subsequently profit from their carcases, but it has gone a long way towards seeing a recovery in seriously depleted whale populations in all the world's oceans. It has even led to the survival of some coastal communities whose traditional way of life, dependent upon the sea, was equally at risk of

extinction. It is estimated that whale watching now generates a global income of some $US 2 billion annually, with in excess of 12 million participants and generating at least 13,000 jobs. It would also seem that there is the capacity to see these figures substantially increased. It is also clear that, despite claims to the contrary, whale hunting and whale watching are not compatible, and nations that continue the former generally experience reduced income from the latter. But "watching" and interacting with whales can have negative as well as positive effects, and these need to be understood and even regulated if the best interests of the animals concerned are to be met.

The concept of "ecotourism" is critically reviewed in the first paper of this multi-author text, which concludes that much that is touted as "environmentally friendly" is, in fact, causing harm to human as well as animal populations, and physical damage to pristine and vulnerable habitats. Animal observation, it is clear, should not be equated to species conservation. In the chapters which follow, human attitudes to whales (and whaling) and future prospects for cetaceans generally are explored in numerous essays and case studies. Of particular significance is the view that whale watching can only truly be regarded as a "success" if it has an educational component that results in long-term changes in the behaviour and attitudes of the participants – something that is clearly extremely difficult to measure.

This is a well researched and sobering look at a modern conservation phenomenon, with ideas ranging far and wide from those the title might suggest. As such, it could be wisely read by all concerned with any form of wildlife-related tourism and with conservation projects involving public participation.

Ian Lancaster



The Bee. A Natural History

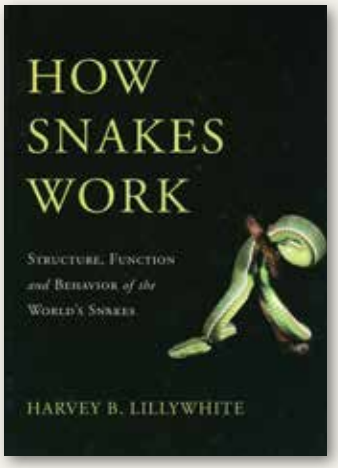
Noah Wilson-Rich, with co-authors Kelly Allin, Norman Carreck & Andrea Quigley (2014)

Ivy Press, Lewes, UK. £19.99 (hbk)

ISBN 978-1-78240-107-0 (hbk)

This vast subject has been tackled by providing a brief overview of a very wide range of bee-related topics. Much of the book consists of attractively illustrated double-page spreads, each on one particular topic. These are mostly biological, such as pollination, thermoregulation, sociality and mating systems, but other aspects are included, such as patron saints of beekeeping and political symbolism. The book aims to provide "an accessible, illustrated look at the human-bee relationship over time" and it achieves this well. Technical terms are explained and the series of separate topics allows the reader to browse easily. One of the chapters provides a "directory" of descriptions of a wide range of species of bee, accompanied by impressively detailed photographs of specimens, eye-catchingly enlarged to about 10 cm long. A photograph of Chinese farmers climbing fruit trees to pollinate each flower by hand because of a shortage of pollinators is particularly striking and serves as a warning that the ecological role of bees should not be overlooked. There is particular coverage of the honey bee (*Apis mellifera*) and its diseases and other threats, together with an up-to-date and well-balanced coverage of the topical issue of bee decline. This book emphasises the value and fascination of bees and would suit a non-specialist reader.

William Kirk



How Snakes Work: Structure, Function and Behaviour of the World's Snakes

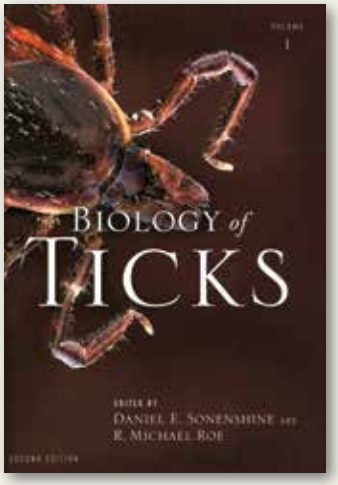
Harvey B. Lillywhite (2014) Oxford University Press. £35 (hbk)

ISBN 978-0-19-538037-8 (hbk)

This exuberant book is a celebration of the general biology of snakes and the author is clearly enthusiastic about them and very familiar with every aspect of their structure, function and biology. It is beautifully illustrated with many colour photos and diagrams. The text is clear and captivating, but also with authority and a wealth of references. The chapter headings clearly indicate the scope of the book, starting with evolutionary history and classification and then including feeding, locomotion, temperature control, structure and function, sensory abilities and finally courtship and reproduction.

