

The **Bulletin**

YOUR MAGAZINE FROM THE BRITISH ECOLOGICAL SOCIETY



British Ecological Society

*in*FOCUS

Photo: Lin Yangchen

A student at the Tropical Biology Association field course in Uganda in 2012. The tree frog leapt onto his face as he approached it for close observation.



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April 2013

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Emma Sayer, Owen Lewis,	2016
Matt O'Callaghan	

Bulletin Editor: Alan Crowden

48 Thornton Close, Girton,
Cambridge CB3 0NG
Tel: 07801 068458
Email:
Bulletin@BritishEcologicalSociety.org

Associate Editor: Emma Sayer

Department of Environment, Earth
and Ecosystems, The Open University,
Walton Hall, Milton Keynes MK7 6AA
Email: emma.sayer@open.ac.uk

Book Reviews Editor: Peter Thomas

School of Life Sciences, Huxley
Building, Keele University, Keele,
Staffordshire ST5 5B
Tel: 01782 733497
Email: p.a.thomas@biol.keele.ac.uk

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 Peter Thomas.

Cover: Mauve stinger jellyfish *Pelagia noctiluca* in shallow water.
Photo: Emma Birdsey.

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WELCOME

So what do you think of it so far?

There is an old adage that eavesdroppers never hear any good of themselves.

So it served me right when, during last December's annual meeting, I gatecrashed a meeting between Georgina Mace and the 2012 BES Undergraduate Fellows and heard Georgina ask the bright young things what they thought of the *Bulletin*. "Not very exciting" was the first opinion offered. Luckily I resisted the temptation to run crying from the room, for subsequent comments were generally favourable and there was constructive feedback on what that particular group enjoyed reading. I did, however, take in the message that we need to work really hard to engage with our members, young and old, to make sure that we provide a lively and stimulating publication with something for everyone.

The *Bulletin* was launched in June 1970 as an informal publication through which Council could report its decisions, and which would provide a forum for members to communicate with one another, try out ideas and solicit opinion. The content and style has evolved slowly over the years but we are now working against a background of rapid change in the number of channels through which the BES communicates with the membership. Early issues of the *Bulletin* would include printed inserts notifying members of forthcoming meetings and inviting submission of typewritten abstracts by post: now the Society uses the website, emails, tweets, Facebook and goodness knows what else to invite you to join our gatherings. We remain convinced that there is a role for a printed *Bulletin* for the time being, but have been concerned that the design did not properly convey the sense of a Society that is vibrant, lively and open to all. In the pages that follow you will find your *Bulletin* presented in a much more dynamic and varied style with clearer labelling of articles and much better use of images of our stunning natural world and of our very attractive staff and members. We hope that the changes will make your membership of the Society even more appealing and that you will be encouraged to contribute both to the work of the Society and the development of YOUR *Bulletin*.

If you have a spare 5 minutes, drop me a line at Bulletin@BritishEcologicalSociety.org to let us know what you think of the new layout. If you have any ideas for new content you would find useful, or want to own up which bits of the *Bulletin* you never actually read, tell us. I'm usually at BES meetings if you want to speak to me in person. Or tell any BES staff or Council member what you think, or tell us via @BritishEcolSoc. We're all keen to provide a magazine that you want to read. We are planning a more formal survey of members' opinions of *Bulletin* content at some point in the future, but as you all know the outcome of surveys can depend on the questions you ask, so feedback now will help us identify areas of interest to the membership.

I have said nothing so far about the actual content of this issue. We have timed this redesign to coincide with the Centenary of the British Ecological Society in April 2013. Rather than produce a special Centenary issue we thought we should celebrate this landmark year by constantly reflecting the excellent work that the BES is doing to advance ecology and make it count, and to honour the work of our ecological ancestors by demonstrating the continuing value of a learned Society for ecology now and for the foreseeable future. We will of course be looking back and celebrating some key moments in the history of the Society during the course of the year, but above all we'll be trying to meet the aims that were first set out for the *Bulletin* over 40 years ago; keeping you informed about your Society, and getting you involved in making it better.

A handwritten signature in blue ink that reads "Alan". The signature is written in a cursive style with a long horizontal stroke underneath.

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 3700, 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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SHAPING YOUR SOCIETY



Hazel Norman / Executive Director

Have you ever wondered how the BES figures out how to support the ecological community and what's the best way to use its resources?

The BES is an organisation run by and for members, as well as being a charity doing public good. Major decisions on the direction and activities of the BES are made by BES Council, which comprises ten Officers (President, Treasurer, etc.) and twelve Ordinary Members elected at the AGM. All Council members become trustees of the charity and have a legal duty to ensure that the organisation runs effectively and that resources are used to achieve our charitable activities. The work of Council is supported by nine executive committees, which cover all the main aspects of BES work, such as policy, education, publications, etc. Council members take an active role in these committees with an Officer chairing each, so there is a close connection between Committees and Council.

Council members represent the views of the whole ecological community and being part of Council gives a great opportunity to shape what we do.

There are major challenges facing organisations like ours: How will Open Access impact on the publication of ecological research? How can the Society best support ecologists at each stage of their career? How do we make ecological research accessible and influential to policy makers and practitioner users?

What are the best ways of raising awareness of ecology with the general public? What is the role of a learned society in the 21st Century? It's part of Council's role to answer these kinds of questions and ensure current activities are run effectively.

If you can contribute to these issues, we are currently seeking three BES members to join Council in August 2013 – one of which is the Early Career Representative, a post reserved for a BES student member. The term of office is four years and successful candidates are asked to join two executive committees as well as Council; this means there are approximately eight meetings a year, mostly held at the BES offices in Charles Darwin House, London. As well as attending meetings, you'll need to read papers and get involved in *ad hoc* projects. To give a flavour of what's involved and what **you** might gain, read the profiles of Adam Vanbergen (who retired from Council in December 2012) and Tom Ezard (the current Early Career Representative who retires in August 2013). If you would like more information, please get in touch with me at **Hazel@BritishEcologicalSociety.org**. The closing date for nominations is 1 May 2013.

If you don't think Council is for you, but would like to be more involved in your Society, take a look at the list that follows of other great ways to contribute to and network with the wider ecological community.

ADAM VANBERGEN **MEMBER OF COUNCIL 2008-12**

I thoroughly enjoyed my time (2008-2012) as an ordinary member of BES Council. Officially, whilst on Council you are a trustee and non-executive director of the BES with legal responsibility for the good and proper management of the Society (SCARY!). Luckily there is enough collective wisdom on Council that it is hard for one individual like me to really #!* things up! During my tenure the Society moved to Charles Darwin House and there have been many changes in the publications and grants arenas, all of which made for a challenging and interesting experience.



As a Council member I felt I had an opportunity to actually influence the Society and contribute to raising the profile of Ecology in the wider world. Moreover, in sitting on the grants and publications sub-committees alongside Journal Editors, Officers and Members of the Society I was exposed to the diversity of views, skills and experience from which the Society and Ecology benefits. In all this I felt that decisions that I had participated in were acted on by the Society, a good feeling, and I obtained valuable insight into how a charitable organisation operates and decision making at a directorial level.

All this helped me as part of my own career development at CEH. For example, being on BES Council helped demonstrate 'professional esteem' - one of the NERC's promotion indicators. More importantly being on Council also provided an opportunity to interact with ecologists from across the world, whilst hard to quantify, this exposure and networking was one of the boons of my turn on Council.

I found working on Council a rewarding experience and I would like to encourage others to consider it when the opportunity arises.

“...being on BES Council helped demonstrate ‘professional esteem’”

TOM EZARD
MEMBER OF COUNCIL 2009-13

@tomezard

I was elected to Council to serve as Early Career Representative in 2009, with the BES wanting to develop the foundations put in place by inaugural post holder Sarah Dalrymple. Sarah had done a lot to communicate to existing members the benefits of BES membership, and I was motivated to accelerate this dissemination of information and increase the proportion of early career members to comparable levels with other ecological societies. Any attempt to make ecology relevant in the 21st century - to advance ecology and make it count - requires an engaged and enthusiastic group of young(ish) people.

My period of office has featured major changes to the BES and the country. I sit on Membership, Publications and Education Training and Careers committees, and have had the opportunities to learn about moves towards open access publishing or implementation of new integrated digital platforms to better serve BES Members, as well as drafting official responses to substantial overhauls of government education policy.



My period of office has undoubtedly boosted my reputation nationally and internationally (<http://inngene.net>). Sitting on diverse committees with some of the most eminent people in our field has been a remarkable experience, providing insight into the responsibilities a charitable organisation faces, but also how the Great and Good of UK Ecology have gone about the business of building careers that glitter like shards on a bright January morning. Speaking up at Council remains - even after almost 4 years - a somewhat intimidating experience, but I've been cheered by how real change can be effected for, hopefully, the betterment of all Ecology. The question isn't "why should I put myself forward for Early Career Representative in 2013", but "why shouldn't I?"

“Ask not... why should I put myself forward for Early Career Representative in 2013”, but “why shouldn't I?”



GETTING INVOLVED

HOW TO GET THE MOST OUT OF YOUR BES MEMBERSHIP

Richard English / British Ecological Society
@BritishEcolSoc

The British Ecological Society exists to develop ecological science and scientists, and to promote its use and understanding. We cannot do any of that without our members – you are our lifeblood.

Many of you already attend our internationally recognised Annual Meetings and subscribe to our superb high impact Journals – but there are so many other, varied ways you can get even more from your membership.

Whether you want to forge national or European policy, follow our Twitter feeds, mentor the new generation of ecologists or comment on our blogs – there are a multitude of opportunities to interact with us.

You've chosen to be a member of the British Ecological Society, so make the most of what we can offer by making the most of what **you** can offer. This is YOUR Society. We're here for you.



British Ecological Society

CENTENARY

Contact: Julie@BritishEcologicalSociety.org
@BESCentenary

www.britishecologicalsociety.org/about_bes/centenary.php

Julie Hodgkinson, Festival of Ecology Manager



- Come to a Festival of Ecology event
- Attend INTECOL
- Follow the centenary twitter feed
- Come to one of our three cross-disciplinary meetings on marine science, global change and evolution
- Submit a video for our *Day in the Life of Ecology* film project
- Interact with the *100 Influential Ecological Papers*, published in 100 years of British Ecological Society Journals online project
- Take part in an interactive activity on our new website www.FestivalofEcology.org

PUBLICATIONS

Contact: Catherine@BritishEcologicalSociety.org

www.britishecologicalsociety.org/journals_publications

Catherine Hill, Head of Publications



- Submit a proposal for an *Ecological Reviews* volume
- Follow and contribute to Twitter feeds for our journals
- Comment on our Blogs
- Like our Facebook pages
- Download and share our informative journal videos and podcasts
- Download and share the articles, lay summaries, blog posts
- Submit your articles to one of our five world-renowned journals
- Agree to review articles when asked by our hard-working Editorial Board members

- Meet the deadlines when you have agreed to review!
- Come and talk to our publications staff and Editors – often found hanging around the BES stands at ecological conferences or the BES Annual Meeting
- Email Catherine Hill, Head of Publications [Catherine@BritishEcologicalSociety.org] with any ideas for our current or future publications portfolio
- Join our Publications Committee to influence the future direction of the Society
- Help shape future journal developments by participating in our journal focus groups
- Spread the word – if you find any ecologists that aren't part of the oldest ecological society in the world, talk to them about the good work the Society does
- Suggest the journals to your colleagues for their papers too.
- When successful in publishing promote the paper, the journal and the Society as widely as possible. Add the BES logo to posters or presentations when including the name of the journal
- Circulate copies of the paper PDF to other colleagues.
- Always consider the BES journals if you want an open access option for publishing your work.
- Make BES journals your first stop when considering publication
- Attend journal run workshops to find out more about publishing.
- The journals often run free trial subscriptions to the journals, pass these on to colleagues
- If you've published a paper in one of our journals, work with your institution's press office on a press release and make sure we're mentioned in the release.