Several of these topics touch on ecological issues, such as methods of predation or reproductive abilities, but unfortunately much of the content is only of marginal interest to BES members. Of course, if snakes feature in your studies, then this book will provide important background understanding, but otherwise this is a book for general enthusiasts. By today's standards the price is quite accessible and the standard of production is excellent.

Mark Young



Biology of Ticks (Volume 1) (2nd ed.)

Edited by Daniel E. Sonenshine & R. Michael Roe (2014) Oxford University Press. £97 (hbk)

ISBN 978 0 19 974405 3 (hbk)

Biology of Ticks (Volume 2) (2nd ed.)

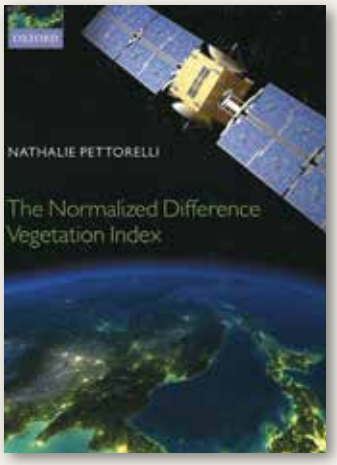
Edited by Daniel E. Sonenshine & R. Michael Roe (2014) Oxford University Press. £97 (hbk)

ISBN 978-0-19-974406-0 (hbk)

Ticks have recently become the focus of much attention, from among others medical scientists, immunologists, geneticists and ecologists. Their role as vectors of serious diseases has raised their status as a substantial influence on animal populations, as well as a significant threat to humans. Consequently, many studies have contributed to a huge increase of our understanding of all aspects of their biology and this has prompted this 2nd edition of two volumes designed to collate all that is

known about them. Volume I has chapters relating mainly to structure and function and so is of less importance to ecologists than the Volume II. Nevertheless, in the context of our need to understand the basic biology of our study animals, this is an important book. It is very detailed and rather dense in places, with many references and technical details, and many authors have contributed to it. This allows it to be authoritative across a wide range of topics. Volume II will be of prime importance to ecologists, with chapters on the ecology of nidicolous and non-nidicolous ticks, genomics, control methods and acaricide resistance and an account of the impact of important diseases. The controversy over the role that tick-borne disease may play in the regulation of grouse populations, for instance, indicates clearly why a better understanding of tick biology is important. However, the price of £97 per volume will take the books beyond the pocket of many ecologists.

Mark Young



The Normalised Difference Vegetation Index

Nathalie Pettorelli (2013) Oxford University Press, Oxford. £55.00 (hbk)

ISBN 978-0-19-969316-0 (hbk)

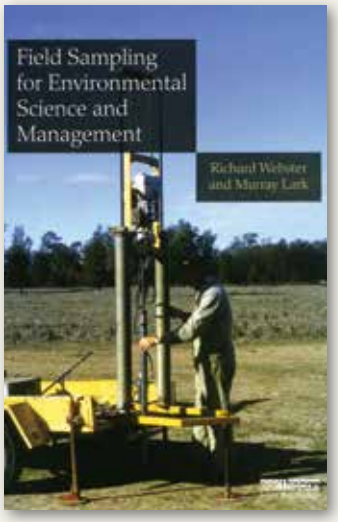
Remote sensing is the acquisition of information by the use of a sensing device separated from the target, and offers incredible opportunities to revolutionise ecological and environmental surveys. Speaking as someone who has attempted to use remote sensing as a means of mapping rhododendron, discipline-specific texts can be difficult to read and tend to be littered with technical terms and mathematical equations. This 'how to' practical guide explains the principles and potential applications in a way that is accessible to a biologist new to this field of study and would have made my transition into this discipline much easier.