GIVING

Contact:

Grants@BritishEcologicalSociety.org

- Donate to the Society, to help specific campaigns and to further the reach and success of the Society
- Leave a legacy to ensure the future of the BES
- Donate your old print journals to your local library or institution

EDUCATION

Contact:

Karen@BritishEcologicalSociety.org
[@YoungEcoBES](https://twitter.com/YoungEcoBES)

www.britishecologicalsociety.org/educational

*Karen Devine,
Education Manager*



- Join the education expertise list so that we can contact you when any education policy work arises. These opportunities include developing science curriculum for schools, A-level biology and in 2013 more work in geography along with practical science, fieldwork and mathematics in science. Information is usually found here http://www.britishecologicalsociety.org/educational/education_policy/index.php
- Submit teaching and learning ideas, in particular for progression from A-level to Higher Education so that we can upload these as resources for schools to use. Ideas linked to our wall charts are very popular and offer a great way to build up your public engagement profile.
- Give away wall charts to schools, to anyone who works with young people and put them up in your department. You can order copies here http://www.britishecologicalsociety.org/educational/centenary_wallcharts/index.php
- Give away *Rooting for Career* guides to students, schools, careers offices and put one up in your department: most young people don't know what careers are available with ecology.
- Nominate your best UG students for the fellowship scheme and help them get an academic career started http://www.britishecologicalsociety.org/career_paths/young_ecologist/undergraduate_fellowship.php
- Apply to the Undergraduate research bursary for an eight week research opportunity <http://www.societyofbiology.org/education/hei/urb>
- Mentor other members at all stages of their careers
- Follow our Twitter feed [@youngecobes](https://twitter.com/youngecobes) aimed at students and strictly for careers or other matters related to education and professional development

- Co-organise our careers events for Undergraduates, Masters and PhD students
- Volunteer to work with local schools on our behalf, we get lots of requests from schools who want someone to come along and give a careers talk or advice on using their school grounds to teach ecology.

MEMBERSHIP

Contact:

Membership@BritishEcologicalSociety.org

www.britishecologicalsociety.org/about_bes/membership/index.php

Bill Bewes



- Enter the BES membership competition
- Become a BES membership representative
- Display membership posters in your department
- Enter the photographic competition
- Meet fellow members at BES events
- Submit research area to BES expertise database
- Join a Special Interest Group and, if there isn't one that interests you, form a new one
- Buy books from leading scientific publishers at a discount
- Get free access to the *Methods in Ecology and Evolution* journal
- Access BES journals right back to the 1st issues with an eJournal subscription
- Access Ecological Society of America journals with a BES eJournal subscription
- Book a meeting room free of charge at our conference facility in London
- Attend BES events at a discount
- Join Facebook and Twitter groups (@BritishEcolSoc)
- Join a BES committee
- Read (and submit articles to) the *Bulletin* and *eBulletin* to keep up with all BES news
- Nominate a colleague for a BES Award
- Submit an article to the *Bulletin*: Bulletin@BritishEcologicalSociety.org
- Forward the *eBulletin* to colleagues



EVENTS

Contact:

Richard@BritishEcologicalSociety.org
@BritishEcolSoc

www.britishecologicalsociety.org/meetings

Richard English

- Become a member of Meetings Committee
- Become a local organiser for an Annual Meeting
- Submit a symposium proposal
- Submit a symposium proposal for the joint BES, Biochemical Society and Society for Experimental Biology meeting
- Submit a workshop proposal for an Annual Meeting
- Submit a thematic topic proposal for an Annual Meeting
- Attend INTECOL and present a poster or a talk
- Join and attend a Special Interest Group event
- Suggest opportunities of cross working with your institution and the BES
- Advertise BES events at your institution
- Tell your colleagues about the range of our activities
- Tell your students to join the BES (they will get reduced rates to BES events as well as become members of our community)
- Become a student helper at BES events

GRANTS

Contact: Grants@BritishEcologicalSociety.org

www.britishecologicalsociety.org/grants

- Apply for a grant
- Join the Review College
- Nominate someone for a BES prize
- Enter the photographic competition
- Join Grants Committee
- Enter a talk for the Anne Keymer award (students)
- Enter a poster for the Best poster prize (students)
- Promote/Apply for books using the Gratis Book Scheme
- Donate to the BES
- Leave a legacy to the BES in your Will
- Attend a Grants Workshop

POLICY

Contact: Policy@BritishEcologicalSociety.org
@BESpolicy

www.britishecologicalsociety.org/policy

Ceri Margerison, Science Policy Manager



- Join the Expertise Database to find out policy-relevant meetings and training opportunities, plus the opportunity to input your views into consultations and inquiries: <http://www.britishecologicalsociety.org/policy/expertise.php>
- Participate in the annual Parliamentary Shadowing Scheme, spending two days with a Minister, MEP or senior official in England, Wales, Scotland or Brussels: http://www.britishecologicalsociety.org/policy/shadowing_scheme.php
- Spend three months as a Fellow at the Parliamentary Office for Science and Technology (POST), receiving £5,000 to spend time researching and writing a POSTnote (a briefing note for MPs and Peers) on an ecological matter of topical policy interest. http://www.britishecologicalsociety.org/policy/post_fellowship.php
- Take part in one of our Policy Training Workshops, this year taking place at Charles Darwin House from 22 – 23 October. The workshop is an opportunity for early-career researchers to interact with those who have experience of working at the science-policy interface, network with peers and participate in communications training activities to build confidence in engaging with policy-makers: http://www.britishecologicalsociety.org/policy/policy_training.php
- Contribute your views in response to consultations and inquiries.
- Follow us, and talk to us, on Twitter: @BESPolicy
- Sign up for updates from the Ecology and Policy Blog, leaving comments on blog posts: <http://britishecologicalsociety.org/blog>
- Join our Policy Alumnus group on LinkedIn.
- Be a BES Policy Intern, spending three months contributing to the work of the Policy Team (two days per week), representing the BES at external policy events, contributing to the blog and advancing our strategic priorities. <http://www.britishecologicalsociety.org/policy/internship.php>

- Attend a policy workshop or meeting, for the opportunity to network with policy makers and share information on topics of mutual concern (e.g. meeting in Scotland on 19 – 20 September) or policy-focused workshop at INTECOL: http://www.britishecologicalsociety.org/policy/future_meetings.php
- Join the BES Scotland Policy Group, a network of members based in Scotland who are interested in informing the development of relevant policy in Scotland. We will be holding a meeting in the summer to explore a Wales Policy Group: http://www.britishecologicalsociety.org/policy/scotland_policy_group.php
- Join the Public and Policy Committee. The Committee sets the strategic direction for the Society's policy work and meets three times each year in London. A vacancy for a co-opted member of the Committee will arise in April and details will be advertised through the BES website, the Expertise Database and Policy Alumnus networks.
- Sign up to receive Policy Digest, a four-times yearly e-Bulletin summarising recent developments in science and environment policy. http://www.britishecologicalsociety.org/policy/policy_digest.php
- Join the BES Mentoring Scheme for Women in Ecology, which is now in its fifth year and will re-open for applications in summer 2013: http://www.britishecologicalsociety.org/getting_involved/mentorship.php

OTHER BES STAFF

Key staff members who can help you get the most from your membership.



*Heather Mewton,
Project Assistant*



*Cheryl Pilbeam,
Policy and Education
Assistant*



*Olivia Hunter,
Grants and
Conferences
Administrator*

The flagship event of the British Ecological Society's centenary year will be the 11th INTECOL conference. There is so much going on we've decided to put it in numbers!

6 DAYS

of world leading ecological science. INTECOL takes place at Excel in London from 18-23 August 2013.

2000

ecologists are expected to attend: meet new friends, expand your network of contacts and discuss ecological research.

11 INTERNATIONAL PLENARY SPEAKERS

- Tim Clutton Brock, University of Cambridge, UK
- Joel Cohen, Rockefeller University, USA
- Sandra Diaz, Córdoba National University, Argentina
- Boije Fu, Research Centre of Ecology and Environment, Chinese Academy of Sciences, China
- Nancy Grimm, Arizona State University, USA
- Ilkka Hanski, University of Helsinki, Finland
- Ove Hoegh-Guldberg, University of Queensland, Australia
- Jane Lubchenco, NOAA, USA
- Georgina Mace, UCL, UK
- Martin Nowak, Harvard University, USA
- Susan Trumbore, Max Planck Institute for Biogeochemistry, Germany

INTECOL

2013 in numbers

28 INTERACTIVE WORKSHOPS

- Analysing multivariate ecological data using R
- Biodiversity and ecosystem services in a changing world: data from the past to plan for the future
- Biodiversity e Science: challenges and opportunities of the European Research Infrastructure LifeWatch
- Biodiversity versus landscape
- Challenges and tools in studying biological invasions: an European perspective
- Eco futures – Putting the science of ecology into the policy of complex environmental change
- Ecological skills for the 21st century
- Ecosystem responses to climate change from the Arctic to the Amazon: New understanding and future challenges from experimental field scale manipulations;
- Ecosystem services and human health
- Hands on citizen science: ecology, engagement and technology
- Hitting the target: progress in implementing the Nagoya 2020 Biodiversity Strategy
- How best can international journals support applied ecologists in emerging economies?
- Innovative and successful fieldwork practice
- Integrated methods for ecological research – training activity for interdisciplinary workflows in biodiversity science and ecosystem research
- Long term ecological research in Europe – from national initiatives to a continental network
- Looking back to look forward: incorporating longer term ecological processes and perspectives in conservation planning and management
- Managing ecological data for effective use and re-use
- Maximising the impact of your research paper
- Networks for a 21st century ecology
- Role of reserves and restoration in tropical forest conservation
- Species interactions and survival in dynamic landscapes: how predictable is the future?
- The challenges of global change for African insect ecology
- The cultural forest – how widespread is it and what does it mean for conservation policy and practice
- The role of today's ecologists in supporting the ecologists of tomorrow
- Virtual versus real ecology: outreach and education for ecological science using computer games
- Visualisation and analysis of ecological networks in a changing world
- Writing and publishing scientific papers if English is not your first language