The book is focussed on the normalised difference vegetation index (NDVI), which was devised in the 1970s and uses information gathered from the red and near-infrared parts of the electromagnetic spectrum. It is one of 28 vegetation indices detailed in Table 2.2 of Pettorelli's book, along with a nice review of the history of vegetation indices. Given the many options available, why focus a book on NDVI? The power of NDVI is its ability to separate out living 'green' from dead 'brown' matter. For example, I used it as a means of distinguishing brown beech leaves from lush green holly leaves in winter. Since 1990, 693 articles on ecology and NDVI have been published and cited more than 12,500 times. This reflects the ease of calculation and the array of vegetative properties (e.g., foliage condition) and processes (e.g., evapotranspiration and primary productivity) that can be extrapolated at a range of scales.

Chapters 4 to 8 provide case studies on the application of NDVI to climate change science, environmental monitoring, plant ecology, wildlife management and conservation biology. However, NDVI is not a panacea that can solve all our problems. Table 9.1 provides a comprehensive list of published studies that failed to link NDVI to the target of interest. Failures can be attributed to complexity of interactions to ecosystems (trophic levels, parasites) and spatial considerations (scale, resolution and representativeness). Hence NDVI is not always the most appropriate choice. Few studies have been carried out in freshwater and marine environments and this is highlighted as future direction.

This practical text provides a useful bridge between two disciplines, and will be useful for remote sensors wanting to branch into ecology and ecologists wanting to utilise remote sensing tools. It is an upper level text that will be useful to undergraduate students doing final year projects, graduates and specialists alike.

Sarah Taylor



Field Sampling for Environmental Science and Management

Richard Webster & Murray Lark (2013) Earthscan from Routledge, Abingdon. £85.00 (hbk), £29.99 (pbk and Kindle edition)

ISBN 978-1-84971-367-2 (hbk)
ISBN 978-1-84971-368-9 (pbk)
ISBN 978-0-203-12864-0 (eBook)

A Primer of Ecological Statistics (2nd ed.)

Nicholas J. Gotelli & Aaron M. Ellison (2013) Sinauer, Massachusetts. £38.99 (pbk)

ISBN 978-1-60535-064-6 (pbk)

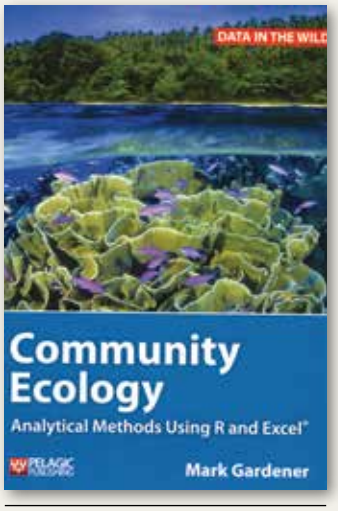
These two texts both deal with the nitty gritty of statistical design, but are very different beasts, and represent the divergent ways in which statistical methods can be delivered. First let's compare the book covers. Webster & Lark's book depicts a man setting up a drilling rig in the field – it is very serious and applied and technical. By contrast, Gotelli and Ellison have a still life drawing of an ant carrying a piece of paper with a statistical symbol written on it to a table on which there are various artefacts including a jug shaped like a rooster – it is silly, evocative and symbolic. I think we can judge a book by its cover in both these cases.

Flicking through Webster & Lark, I was overwhelmed by pages and pages of equations that caused my eyes to glaze over. The authors of this text are both statisticians, and this is evident in the traditional mathematical approach that has been adopted. The book does an excellent job of explaining how to design sampling strategies to ensure valid representation of inherently heterogeneous environmental properties. Mathematical principles are illustrated through the use of greyed out boxes with case studies and examples, many of which utilise datasets from the 1970s (one dated back to 1951), and there is a strong emphasis on soils. In my view, the text is aimed at a mathematical audience, and would provide good insight for mathematicians looking to carry out environmental applications,

but I feel it would overwhelm the average environmental undergraduate student and would just rubber stamp the perception of statistics as scary and sadistic.

By contrast, Gotelli & Ellison have designed their textbook with number-phobic ecologists in mind. Key designs and analyses typically encountered by ecologists are covered, but there is no equivalent to the geostatistics chapter of Webster & Lark (e.g., kriging). Mathematical equations are still included in the text, but they do not dominate proceedings and footnotes are included on technical statistical terms. Inclusion of biographies on the people who developed the tests humanise the subject matter. This kind of whimsical treatment may annoy some people who would feel it is irrelevant to the mathematical principles being delivered. The examples are ecologically focussed, and draw on biodiversity issues, and are therefore more relevant to an ecologist than the soils case studies used in Webster & Lark. However, it has to be remembered, that Webster & Lark were not specifically targeting an ecology audience. In summary, I feel the *Primer* would be an excellent introduction for undergraduate ecologists wanting to gain statistical skills, and the new chapters on estimating species diversity and species abundance are welcome additions.

Sarah Taylor



Community Ecology: Analytical Methods Using R and Excel

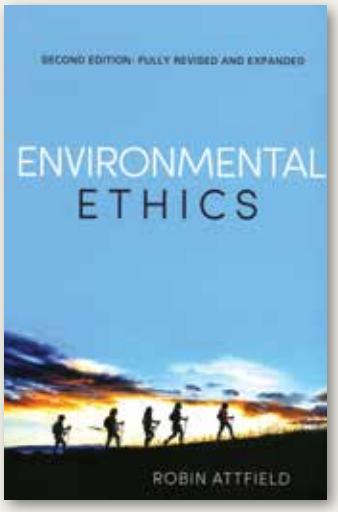
Mark Gardener (2014) Pelagic Publishing, Exeter. £39.99 (pbk), £69.99 (hbk)

ISBN 978-1-907807-61-9 (pbk)

ISBN 978-1-907807-62-6 (hbk)

The use of the word 'community' in the title may be a little confusing. Some would have preferred the term guild, because its application here is often related to the analysis of interactions between species within a particular taxonomic or trophic group, such as plants, butterflies, canopy herbivores, birds, etc. Fifty years ago, the development of massive computers first provided a tool for such analysis, leading to association analysis, similarity and cluster analysis, and ordination techniques. Then came the development of diversity indices and rank abundance models. Such analytical methods have now become standard for a whole range of different data sets, and this practical manual provides advice on how to operate them from a simple internet-linked system. The two prerequisites, as indicated in the title, consist of Microsoft Excel, which is already used by most researchers who have to deal with tabulated data sets, and a freely available program, R, which can be downloaded from the internet. The very clear and full explanation given in this book provides even the most computer illiterate user with a basis for understanding and assembling data on Excel, and then the means by which the R program can be obtained and applied to the data. It then works through all the main methods of multivariate statistics and diversity indices that are used by ecologists and explains in painstaking and illustrated detail precisely how to operate the program on the Excel files and analyse the data. The author must be congratulated on the clarity of his explanations and instructions, which even provide means of displaying the final analyses in graphic form. This should prove useful both at undergraduate and research level.

Peter Moore



Environmental Ethics: An Overview for the Twenty-first Century (2nd ed.)

Robin Attfield (2014) Polity Press, Cambridge. £16.99 (pbk)

ISBN 978-0-7456-5253-5 (pbk)

Environmental ethics is not only an important subject in its own right, but one with implications for all ecologists and conservationists who aspire to good practice and the wider context of understanding and managing natural systems. This book is primarily meant for students, but I believe would provide most of us with thoughtful recognition of how and why we take certain actions and accept certain premises. This is a heavily revised version of the original edition published in 1999 and amongst many changes is a new chapter on climate change, sections on ecofeminism and environmental aesthetics, and expanded discussions on the precautionary principle and invasion biology. With a very useful glossary and lists of useful web sites, as well as published literature, the book is also a handy reference. The periodic boxes throughout the text outlining key questions are meant for students, but provide interesting tests of one's own beliefs! As in all subjects, ethics has its own definitions and language that can be hard going for the practical ecologist. Yet it does matter that we understand the debates over human stewardship, sustainable development, globalization, synthetic biology, animal ethics and geo-engineering to select only a few of the concepts covered. I cannot judge to what extent it is comprehensive in its surveys of competing theories, but for me it cast new light on environmental justice, natural capital and inter-generational equity.