45 WORLD CLASS SYMPOSIA

- A critical study of biodiversity studies
- Altitudinal patterns of biodiversity in a rapidly changing world: time for synthesis
- Applying ecological science to increase agricultural yield and sustainability
- Applying the newest synthesis to understand how fast populations will respond to climate change
- Biodiversity, ecosystem services and multifunctional landscapes
- Biodiversity stocks and ecosystem service flows across coastal and shelf margins experiencing multiple sources of change
- Biological invasions: how to reconcile science, management and policy
- Climate change and African mountain ecosystems: modelling ecological change at different scales
- Community ecology for infectious diseases
- Eco evolutionary dynamics and the contemporary convergence of ecology and evolution
- Ecological consequences of evolutionary changes
- Ecological research and public policy in southern mega diverse countries: lessons from successes and setbacks
- Ecosystem services contributing to poverty alleviation
- Emphasising the importance of basic science in ecology
- Evolution in ecological communities – how evolutionary processes shape ecological communities and communities determine the direction on evolutionary change
- Evolutionary management: sustainable food, health and biodiversity for the next 100 years
- Forest resilience, tipping points and global change processes
- Global change and ecosystem ecology: beyond the study of nutrient cycling
- Global change and multispecies systems: from understanding to prediction
- Grassland multifunction under economic high speed development times
- How can we transform predictive ecology to better meet scientific and societal demands?
- Integrative island biogeography: new perspectives on a classic theory
- International perspectives from long term research on ecosystem carbon budgets
- Island biocultural diversity and traditional ecological knowledge
- Light pollution in an urbanised world: ecological and evolutionary consequences
- Long term urban ecological studies: linking pattern, process and ecosystem services towards sustainable cities
- Maintaining top predator populations in the 22nd century: ecological channels and opportunities
- Mechanisms of plant competition
- Multilevel transmission processes in disease transmission: blending models and data
- Natural forest succession in the tropics – lessons and implications for tropical forest restoration
- New insights from new methods in ecology and evolution
- Not just for geeks: broadening scope and participation in predictive ecology
- Phenology and climate change: perspectives from ecosystems across the International Long Term Ecological Research Network (ILTER)
- Plant functional ecology and vegetation modelling in a new data rich world
- Plant invasion success: trait-based analyses and prediction
- Predicting and protecting marine biodiversity and ecosystem in a high CO₂ world
- Putting applied ecology into practice: knowledge and needs for the 21st century
- Reinvigorating macroecology with process based approaches
- Soil biodiversity and ecosystem function: recent advancement and new challenges
- The effects of large scale manipulations of tropical forests on arthropod assemblages
- The Forest Microbiome: how microbes shape the structure and function of forest ecosystems in a changing world
- The future of ecological possibilities in citizen science
- The tree of life in ecosystems: evolution of plant effects on carbon and nutrient cycling
- Threats to an ecosystem service: evaluating multifactorial pressures on insect pollinators
- Tools to enhance landscape resilience to human impact



AND NOT FORGETTING...

INTECOL also features ecologically related trips, social events, interactive content, accompanying persons programme and much more. Early bird registration closes on 5 May 2013.

www.intecol2013.org
#INTECOL2013

INTECOL WORKSHOP

Priorities in Global Forest Conservation Invitation to contribute

Forest conservation is a leading international concern, with growing relevance in the context of recent developments under the United Nations Framework Convention on Climate Change. This is likely to result in major investment in forest conservation over the coming years, primarily as stores and sinks of carbon, though their value in preserving species has also increasingly been recognised. Substantial media attention is directed towards flagship issues such as reduced Amazonian deforestation or the Heart of Borneo project.

Despite this, there remains little agreement either in the academic literature or in popular discourse as to the most effective use of the limited resources available. Should we be aiming solely to preserve natural forests, or can secondary and degraded forests act as a more economically-viable alternative? Can we trade off use and protection? What role might restoration, plantations or agroforestry play? How should we build resilience into forests in the face of global change or novel disease threats? Do the challenges and opportunities vary by region and biome?

The Tropical and Forest Ecology Groups will be running a workshop at INTECOL for which we are now soliciting contributors. The workshop will have two main outputs. During the meeting we will prepare a press release for immediate release, summarising our overall conclusions. This will be followed by a manuscript intended for open-access publication later in the year, jointly co-authored by participants from the meeting.

The workshop format will consist of a series of brief presentations followed by break-out discussions on particular themes in which the content of both the press release and manuscript will be agreed. The themes are currently under discussion but are likely to include conservation of diversity, carbon storage and climate-change mitigation, restoration, silviculture, agroforestry and human livelihoods. These will then be expanded upon in the subsequent manuscript. Each theme will be championed by an established authority in the field.

At this stage we are still assembling the panel of theme leaders, but if you would like to be involved in the planning of this workshop and receive updates in advance of the meeting then please contact us. We hope that you will be keen to participate in what we feel will be a timely and important contribution to the evidence base for forest conservation.

• **Markus Eichhorn**

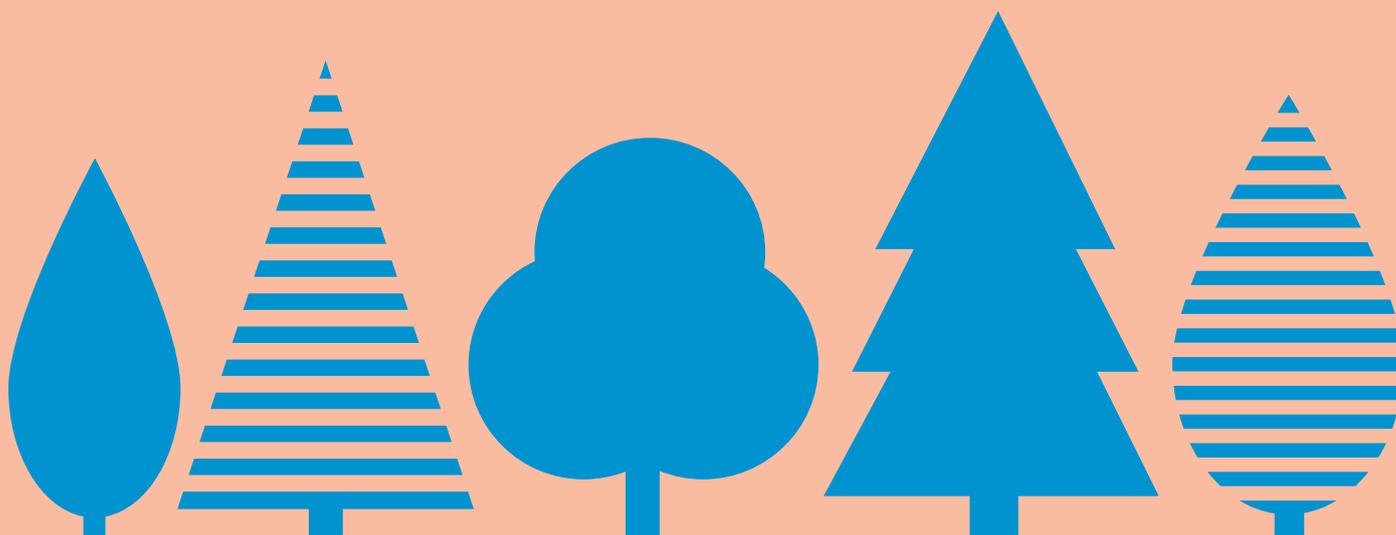
Secretary, BES Forest Ecology Group
markus.eichhorn@nottingham.ac.uk
[@BESForests](#)

• **Lindsay Banin**

Co-secretary, BES Tropical Ecology Group
lindsay.banin@gmail.com
[@BES_Tropical](#)



British Ecological Society
Forest Ecology Group





BES President Georgina Mace addresses the masses

A WINTER MEETING ONCE AGAIN

BRITISH ECOLOGICAL SOCIETY ANNUAL MEETING

Alan Crowden / Bulletin Editor

The 2012 Annual Meeting of the British Ecological Society took place in Birmingham, in December. For many it was regarded as a welcome return to the ‘traditional’ winter meeting, a gathering in the week before Christmas to share our ecological knowledge, of course, but also to celebrate the end of an exhausting university term and to exchange notes on the progress, or otherwise, of Christmas preparations at home.

The return to December heralded the return of a few long-lost friends for whom September is field season, or term time, or the one opportunity in the year to take a holiday. The 'return' to December seemed to meet with general approval judged by the turnout; nearly 900 delegates registered.

It might come as a shock to reminiscing oldsters to contemplate that 50% of the membership has never experienced a winter meeting. Half of our current members did not belong to the BES ten years ago and rather than spending December 18-21 2002 at the University of York, some of this year's delegates may have been getting excited about appearing in their primary school Christmas production: a free BES Tshirt to anyone who owns up to falling into that category.

The 2012 meeting provided a novel experience for all of us in that the meeting was the first where no university accommodation was on offer, and the programme was organised with the scientific elements based at the University of Birmingham campus and evening social events in the city centre where most of us were in hotel accommodation.



Opening reception: sheer class

The social programme kicked off with a welcome mixer at the Birmingham City Art Gallery. This splendid 19th century building provided a very cultured welcome: delegates were serenaded by a string quartet before being let loose to roam the rather splendidly-domed Round room and the exhibition galleries leading off in all directions. BES President Georgina Mace has probably addressed audiences in hundreds of venues, but few will have exceeded the grace and charm of this one.

The proper business of the meeting began the following morning in the

Great Hall on the University campus with the Opening Ceremony and the Tansley Lecture. The Tansley Lecture is given by an eminent ecologist invited to speak on a topic of his or her choice: Steve Ellner of Cornell University chose as his theme *Rapid Evolution: From Genes to Communities, and Back Again?* We have been treated to some superb 'Tansley' expositions over the years and Steve gave us a demonstration of the vision and clear sightedness that exemplifies the best lectures. Ecologists at the top of their game tend to be at the head of a large research group and it was good to see the postdocs and postgraduates who have contributed to the ideas of the Ellner lab being given full credit for their work. Naturally, Steve's reward for an hour's toil on the stage was to be cross examined by Pete Hudson, Bryan Grenfell and Peter Grubb among others, and the discussion continued at the front of the hall as the masses filed out for a short coffee break before breaking out into whichever of 10 concurrent sessions had caught their eyes.



Question time: 'Great talk' says Pete Hudson, 'But allow me to disagree with you'

The concurrent sessions ran for a couple of hours. In the good old days everything stopped for lunch. But lunch, apparently, is for wimps and we now have a range of options to keep us amused while munching on our sandwiches. The last time that the BES convened in December there were no Thematic Topics, no BES-UK BRAG session, no workshops on the future of fieldwork (see p21), on effective career choice (see p16) and certainly no workshops planning ecological raids on music festivals (p19).