David Walton

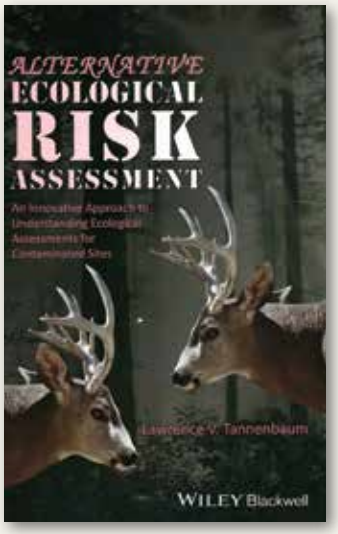
Offshoring

John Urry (2014) Polity Press, Cambridge. £14.99 (pbk)

ISBN 978-0-7456-6486-6 (pbk)

This has little to do directly with ecological matters but, as an examination of a worldwide process and its ramifications, it provides some context for activities that do bear on more general ecological concerns. The author examines the way in which companies, waste, energy, security and even what he describes as leisure activities (drugs and the sex trade) are increasingly moved to poorly governed, low tax countries where corruption and secrecy allow criminal activities to flourish. So, everything from the efforts of Amazon and other multinationals to avoid tax, the tipping of toxic wastes in West Africa, the development of drug supplies and the rendition by the CIA of captives to torture centres is covered. The stories are uniformly depressing, even frightening in the way in which governments concede to the demands of companies and criminals and justify their actions with spurious arguments. From an ecological perspective the accounts of waste disposal, energy supplies and maritime management are all important in the way they affect the impacts on ecosystems. From the point of view of democracy everyone needs to read this.

David Walton



Alternative Ecological Risk Assessment: An Innovative Approach to Understanding Ecological Assessment for Contaminated Sites.

Edited by Lawrence V. Tannenbaum (2014) Wiley Blackwell, Oxford. £45.00 (hbk)

ISBN 978-0-470-67304-1 (hbk)

This book largely consists of an extended critique of the specific ecological risk assessment methods adopted by the U.S. Environmental Protection Agency for its Superfund contaminated land remediation programme. Given this frame of reference and the often polemical nature of the arguments put forward, it is of most interest to those involved in contaminated land remediation in the US.

John Hopkins

ALSO RECEIVED

Estuarine Ecology (2nd ed.)

Edited by John W. Day, Jr, Byron C. Crump, W. Michael Kemp & Alejandro Yáñez-Arancibia (2013) John Wiley & Sons. £45.00 (pbk)

ISBN 978-1-444-33889-8 (pbk)

Expanded, full-colour updated version of an excellent text written by a team of renowned experts

Ecology and Conservation of Estuarine Ecosystems: Lake St Lucia as a Global Model

Edited by Renzo Perissinotto, Derek D. Stretch & Ricky H. Taylor (2013) Cambridge University Press, Cambridge. £75.00 (hbk)

ISBN 978-1-107-01975-1 (hbk)

The largest estuarine system in Africa has layers of official designation and protection, but global change is creating a number of challenges which are described and analysed.

Towards a Theory of Development

Edited by Allessandro Minelli & Thomas Pradeu (2014) Oxford University Press, Oxford. £37.50 (pbk)

ISBN 978-0-19-967143-4 (pbk)

Edited by a biologist and a philosopher, the book explores whether a unifying theory of development in living things is possible, including such things as the argument between preformationist and epigenetic conceptions of development.

African Natural Plant Products. Vol. II: Discoveries and Challenges in Chemistry, Health and Nutrition

Edited by H. Rodolfo Juliani, James E. Simon & Chi-Tang Ho (2013) American Chemical Society, Washington, DC. £97.00 (hbk)

ISBN 978-0-8412-2804-7 (hbk)

The proceedings of an American Chemical Society conference, providing a platform for scientists to share their interest in African plants and their useful products.

The Action Plan for Australian Mammals 2012

John C.Z. Woinarski, Andrew A. Burbidge & Peter L. Harrison (2014) CSIRO Publishing, Collingwood. AU$120.00 (hbk)

ISBN 978-0-643-10873-8 (hbk)

For each of Australia's mammals (including subspecies), this text gives a detailed summary of their population size and trend, range and biological and ecological data relevant to its conservation, as well as its current conservation status and management actions required. This represents a hugely valuable body of information and fits beside the equivalent book for birds published in 2011.

DIARY

THE SOCIETY'S MEETINGS

2014

DEC 9-12
Joint Annual Meeting British Ecological Society and Société Française d'Ecologie. Grand Palais, Lille, France. Details: http://www.britishecologicalsociety.org/events/current_future_meetings/2014-annual-meeting/

DEC 13-16
2015 British Ecological Society Annual Meeting. EICC, Edinburgh. Details http://www.britishecologicalsociety.org/events/current_future_meetings/2015-annual-meeting/

THE SOCIETY'S COMMITTEE MEETINGS 2014

DEC 09
Council (Lille, France)

OTHER MEETINGS 2014

DEC 8-9
Feedbacks on Climate in the Earth System. Royal Society, London. Website: https://royalsociety.org/events/2014/feedback-climate-system/

DEC 15-17
SEB EPA Symposium: Teaching and Communicating Science in a Digital Age. Charles Darwin House, London. More information: http://www.sebiology.org/meetings/EPA2014/teaching.html

DEC 10-12
Tropical Ecology Congress 2014. Jawaharial Nehru University, New Delhi, India. Details from: http://www.jnu.ac.in/conference/tec2014/

2015

JAN 1-2
International Conference on Plant, Marine & Environmental Sciences (PMES-2015). Details from: http://www.iicbe.org/2015/01/02/54.

FEB 10-13
3rd International Conference on Natural Resource Management for Food and Rural Livelihoods. New Delhi, India. Details from: http://www.soils.org.uk/event/241

MAR 1-6
International Symposium on Glaciology in High Mountain Asia. Kathmandu, Nepal. Details from: http://www.icimod.org/igs2015

MAR 2-6
Dirt Science – An introduction to Soil System Science. Cranfield University UK. Website: http://www.soils.org.uk/event/404

MAR 8-11
International Conference on Emerging Infectious Diseases. Atlanta, USA. Website: http://www.iceid.org/

MAR 9-12
4th Asian Dendrochronological Conference on Treering and Climate Change. Kathmandu, Nepal. Website: http://www.ada2015.org/.

MAR 9-13
39th Annual Conference Soil Society of Nigeria. Landmark University, Nigeria. Website: http://www.soils.org.uk/event/346

MAR 16-18
3rd Global Science Conference on Climate Smart Agriculture. Montpellier, France. http://csa2015.cirad.fr/.

MAR 24-26
Student Conference on Conservation Science. Cambridge, UK. Website http://www.sccs-cam.org/

APR 7-8
British Society of Soil Science, Early Career Researchers Conference. University of York. Details from: http://www.soils.org.uk/event/367

APR 8-12
17th European Orchid show and Conference. London, UK. Details from http://www.linnean.org/Meetings-and-Events/Events

MAY 26
Royal Entomological Society, Joint Insect Ecology & Insect Conservation Special Interest Group Meeting. Rothamsted Research, Hertfordshire, UK. Details from: http://www.royensoc.co.uk/content/insect-ecology-insect-conservation-joint-special-interest-groups-meeting-26th-may-2015

MAY 31-JUN 5
The 2015 Joint Meeting of the XIV International Conference on Ephemeroptera and the XVIII International Symposium on Plecoptera. Aberdeen, Scotland. Website: http://www.riverflies.org/international-joint-conference-2015

JUN 1-2
Elements, genomes and ecosystems: cascading nitrogen and phosphorus impacts across levels of Biological organisation. The Royal Society, London. Details from: https://royalsociety.org/events/2015/06/elements-genomes-ecosystems/

JUN 4-8
Ecology & Safety 2015. Elenite Holiday Village, Bulgaria. Details from: Http://www.sciencebg.net/en/conferences/ecology-and-safety/

JUN 30- JUL 3
Society of Experimental Biology Annual Meeting. Prague. Website: http://www.sebiology.org/meetings/

JUN 30-JUL 3
European Society for Ecological Economics 2015: Transformations. Leeds, UK. Website: http://www.esee2015.org/