The day on campus drew to a close about 5pm with a steady drift back into town. Some headed for the popular *Unlocking Your Potential Session* at the Jam House, some simply went straight to the bar.



The audience for the bar and dancing is pretty enthusiastic, too

The programme for Wednesday was a sort of mirror image of the previous day: concurrent sessions of offered papers started bright and early and the big set piece events followed in the afternoon. For the second time we had a personal view of the past year in ecology; this year it was the turn of Chris Thomas who made a good fist of making an entertaining talk out of another year that was not filled with good news for ecologists. Johan Rockstrom, Director of the Stockholm Resilience Centre followed with a very engaging BES Lecture exploring strategies for planetary stewardship.



Johan Rockstrom gave the BES Lecture for 2012

The Annual General Meeting followed, and as ever the Society is in rude financial health but with no cause for complacency. BES finances are underwritten by the income from our journals, but the whole business model is overshadowed by the move towards Open Access and we cannot assume that BES activities will always be so strongly supported by an income stream from publishing. The overwhelming *motif* of the AGM was the Centenary year which has now begun, and Georgina Mace used her presidential introduction to underline what a rich programme of activities and events are being lined up for 2013.

The formal business done, we were able to get on with the enjoyable business of seeing prizes being handed out.

AWARDS CEREMONY CITATIONS 2012

HONORARY MEMBERSHIP

Honorary membership of the BES is the highest honour that the Society gives. The primary criterion for honorary membership is a lifetime's achievement in the science of ecology or its application. Other criteria, such as service to the BES, may be brought into play but would not normally merit the award without at least a very strong scientific record. The number of Honorary Members at any one time is limited to approximately 1% of the total membership of the Society.



Mike Hassell, Imperial College London

Mike Hassell is a leading population ecologist who has revolutionised the way we understand animal and in particular insect population dynamics. He has made major contributions to a number of areas of research but is particularly well known for his studies on the dynamics of insect-parasitoid interactions. Among many contributions his work has emphasised the importance of spatial processes in allowing the persistence of consumer-resource systems that have an intrinsic propensity for divergent oscillations. Mike's research group used both theoretical and experimental approaches, the latter both in the laboratory in the field. Educated at Cambridge, Oxford and UC Berkeley he spent most of his career at Imperial College (based at Silwood Park) where he latterly was Head of Biology and then Head of Life Sciences. He has had a close association with the BES, including as a long-time Treasurer and is a past President.

FOUNDERS' PRIZE

The Founders' Prize, commemorating the enthusiasm and vision of the Society's founders, is awarded to an outstanding ecologist, early in her/his career who is making a significant contribution towards the science of ecology. The Prize complements those given to students at the beginning of their career (Best Young Author, Anne Keymer and Poster Prizes) and those given to senior ecologists (President's Medal and the Marsh Award for Ecology). The award is normally given biennially, held in alternate years to the President's Medal.



Toby Gardner

Toby Gardner graduated from Edinburgh University in 2001, moving to the University of East Anglia for an MSc then a PhD (graduating 2007). He became a Research Associate at the Tyndall Centre working on the impacts of climate change on corals and is now a NERC Fellow at the University of Cambridge.

Toby has published notable papers on a variety of topics; for example, his *Science* paper of 2003, *Long-term region-wide declines in Caribbean coral reefs*, *Science* 301:958-960, has attracted 483 citations. Another interest is rain forest where he also has significant publications, for example his 2009 paper *Prospects for tropical forest diversity in a human-modified world* (*Ecology Letters* 12, 561-82) and a 2011 *Nature* paper: *Primary forests are irreplaceable for sustaining tropical biodiversity*. He works in many areas of ecology, including climate change, conservation, reptiles, butterflies, spiders and frogs. According

to the Web of Science he has published 35 papers, and last year he was cited 350 times (rising exponentially). His average citation score is 40 citations per paper, and he has an *h* index of 16. This is an excellent profile for someone who finished their PhD only in 2007 and works in largely field-based projects.

BES AWARD

The BES Award is made in recognition of exceptional service to the Society.



Professor Sue Hartley, University of York

The BES recognises exceptional service to the Society and one of the wonderful things about those who serve the BES is that it is very difficult to single out individuals – they are so many exceptional contributors. However, Sue Hartley deserves especial praise. Between 2006 and 2010, Sue handled the Publications Committee with amazing skill, diplomacy, tact, understanding and, on many occasions demonstrated her impressive powers of restraint (a lesser person might have resorted to fisticuffs!). Between 2004 and 2007, she held the office of vice-president and worked tirelessly in that capacity in a number of forums, including the publications committee, but also as a champion of the role of women in science and especially in the BES. The critical work done by those such as Sue is often not visible to the wider membership of the Society, but without those efforts the Society would simply not function.

ECOLOGICAL ENGAGEMENT AWARD

The Ecological Engagement Award is an annual award to recognise an exceptional contribution to facilitating the use and understanding of ecology. The Award is an honorarium of £1,000 plus a certificate.



Professor Bill Sutherland, University of Cambridge

The Ecological Engagement Award is to recognise an exceptional contribution to facilitating the use and understanding of ecology. That description fits Bill Sutherland like a glove. Bill has been tireless in his promotion of the science of ecology for conservation. His books include *Ecological Census Techniques*, *Behaviour and Conservation*, *Conservation Science and Action* and *Managing Habitats for Conservation*, all of which are exceptional in their style and accessibility for readers from undergraduate to senior academic and from practitioner to policy maker level. Bill's passion for communicating these ideas and for removing barriers for workers overseas is illustrated by his refusal to take royalties for *The Conservation Handbook*, instead negotiating free copies of the book for scientists in poorer countries. 3000 copies have been given to conservationists in 160 countries.

In facilitating the use and understanding of ecology, Bill hasn't stopped at books. He is the prime mover in Conservation Evidence.com, which serves to collate the rich experience from the practitioner community and others of the effectiveness of a variety of conservation interventions. This website provides over 2000 such examples.

Few researchers have made such a contribution that has reached out to so many people in so many countries and situations.

MARSH AWARD FOR ECOLOGY

The Marsh Award for Ecology is normally awarded annually. It is supported by the Marsh Christian Trust and administered by the British Ecological Society. It is awarded for an outstanding recent discovery or development which has had a significant impact on the development of the science of ecology or its application. The Award is an honorarium of £1,000 plus a certificate and is open to ecologists from anywhere in the world.

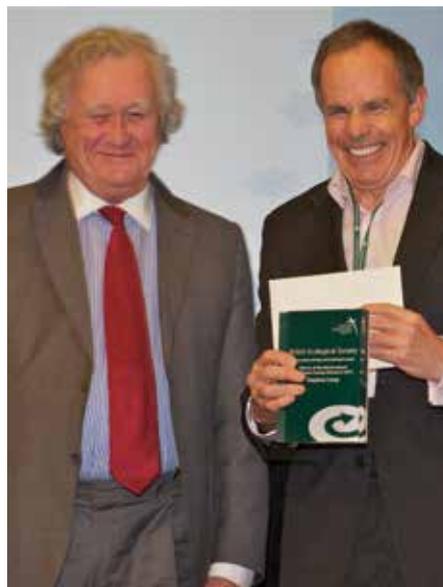


Professor Tim Coulson, University of Oxford

Tim Coulson is an outstanding population ecologist whose exciting and novel work linking environmental change to population dynamics has recently been published in *Science* (2011) and *Nature* (2010). Hence this award is timely, not just for the substantial impact of this recent research, but also because of his other contributions to ecology, such as his editorship of the *Journal of Animal Ecology* and his efforts to improve the methods for the analysis of long-term population datasets to gain insight into how ecological change generates evolutionary change. Tim's consistently excellent research has, unusually, spanned population theory, evolution and genetics and conservation; it is particularly noteworthy for demonstrating how a solid ecological and genetic understanding can be used to underpin the conservation and management decision-making process. For his contributions to both the science of ecology and its application to conservation, it is appropriate for the British Ecological Society to recognise Tim's achievements with this award.

MARSH AWARD FOR CLIMATE CHANGE RESEARCH

The Marsh Award for Climate Change Research is normally awarded annually. It is supported by the Marsh Christian Trust and administered by the British Ecological Society. It is awarded for an outstanding contribution to climate change research. The Award is an honorarium of £1,000 plus a certificate and is open to ecologists from anywhere in the world.



Professor Steve Long, University of Illinois

Steve Long enjoyed a successful career in the UK before moving to his current post in the USA. Educated at the Universities of Reading and Leeds, Steve joined the University of Essex in 1975 as a lecturer and rose to the rank of Professor. In 1998 he moved to Illinois, where he is now the Edward and Jane Gutschell Endowed University Professor at the University of Illinois, Champaign-Urbana. Throughout his distinguished career Steve has been a leader in the field of environmental physiology and his work to understand mechanisms of plant responses to rising levels of atmospheric carbon dioxide and tropospheric ozone have placed him at the forefront of global change research. Steve was the founding editor and is still chief editor of the highly regarded and high impact journal *Global Change Biology*. He maintains active research links with global change laboratories in the US, Australia, Brazil, France, Italy, Japan, Switzerland and the UK, and is a worthy recipient of the Marsh Award for Climate Change Research.

MARSH BOOK OF THE YEAR AWARD

Books can have a major impact in ecology but academic publishing of books brings relatively little financial reward to authors. This award aims to recognise the contribution authors make to the science of ecology.

The Marsh Book of the Year Award acknowledges the important role that books have in ecology and its development. This prize is funded by the Marsh Christian Trust. It is awarded to the book published in the last two years that has had the greatest influence on the science of ecology or its application. The prize is an honorarium of £1,000 plus a certificate and is open to books published anywhere in the world.



Dr Roger Dennis, Centre for Ecology and Hydrology, Wallingford, for the book *A Resource-based Habitat View for Conservation: Butterflies in the British Landscape*

John Hopkins beautifully summarised the appeal of Roger's book in his review in the *BES Bulletin*: "This book is an exceptional personal achievement as it provides a treatment of the ecological requirements of British butterflies based largely upon the author's lifetime of field observation and his collaborations with others. The book is conceptually underpinned by a definition of habitat as a space in which resources required by a given species occur and are available....In each chapter a series of ecological principles is set out and each in turn is examined in the text....This is a remarkable synthesis of observation and independent thought and I am sure I will use my copy as a source of reference for a very diverse range of ecological topics as well."

Congratulations to Roger on a book packed with ideas and detailed evidence on a topic of great importance and appeal.

BEST PAPER BY A YOUNG AUTHOR

The BES awards an annual prize for the best paper by a young author in each of the Society's journals. The prizes are targeted at people at the start of their research career. The awards are named after an eminent ecologist whose research reflects the interests of the journal.

Details of the five prizewinners and accounts of their work are available in the *Bulletin* of June 2012 (43:2 pp16-19). We were delighted that two of the winners were able to attend in person to collect their awards



Harper Prize (*Journal of Ecology*):

Awarded to **Dr Ryan Phillips** of Kings Park and Botanic Garden, Perth, Western Australia, for his paper "*Do mycorrhizal symbioses cause rarity in orchids?*", published with Matthew Barrett, Kingsley Dixon and Steve Hopper.



Southwood Prize (*Journal of Applied Ecology*):

Awarded to **Dr Nicholas Beeton** from the University of Tasmania for his paper *Models predict that culling is not a feasible strategy to prevent extinction of Tasmanian devils from facial tumour disease* published with Hamish McCallum

BES ANNUAL MEETING 2012 STUDENT PRIZE WINNERS

The Anne Keymer Prize for Best Student Oral Presentation

The prize is named in the memory of Anne Keymer and awarded for the best oral presentation by a postgraduate student at the BES Annual Meeting. Anne herself was one of the first winners of this previously unnamed prize, in 1981. She went on to a career of great distinction, before dying of cancer in 1993, at the age of 36. Anne was a member of the Editorial Board of the *Journal of Animal Ecology*, and more generally was an exemplary scholar, teacher and citizen of her discipline. In naming this prize after Anne, the BES is recognising a younger ecologist who embodied, to a remarkable degree, the qualities and values we stand for.

Those eligible to enter must present a paper at the BES Annual Meeting and should normally be a current graduate student, or one who has recently graduated and is presenting work that was completed when they were still a student. Competition for the prize is fierce. A panel of judges chooses the winner and the prize is an honorarium of £250. There are two runner up prizes of £100 each.

2012 Winner: Hanna Granroth-Wilding – '*Parasites of nestling seabirds affect siblings unequally*', presented in the Parasites Pathogens and Wildlife Disease session.

[Granroth-Wilding, H. (Institute of Evolutionary Biology University of Edinburgh), Burthe, S. (Centre for Ecology and Hydrology), Lewis, S. (Institute of Evolutionary Biology University of Edinburgh), Daunt, F. (Centre for Ecology and Hydrology), Cunningham, E. (Institute of Evolutionary Biology University of Edinburgh)]

2012 Runners up:

Eimear Rooney – '*Supplementary feeding demonstrates temporal heterogeneity in the importance of food on reproductive success*', presented in the Population Ecology session.

[Rooney, E. (Queen's University Belfast), Reid, N. (Quercus), Lundy, M.G. (Quercus), Kunc, H.P. (Queen's University Belfast), Montgomery, W. I. (Queen's University Belfast)]

Phillip J Blaen – ‘Drivers of nutrient uptake in High Arctic rivers (Svalbard) under a changing climate’ presented in the Aquatic Ecology session.

[Blaen, P. (University of Birmingham), Milner, A. M. (University of Birmingham), Hannah, D. M. (University of Birmingham), Brown, L. E. (University of Leeds)]

BEST STUDENT POSTER PRIZE

The Society awards a prize for the best poster by a research student at the Annual Meeting. Those eligible to enter must present a poster and should be a current graduate student, or one who has recently graduated and is presenting work that was completed when they were still a student. The entrant must be the first author of the poster and have undertaken the majority of the work being presented. A panel of judges chooses the winner and the prize is an honorarium of £250. The runner up receives a prize of £100.

2012 Winner: William Hentley – ‘Trophic cascades in a changing environment: the impact of elevated CO₂ on multi-trophic interactions’ presented in the Climate Change Ecology session.

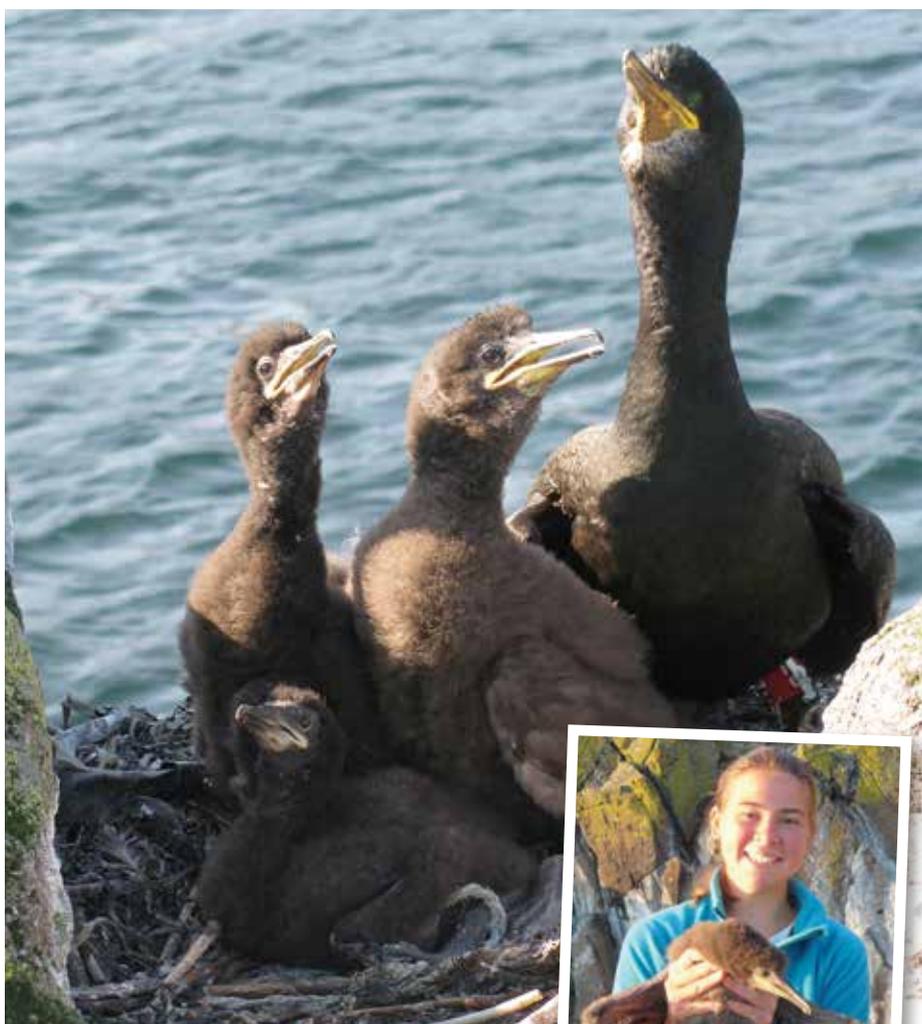
[Hentley, W. T. (Centre for Ecology and Hydrology), Hails, R. S. (Centre for Ecology and Hydrology), Johnson, S. N. (University of Western Sydney), Jones, T. H. (Cardiff University), Vanbergen, A. J. (Centre for Ecology and Hydrology)]

2012 Runner up prize winner:

Louise Barwell – ‘Can large-scale patterns in insect atlas data predict local occupancy?’ presented in the Large Scale Ecology – Landscapes Metapopulations and Macroecology session.

[Barwell, L. J. (University of Leeds Centre for Ecology and Hydrology), Isaac, N. (Centre for Ecology and Hydrology), Kunin, B. (University of Leeds)]

Congratulations to all of the winners and thanks to the judging panel. And thanks to Hanna Granroth-Wilding who provided the brief commentary below despite being given no notice at all by the nasty *Bulletin* editor.



One of Hanna's broods, showing unequal brood members



ANNE KEYMER PRIZEWINNER: HANNA GRANROTH-WILDING

First of all, I want to thank the judges and the BES for the award, it is a great honour. Even though this was one of the largest conferences I've presented at, the Annual Meeting was so friendly that the audience was one of the least intimidating I've spoken to. This friendliness was also apparent in the supportive and interested questions I was asked.

Public speaking comes quite naturally to me (by nature and nurture!), so battling with nerves doesn't get in the way of my excitement about the science. My talk was structured around a thesis chapter, so I knew what message I wanted to put across and was confident in it. I also minimize my anxiety by practising the talk many, many times – I aim for being

able to do the whole thing without looking at any slides or notes. The jitters do come, but only before and after the performance itself!

However, the speaking would be of little use if the structure and content of the talk weren't also up to scratch. For this, I owe huge thanks to my supervisors and their insightful feedback on my practice talks. They spot the places where I'm missing detail or have put in too much, which over several drafts gets the balance of information and logical flow just right. My winning the Anne Keymer prize is testament to this collaborative, iterative process. As I approach the end of my PhD, it is an encouraging reminder that all the effort can and does pay off.

SEX & BUGS & ROCK 'N ROLL

British ecology at music festivals

The BES Roadies

besroadies@gmail.com / @BESroadies / #BESfest

As part of the Festival of Ecology, we're taking Ecology to festivals to celebrate the Centenary of the BES in style.

We want to increase public awareness of ecological research and promote the BES as the leading voice of ecologists in the UK – but we want to do this in a different and entertaining way. So we're running a BES stall at music festivals over the summer.

Why music festivals? Music festivals are as much a part of the British summer as rain, barbeques, and pick-your-own strawberries. They have a 'captive' audience of 1000s (Glastonbury festival alone attracts over 100,000 people). Many festival-goers are older teenagers and young adults – a demographic that is often hard to reach and difficult to engage in science – and a growing number of festivals have a decidedly 'green' or ecological emphasis.

What are we doing there? We're planning a wildflower-meadow themed BES stall, which will provide a fun, creative, drop-in environment where festival-goers can explore ecology in a relaxed and entertaining manner. Planned activities will link directly to the festivals, e.g. a festival 'BioBlitz' will capture the biodiversity of nature at the festival site, and visitors will be able to explore how 'gross' their camping kit is using growth cultures on agar plates. We'll also be doing some science busking and running creative activities for kids. Other ideas will be chosen from competition entries submitted by BES members. The main aim is simply to demonstrate that ecology can be both fascinating and fun.

Our workshop at the annual meeting in Birmingham was a great way to get things started. The workshop was led by public engagement experts Helen Featherstone (University of Exeter) and Ruth Murray (AtBristol). During the Wednesday lunch break, 45 participants were given a brief introduction and a few pointers before a brief brainstorming session in groups. We were amazed at the amount of creative energy generated



in that short time and the groups came up with some fantastic ideas, including dung beetle gladiator trials, fossil-hunting in sandpits, and a luminous jellyfish disco.

We've set up a blog <http://besroadshow.blogspot.co.uk> where you can read more about the workshop and even watch a 2-minute summary video clip. We'll use the blog to keep track of our progress and report on successes (and failures) as we go along. We're also working with iSpot (www.iSpot.org) to keep a tally of all the species we find at the different festival sites.

We're starting our 'roadshow' at Wychwood Festival (www.wychwoodfestival.com) held at Cheltenham racecourse. Now in its 9th year, Wychwood has been nominated 'Best Family Festival' eight times running. Over the weekend of 31st May to 2nd June, we will be engaging festival-goers with Ecology alongside a number of other activities, workshops and more than 100 acts across indie, world and folk genres. In August you can find us in the Brecon Beacons at The Green Man Festival (www.greenman.net) – the biggest festival in Wales where we'll be joining other science-themed activities in Einstein's Garden.