JUL 5-10
9th IALE World Congress. Portland Hilton, Portland, Oregon USA. Website: http://www.ialeworldcongress.org/

JUL 12-16
52nd Annual Meeting of the Association for Tropical Biology and Conservation. Honolulu, Hawaii. Website: http://www.tropicalbio.org/

AUG 2-6
ICCB – ECCB 2015 Mission Biodiversity, Choosing new paths for conservation. Montpellier, France. Website: http://iccb-eccb2015.org/

AUG 9-AUG14
100th Annual Meeting 2015 Ecological Society of America. Baltimore Convention Center, Baltimore, MD, USA. Website: http://www.esa.org/esa/?page_id=2722

AUG 10-14
15th European Society for Evolutionary Biology meeting. Lausanne, Switzerland. Website from: http://www3.unil.ch/wpmu/eseb2015/.

AUG 17-19
2015 Crayfish Conference. Giggleswick North Yorkshire. Website: http://www.fba.org.uk/other-conferences-and-courses

AUG 23-27
*SER 2015 6th World Conference on Ecological Restora*tion. Manchester, UK. Website from: http://www.ser2015.org/

AUG24- AUG29
ISME15- International Society for Microbial Biology. Seoul, South Korea. Website: http://www.isme-microbes.org/.

AUG 30- AUG 4
Aquatic Biodiversity and Ecosystems 2015. Liverpool, UK. Details from: http://www.aquaticbiodiversityandecosystems.org/about-the-conference/

AUG 31-SEP 02
Biomarkers 2015 – Lab to Industry as Biosignatures to Therapeutic Discovery. Toronto, Canada. Website from: http://biomarkers.conferenceseries.com/

SEP 1-4
Royal Geographic Society Annual International Conference. University of Exeter, UK. Details from: http://www.rgs.org/WhatsOn/Whats+on.htm

SEP 2-4
Ento '15 – Insect Ecosystem Services. Trinity College, Dublin, Ireland. Details from: http://www.royensoc.co.uk/content/res-annual-national-science-meeting-international-symposium-ento-15-2-4-september-2015

SEP 14-18
14th International Symposium on Aquatic Plants. Edinburgh, UK. Details from: https://sites.google.com/site/aquaticplants2015/.

2016

SEP 25-30
Entomological Society of America. Orlando, Florida. Website: http://ice2016orlando.org/.

SEP 25-30
ICE 2016. International Congress of Entomology. Orlando, Florida, USA. Website: http://ice2016orlando.org/.

TRAINING WORKSHOPS

The Chartered Institute for Ecology and Environmental Management runs a wide variety of workshops for professional development. For further information and availability see www.cieem.net or e-mail workshops@cieem.net.

The Centre for Research into Ecological and Environmental Modelling runs a variety of workshops on a regular basis. For further information and availability see www.creem.st-and.ac.uk/conferences.php

University of Oxford Field Techniques for Surveying Mammals & Reptiles. Online course that can be taken for academic credit (10 CATS points at QCF Level 7) or not for credits. Details from http://www.conted.ox.ac.uk/ftsmr02.