So we're looking forward to a really great Centenary celebration and hope you can join us at some festivals this summer!

ECOLOGY EDUCATION AND CAREERS

Education reform in schools

Karen Devine / BES Education Manager
@YoungEcoBES



The BES has invested a lot of time over the last 18 months to contributing to the review of the national curriculum with particular reference to science and biology.

The new science curriculum for English children should be available in the early part of this year, at which time we'll know if our advice has been heard or not. The review has been subject to a number of delays and there has been significant controversy over the pace of change and a lack of transparency throughout the process.

A-level is set to see significant reforms with the Department for Education hoping for greater involvement from the Higher Education Sector in the development of the new examinations, the first tranche of which will include the sciences, maths and English. While some have welcomed the decision to move to a 2 year A-level without the 1 year AS qualification, others have expressed reservations. Geoff Parks at the University of Cambridge, writing in the *Times Education Supplement*, expressed concerns over the implications this will have for admissions processes and widening participation. Implementation is due to take place in September 2015.

Practical Science is also being challenged. Changes to school funding will bring support for science into line with all other subjects; at present science receives extra funding to support the extra cost of giving A-level students practical and field experience. The proposed funding changes indicate that A-level sciences will receive less funding in real terms and that this might impact on the quality of provision young people can access.

All publically available consultations to which the BES has contributed can be accessed via the SCORE website and we also signpost these from our education policy web pages.

WHO IS SCORE?

SCORE is the Science Community Representing Education and includes representatives from the Society of Biology, Royal Society for Chemistry, Institute of Physics, the Association for Science Education and the Royal Society. It is funded by these organisations with additional funds from the Department for Education and the Gatsby Foundation.

SCORE was founded with a clear remit to provide one voice for science. Much of the work undertaken addresses the issues that cut across the disciplines, such as the provision and resourcing of practical work in schools and the mathematical content of science courses. SCORE undertakes research and holds stakeholder meetings to gather data and evidence that could better inform education policy.

As a member organisation of the Society of Biology the BES provides input on ecological science, practical science and fieldwork, and teachers' perspectives, through the Society of Biology and directly through various working groups of SCORE. The BES receives a copy of draft responses SCORE has prepared and this provides us with the opportunity to comment and influence government more easily than we would be able to do alone.

In recognition of the importance of the work undertaken by SCORE, the BES additionally funds SCORE activity up to £1,000 per annum.

If you would like to get more involved in the education work of the BES please contact Karen Devine

Karen@britishecologicalsociety.org

You can find out more information about SCORE at **www.score-education.org**



Fieldwork in Higher Education: does it have a future?



Sarah Johnston / Graduated from Cardiff University in 2012 / BES Undergraduate Fellow for 2012

The popular conception of an ecologist is of a weather-hardened, outdoorsy sort, out taking measurements in all conditions wearing stout boots and a large rucksack.

This was the mental image that I had as a child, and carried with me to university – along with my boots and rucksack! Yet university departments are increasingly under pressure (cost, time, health and safety issues), and practical work can become harder to provide – especially when it requires transporting students off campus and into the great outdoors. How much do students and tutors value fieldwork in undergraduate courses, and will its place remain secure over the coming years? This was the subject of two workshops at the Annual Meeting 2012, collectively titled *The Future of Fieldwork in Higher Education* and chaired by BES Education Officer Karen Devine.

THE PRACTITIONERS' PERSPECTIVE

The first perspective was presented by Alice Mauchline from the Enhancing Fieldwork Learning project¹. A 2004 report found that HE fieldwork was in decline, but a survey in 2010 discovered that the trend had halted and was even reversing. However, the tuition fee rise and consequent changes in funding mean change is afoot once again.

EFL have recently conducted a new survey of HE practitioners; the results suggest that the level of fieldwork provision in bioscience courses will not be overly affected, but the way it is funded will change. Many universities are eliminating any additional charge for compulsory course elements. This leaves the need to make fieldwork cost effective, and various strategies have been tried at different institutions. Some ask students to arrange their own travel to the field site, e.g. by lift-sharing; others have encouraged students to 'bring



Fieldwork provides many valuable experiences, such as savouring the British weather...

their own' mobile device (smartphones, tablet computers etc.) for use in the field; some have sought industrial sponsorship. Some universities offer a choice of field courses: those based in the UK are free, whilst travelling abroad comes with a charge. Creative delivery can cut costs, such as making use of habitats on campus; nonetheless, it is acknowledged that at least some residential fieldwork is important to broaden students' experience and promote group cohesion.

There is also concern about making fieldwork sustainable, which provides another reason for making use of local habitats. Departments that do take students abroad may seek to lessen

the impact of doing so, e.g. by carbon offsetting. The increasing number of students enrolled on courses creates its own problems; a particular trip may need to be run several times in a year, increasing its cost financially, environmentally and in terms of staff input.

Nevertheless, the overall outlook for fieldwork is positive. Field skills are important for the employability of ecology graduates; practitioners recognise the importance of fieldwork in a degree, and are concerned with providing research-led fieldwork for their students.

THE STUDENTS' PERSPECTIVE

The increases in tuition fees have also altered attitudes on the part of students, with potential applicants increasingly cautious about choosing their course. Olivia Richardson, from the BES's Education, Training & Careers Committee, presented the preliminary results of a survey into student attitudes towards fieldwork. The results so far and an invitation to participate are in the Box at the end of this report. The survey is still on-going, and there is a risk of bias as participants are self-selecting, but the results so far indicate that students are actively aware of fieldwork and value it as part of their degree.

THE ACCREDITOR'S PERSPECTIVE

In 2011, the IEEM produced a report on addressing the ecological skills gap in Britain²; one of its recommendations was

an accreditation system for HE courses³. Sally Hayns from the IEEM explained the rationale for accreditation: that it would help to produce ecology graduates with relevant skills to enter the industry, and also support courses and assist students in making choices. In addition, accreditation would promote mandatory fieldwork in undergraduate degrees.

Fieldwork holds an important place within the accreditation scheme. It offers benefits such as the application of knowledge; development of practical skills like identification; exposure to unpredictable real-world situations; sharpened interpretation and analytical skills; and introduces students to report-writing. Given such importance, it would seem natural that the scheme should include a minimum number of days' work in the field. However, this has been a controversial issue both

among the development team at IEEM and in the workshop discussion session. Whilst some departments would have to increase fieldwork provision, those that already offer more than this minimum requirement are likely to face internal pressure to cut back.

The IEEM accreditation is closely linked to its newly-published competency framework⁴, so students in possession of an accredited degree would have an advantage in providing evidence for their skills. Whilst the Society of Biology (SoB) already accredits degrees⁵, the IEEM system is substantially different; however, there is the possibility of future collaboration. Paul Trimme, the Society of Biology accreditation manager, explained more about SoB accreditation. The SoB's scheme has three streams: whole organism; molecular; and ecology & environmental science. To qualify for accreditation, a degree must satisfy the scheme's learning outcomes, including a substantial research period worth a minimum of 80 credits. This usually restricts accreditation to degrees that include a professional training year or an integrated MSc, although a 3-year degree could qualify if it included the requisite time in lab or field.

ENHANCING FIELDWORK LEARNING

The second workshop moved on to how the maximum benefit can be derived from time in the field. Julian Park, Derek France and Alice Mauchline from Enhancing Fieldwork Learning led the discussion and brought some gadgets to try out. EFL is now three years old, and promotes the use of technology to enhance the benefits of fieldwork.

A brief discussion initially set out some key components of good fieldwork, such as variety; the chance to learn by trial and error; and good supervision, to help turn trials and errors from disaster to opportunity! In addition to the time in the field, the preparation and follow-up from fieldwork were highlighted as valuable. Two case studies demonstrated creative approaches to fieldwork. The first was a 'sandwalk' or walking lecture, where the lecturer taught the class by walking and talking outside, rather than sitting in a lecture theatre. The second was collaborative fieldwork, in which British, Icelandic and German students participated in a shared field trip to study microbiota in Iceland.



...finding creative solutions: that may look like a bit of wire, but in fact it's an improvised quadrat,...



...and the chance to get excited about trees!

Tablet computers such as iPads have real potential for use in the field. Fitting a ruggedised case offer protection from rain and knocks, and Internet access can be purchased on a daily basis as needed. With each iPad shared between a small group of students, naming the device helps to prevent it getting lost: it's less likely the students will forget about 'Bob' rather than 'the iPad'. These devices offer much more than simply a notepad that doesn't disintegrate in the rain. The iPad can take photos tagged with GPS co-ordinates, which may be tied into a map such as Google Earth. Data can be entered into spreadsheets for preliminary analysis in the field, and papers are readily available for reference as pdfs. In addition, there are a variety of useful apps available for iPads, and a more modest selection for tablets running Android. Pocket Birds ID is an interactive identification app for British birds; I tried to catch it out by entering a description of a black-headed gull (*Larus ridibundus*) in winter plumage, but the app was not to be fooled! Skitch allows students to take a photo then add annotations, whilst Splice provides the ability to make simple videos: useful for creating a reflective log to help keep a project on track. Anything produced on the iPad can be transferred to the cloud using a service such as Dropbox or Sugarsink, ready to be accessed from a computer back at university.

FACING THE FUTURE

Fieldwork is a traditional staple of ecological training and, despite the challenges, it seems this will long continue to be the case. Students and tutors alike value fieldwork; professional bodies such as IEEM and SoB actively encourage it. The use of technology in the field is an emerging area, but it demonstrates that alongside new difficulties, new solutions and opportunities emerge. Perhaps the enduring need for fieldwork is encapsulated by a quote attributed to Einstein:

“In theory, theory and practice are the same; in practice, they're different”.

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- ⁴ <http://www.ieem.net/competency-framework>
- ⁵ <http://www.societyofbiology.org/education/hei/accreditation>

UNDERGRADUATES AND FIELDWORK: ARE RISING FEES AFFECTING STUDENT CHOICES?

Olivia Richardson was a BES Undergraduate Fellow for 2011 and has been mentoring the 2012 group

Fieldwork is an important aspect of learning in Bioscience degrees, and there is concern as to how the provision and uptake of fieldwork opportunities might change in light of the recent student fee reforms. In order to understand how the fee change has impacted student perceptions of fieldwork, the BES is running an undergraduate survey which asks just this. Here, I report the initial results of this survey so far, which compares the perspectives of first year students (who have been affected by the fee change) and second year students (who are unaffected by the fee change).

INITIAL RESULTS

- All students in their first and second year were aware of fieldwork (UK based or overseas) in the course programmes when applying.
- 42.1% of first year students and 32% of second year students were aware of any additional costs when applying.
- A higher proportion of first year students (0.73) had considered fieldwork opportunities as a part of their selection criteria for their course, than had second year students (0.68).
- 94.4% of first year students and 91.3% of second year students said that that they thought fieldwork would be a part of their future careers.

From the available data so far, prospective students who have been affected by the fee change potentially might consider aspects such as fieldwork when applying for a course, more than students did previously.

This survey will continue over the next two to three years in order to create a larger data set with which we will be able to gain a clearer idea of the impact of fee change on undergraduate perspectives of fieldwork.

If you are currently an undergraduate then please fill in the survey. If you have contact with undergraduate students, then please distribute it to as many people as possible – the survey can be found at: <http://www.surveymonkey.com/s/BJYBCB6>.

SCIENCE POLICY

Harnessing Ecosystem Services from Upland Areas



Cheryl Pilbeam / BES Policy and Education Assistant

Upland areas form over a third of the land cover of the UK (Reed *et al.* 2009). Found across the country, from the moors of the south west to the Scottish highlands, they form vital habitats for a number of species and provide for both local and national economies.

Uplands have the potential to play key roles in providing a number of ecosystem services through well-defined policy and management strategies. Threats to these potential services from climate change and tree disease, however, are becoming more prevalent, and policy decisions need to reflect this to ensure environments are robust and resilient.

Water is a key issue in the UK. Recent flooding events have had serious impact in a number of areas, and this trend looks set to continue. This has effects on aquatic ecosystems and the provisioning of water as a resource. Uplands are able to play key roles in the management of water, including alleviating the potential negative effects of heavy rainfall.

Damage from flooding is costly – it is estimated that the economy spends £1.1 billion per year on this, with increased costs likely in the future (Evans *et al.* 2004; National Audit Office 2011).

Upland areas form water catchments – areas of land drained by a water body. The flow of water through these areas affects flooding risk and potential damage downstream. To alleviate these damaging processes, water flow should be slowed to both delay and reduce flood peaks. This can be achieved by the presence of woodlands and trees in upland areas. Large amounts of rainfall in upland areas can lead to the saturation of soils, giving increased water flows through catchments and soil surface runoff. This leads to large water volumes downstream, with sediment deposition causing displacement of water from



channels. Trees can help prevent soils becoming saturated, as their uptake of water keeps the levels of water tables down, helping to reduce the runoff of water and sediment. The interception and evaporation of rainfall by trees can reduce levels of water flow, as less water reaches the ground. The physical barriers provided by trees and woodland in catchments can give resistance to the flow of water downstream.

The presence of trees in upland areas also benefits ecosystems. The take-up of nitrates by trees helps reduce levels downstream, keeping ecosystems healthy. Reduced sediment due to the actions of trees upstream leads to lower levels of turbidity and pollutants in watercourses, and keeps nutrients at a manageable level.

In addition to flood alleviation and keeping water systems healthy, tree presence in uplands can provide a vital service to human populations: drinking water. With growing populations, the provision of a clean, natural supply of water to urban populations is an increasingly difficult and expensive task. In the UK, 70% of drinking water originates from upland catchment areas (Heal 2003). Due to pollution and sedimentation, water undergoes a costly filtering process before distribution. This process is not necessary if upland areas are managed appropriately. One of the largest urban areas in the world, New York City, does just this (see box opposite).

The mountain pine beetle has ravaged lodgepole pine populations down the

western coast of the United States for nearly twenty years. In catchment areas where 80-90% of the canopy has been removed, it could be expected that water quality in downstream areas would be low, with high levels of nitrate present. According to research carried out in Colorado, however, surrounding water bodies were still healthy in these cases. Researchers concluded that small trees and other vegetation which the beetles do not target increased their uptake of nitrate, thus giving normal levels in streams (Rhoades *et al.* 2013). This example serves to highlight that although the responses of ecosystems to change are not easily predicted, communities are not always stable and may be able to adjust in the future.

These future challenges and threats will not just affect water regulation in uplands. Uplands also play a key role in carbon storage and sequestration, storing over 40 per cent of soil carbon. This is mainly in peatlands, which hold 3 billion tonnes of carbon – more than all the forests of France and the UK combined (Worrall *et al.* 2003). This natural storage and uptake capacity is a vital part of keeping carbon from entering the atmosphere, helping to alleviate the potential effects of further climate change. This role is not indefinite, however, and ensuring these areas are protected and expanded is necessary to prevent these carbon sinks from becoming carbon sources. The investment of over £150 million in peatland restoration in the UK between 2005 and 2009, and recent actions to reduce the unsustainable use of peat in horticulture show that steps are being made in the right direction to ensure this resource remains in the future (Reed *et al.* 2009).

Uplands also present unique landscapes and habitats that have ecological value. Many of the UK Biodiversity Action Plan priority habitat types are found in upland areas and contain species of international importance. The range of habitats found in uplands means they form biodiverse areas, supporting a large number of species. Maintaining these levels of biodiversity in light of climate change and its effects could be challenging. To be capable of responding to this, wildlife areas need to form a coherent and resilient ecological network, as recommended by the Lawton review in 2010¹. This could be achieved through

increasing the number of sites of importance in addition to making them bigger, better, and more connected. In response to these recommendations, the Government has created Nature Improvement Areas, of which there are currently twelve across England. Only one of these, however, is situated within an upland area, demonstrating that there is still great potential for improvement.

Over the past two years, there has been a shift in focus towards the recognition of the potential services that upland areas can provide. An uplands policy review by Defra in 2011², emphasised the need to capture the value of uplands for the benefit of communities and the economy, and this was further highlighted when the Government's Natural Environment White Paper³ was set out later that year. This focus is a great start, and combines with several key initiatives⁴ that are looking to outline how ecosystem services from UK uplands will be supported and maintained in the future.

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FOOTNOTES

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- ³ Defra. 2011. The Natural Choice: securing the value of nature
- ⁴ E.g. Upland Ecosystem Service Pilots; Catchment Sensitive Farming Grant Scheme (Natural England)



CLEAN WATER FROM THE CATSKILLS

From a 2,000 square mile catchment area in upstate New York, high quality drinking water is provided for 9 million people. Activities within the defined catchment areas are limited to ensure pollution or discolouration of water does not occur. Use of potential pollutants, such as fertilisers and pesticides must be kept to a minimum, construction activities are restricted, and tree cover is enhanced. In addition to the ecological benefits, this approach shows clear economic benefits, with reduced costs for both water companies and customers.

Future challenges and pressures, however, can threaten all of these benefits. As the exact effects of climate change on ecosystems and their responses to these are not readily known, ensuring ecosystems are healthy and robust will help them to adapt and adjust.

Both changes in weather patterns and tree disease outbreaks could threaten the health of ecosystems in catchments and downstream water bodies in the future. The future UK climate is projected to have reduced rainfall levels in summer, increased levels in winter, and a greater frequency of heavy rainfall events (Hulme *et al.* 2002). This is likely to increase the risk of flooding, and the number of extreme weather events that could affect upland ecosystems. Periods of waterlogging or drought and extreme rainfall events could leave trees damaged and stressed, making them more susceptible to attack and colonisation by pests and diseases. The recent exponential increase in the number of pests and diseases threatening trees in the UK looks set to continue in the future. Although this is a worrying trend, as removal of large areas of tree cover tends to have knock-on effects for downstream water bodies, recent research shows that organisms may be able to show high plasticity and respond to these changes.

BES PRESS COVERAGE

Advancing Ecology with the help of the media

Becky Allen / BES Press Officer
Press@BritishEcologicalSociety.org

Becky Allen reports on some of the media coverage achieved for research published in Society journals during the last year

Evaluating press coverage is more art than science, but it's something we do every year to get an idea of how well the BES press office is doing. We don't have access to a cuttings agency – which means monitoring radio and TV coverage is very difficult – and although Google makes it easy to monitor online coverage, working out online readership is even more tricky, here's what I can tell about how the BES fared in the media in 2012.

First the headlines. In the 12 months to September 2012, we issued 20 press releases for papers published in the five BES journals. The papers we promote through press releases occupy a particular ecological niche. Because they're aimed at a wide audience – the readers of huge global magazines like *Time* and *National Geographic*, the highest-circulation newspapers like *The Sun*, the *Daily Mail*, the *Wall Street Journal*, *USA Today* and the *Times of India*, and opinion-forming radio like BBC Radio 4's *Today* programme – the papers share some common traits.

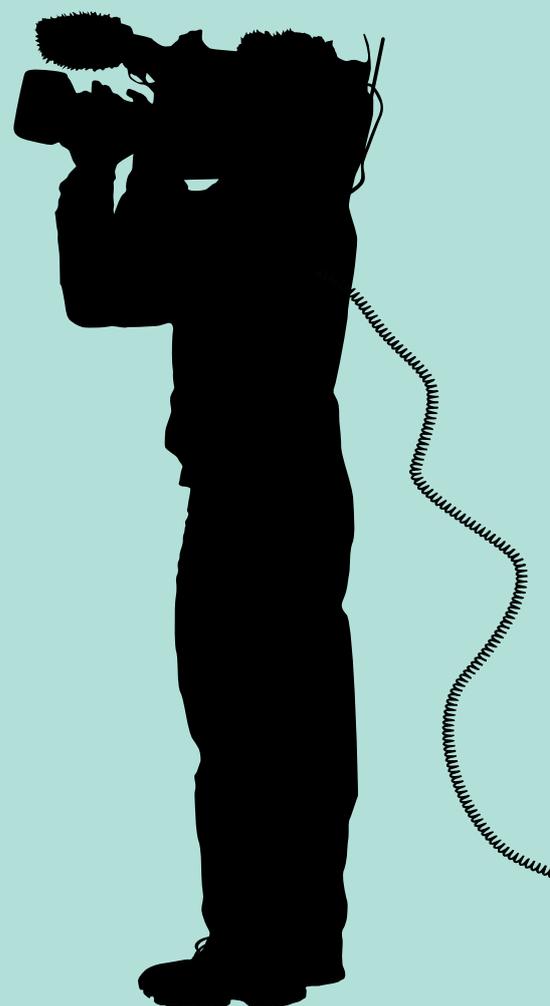
Some of these are obvious. Studies on charismatic species or papers with great photographs often attract journalists' attention. Examples in this category that did well last year include papers on Tasmanian devils, tiger sharks, sea turtles and ladybirds.

But other attributes also sell ecology stories, like interesting audio, a quirky method or a bit of novel technology. An example of the latter last year was a paper describing a new pan-European bat detector. Then there are the dream stories that come along once every couple of years.

Last year we were lucky enough to have a couple of these big hitters, both out of Africa and both boosted by the fact we were able to release them at exactly the right time. One was an intriguing piece of research published in the *Journal of Animal Ecology* about the impact that giving up meat by Orthodox Christians in Ethiopia during Lent has on the diet of hyenas. The research involved picking up hyena droppings and poo, like sex, often helps promote ecological research. We released it just before Easter 2012 and it netted more than 50 cuttings, including lots of US newspapers and a package on the *Scientific American* podcast. The lead author, an Ethiopian PhD student, had great fun talking to reporters and told us: "Thank you so much. I am really very much proud of the news."