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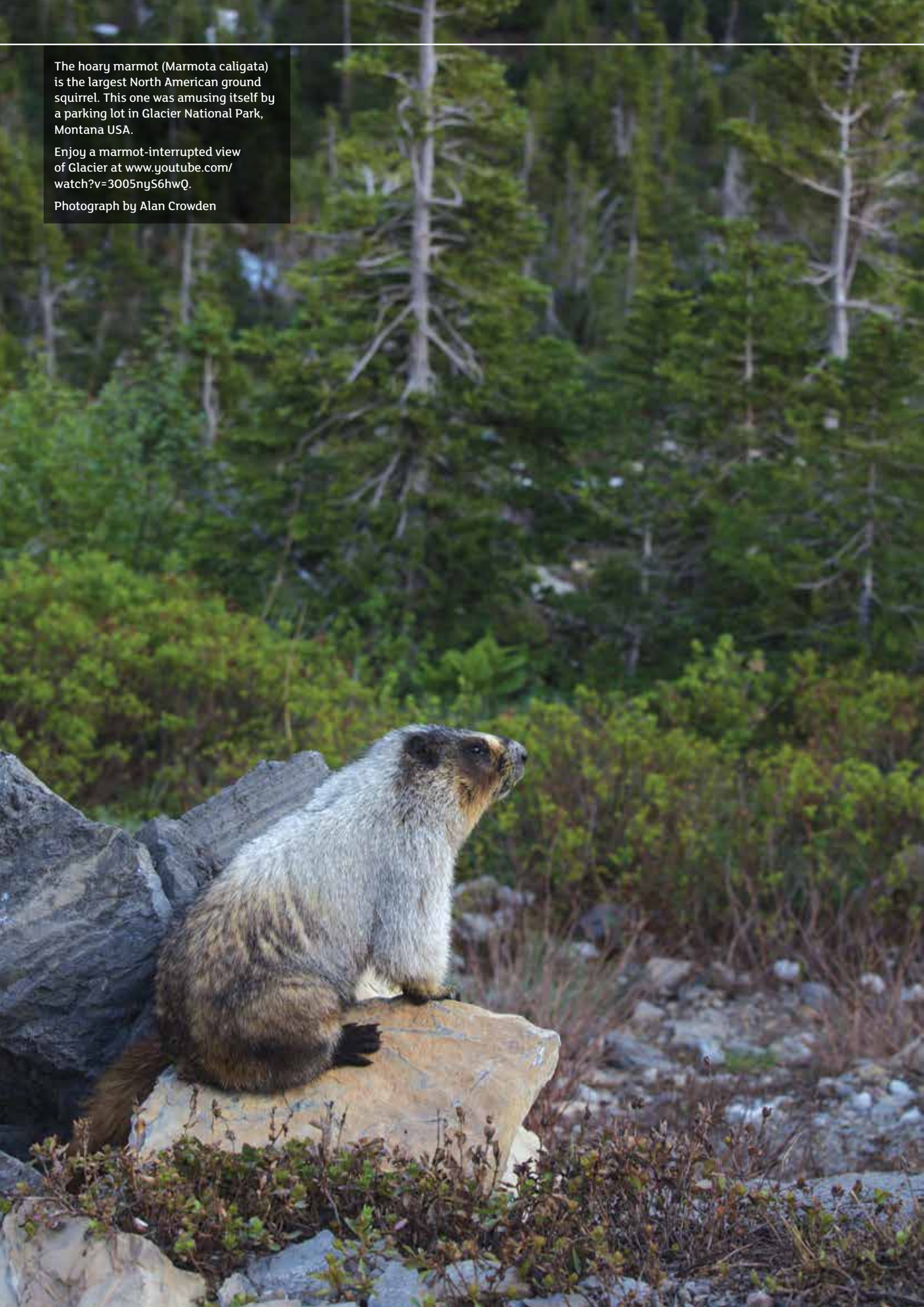

The hoary marmot (Marmota caligata) is the largest North American ground squirrel. This one was amusing itself by a parking lot in Glacier National Park, Montana USA.

Enjoy a marmot-interrupted view of Glacier at www.youtube.com/watch?v=3O05nyS6hwQ.

Photograph by Alan Crowden

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Mrs F.N. Campbell James peat coring on Borth Bog, Wales, in 1932 to compare the sediment, pollen record and plant remains with the cores associated with the forest stumps on adjacent Borth beach (spectacularly exposed during the winter storms earlier in the year). Her field assistant was her husband, the professor of Chemistry, who did much to research and reduce lead pollution in the Rheidol Valley (an early example of science into practice). The person on the right is currently unidentified. She moved from home in Brighton to Aberystwyth as an undergraduate, to one of the few universities that had accommodation for women (and one of the first to admit women). She became departmental demonstrator in 1907 and then a lecturer, starting a PhD in 1930. She died suddenly in 1936 and her results were then published by Lily Newton and Harry Godwin in the New Phytologist ('Based on the notes of F.N. Campbell James'). From a current day perspective it seems odd to remove authorship upon death. Her notes and draft manuscript are in the Hugh Owen Library, Aberystwyth library, (Julie Archer and Jonathan Davies kindly provided access, researched details and allowed the photo to be reproduced). She is the current BES president's grandmother.

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