The second was a paper about dramatic declines in frankincense production published in the *Journal of Applied Ecology* just before Christmas 2011. Like the August Parliamentary recess, the run up to Christmas and New Year is a lean time for journalists hunting for news. The coverage was stupendous, with stories in more than 200 newspapers, radio and TV stations in the UK, Europe, North America and Australia, making it one of only four papers in BES journals over the past 10 years to get this level of coverage.

The research featured on BBC Radio 4's flagship news programme *Today*, which has an audience of around 6 million, and in every UK newspaper including *The Sun*, which is read by 3 million people every day. It was developed by three news agencies – UPI, PA and Reuters – which meant the story was syndicated



in almost every US, Canadian and Australian paper. *Wired*, *Time* magazine, *Fox News*, *France24*, *Scientific American* and even the *Huffington Post* covered the story and mentioned the BES. All told, the newspapers in which the story appeared have a combined circulation of 23 million. It's a crude but common way of measuring the impact of press work.

The numbers are impressive, but what's in it for the author, apart from a lot of time spent answering the same questions from dozens of journalists? For starters, the public gets most of its information on science via the media and for most, the media are the only way they're aware the BES exists, so media coverage is one way of "advancing ecology and making it count". Sometimes, media coverage enables authors to engage directly with the politicians and policy makers they wish would read their research. As a result of a press release on a paper describing research in New Zealand on the impact of Marine Protected Areas on numbers of Hector's Dolphins, for example, the author had a chance to debate the issue directly with the fisheries' minister on national radio.

But there are other reasons for ecologists to promote their papers via the media. If research is publicly-funded, many ecologists think they have some sort of responsibility to tell the public about their research. It's also a great way of getting, or building on, media training. Lastly, it can be great fun.

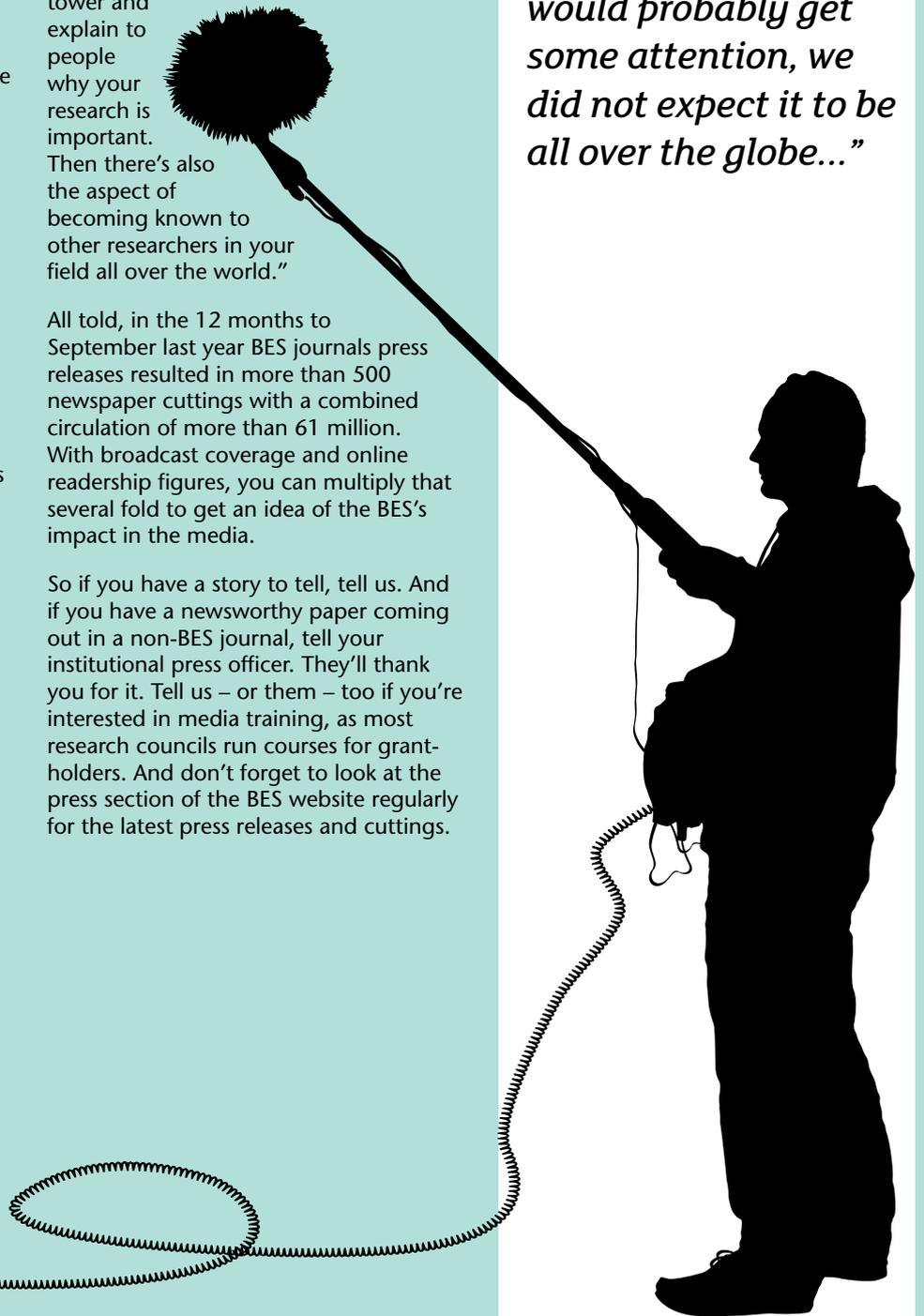
Another ecologist, whose work on grasshoppers changing their songs in response to traffic noise (published in *Functional Ecology*) we covered in a press release last year, Dr Ulrike Lampe of Bielefeld University in Germany, told us: "We were really surprised about the amount of coverage that we got in response to our article. Although we suspected that it would probably get some attention, we did not expect it to be all over the globe. In retrospect, it was a very good decision to do an international press release because we got so much feedback on our research from people all over the world.

"For us as scientists it was a relatively small effort to contribute to the press release, but the reward was huge in comparison. Doing the press release got us into contact with other scientists that we didn't know before. We got feedback and questions from them that gave us new ideas and perspectives on our own research. The press release was also the perfect way to communicate what we're doing to the general public, which should be obligatory for scientists. It is a great opportunity to get out of the ivory tower and explain to people why your research is important. Then there's also the aspect of becoming known to other researchers in your field all over the world."

All told, in the 12 months to September last year BES journals press releases resulted in more than 500 newspaper cuttings with a combined circulation of more than 61 million. With broadcast coverage and online readership figures, you can multiply that several fold to get an idea of the BES's impact in the media.

So if you have a story to tell, tell us. And if you have a newsworthy paper coming out in a non-BES journal, tell your institutional press officer. They'll thank you for it. Tell us – or them – too if you're interested in media training, as most research councils run courses for grant-holders. And don't forget to look at the press section of the BES website regularly for the latest press releases and cuttings.

"We were really surprised about the amount of coverage that we got in response to our article. Although we suspected that it would probably get some attention, we did not expect it to be all over the globe..."



SPECIAL INTEREST GROUP NEWS

Launch of new Special Interest Group:

PLANTS, SOILS, ECOSYSTEMS

Franciska de Vries



In October, I attended the aboveground-belowground interactions conference at the Charles Darwin House that was jointly organised by the BES, the SEB, and the Biochemical Society. In the year leading up to the event I had been thinking that there should be a Special Interest Group on plant-soil interactions or soil ecology, but at this meeting, it really struck me: there is so much interest for this field! The conference was well-attended and I felt inspired, so I asked Emma Sayer whether she thought it was a good idea to set up a new special interest group, and whether she'd want to be involved. She was very enthusiastic, so there and then we wrote a proposal (the deadline for the SIG budgets was actually later that week), and our special interest group Plants, Soils, Ecosystems was born!

Unfortunately, it was too late to organise an official launch event at the 2012 Annual Meeting, but we did have a poster, flyers, and sign up list in the coffee area (thanks Emma!), and we organised an informal social event in the Slug and Lettuce on Wednesday. Also, I was on a bit of a mission and I mentioned the SIG at every opportunity possible during the conference! As a result, the social at the Slug and Lettuce attracted a very good turn out, and in addition to drinking beer and eating Mediterranean platters, we also came up with a list of ideas for a workshop to be organised in October. Moreover, already 64 people have signed up for the email list, we have 35 followers on Twitter, and 44 likes on Facebook!

PLANTS, SOILS, ECOSYSTEMS

A new BES 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@gmail.com); Emma Sayer, The Open University; Paul Kardol, Swedish University of Agricultural Sciences; Tim Daniell, The James Hutton Institute; Dave Johnson, Aberdeen University; Mike Whitfield, Lancaster University; and Sarah Pierce, Imperial College, as student representative. Richard Bardgett, The University of Manchester, will support the committee in an advisory role.

Activities for 2013

18 March 2013: *Rhizosphere Interactions* meeting at The James Hutton Institute, Invergowrie, Dundee. Keynote speaker is Alex Dumbrell, the University of Essex: 'Recent advances in the understanding of the community ecology of arbuscular mycorrhizal fungi'. For more information see <http://www.soils.org.uk/events/event-131/> or contact Tim Daniell Tim.Daniell@hutton.ac.uk. Plants, Soils, Ecosystems will award a bottle of wine for the best presentations!

INTECOL 2013: Symposium *Soil biodiversity and ecosystem function: recent advancement and new challenges*, organised by Richard Bardgett and Wim van der Putten

2-3 October 2013: Meeting/workshop in Charles Darwin House, London.

Topic to be announced!

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.



British Ecological Society
Agricultural Ecology Group

@BES_aeg

Barbara Smith

The recent AeG Annual Meeting was both successful and enjoyable. One very positive outcome was that Chantel Davies offered to take-on communications for the group and we now have both Facebook and Twitter accounts as well as a regular newsletter. You can find links to all three on the AeG website. If you have any news or research highlights suitable for the newsletter, please send them to Chantel at chantel.davies@STC-NYORKS.CO.UK. I am also delighted to say that Fran Sconce has agreed to be student rep for the group and she introduces herself below.

2013 is already looking like an eventful year for the group: three meetings are confirmed – booking links and contact details are on the AeG webpage:

23 – 25th April. Environmental Management on Farmland

Principal organiser: Nigel Boatman, FERA. To be held at Forest Pines Hotel, near Brigg, North Lincolnshire in collaboration with the Association of Applied Biologists.

Agricultural land is under pressure as never before. Increasing concerns about food security, driven by the need to feed a growing population, are balanced by the need to conserve our environment and maintain the ecosystem services it provides. These issues are recognised by policy makers, and two of the key ambitions presented in the recent Natural Environment White Paper produced by the UK Government were "protecting and improving our natural environment" and "growing a green economy". Proposals for maintaining environmental management on farmland put forward for the forthcoming Common Agricultural Policy reform

revolve around the 'greening' of the CAP. This would involve the attachment of additional environmental conditions to farm subsidies, including the provision of 'Ecological Focus Areas' covering up to 7% of the farmed area. To date, the main vehicle for environmental conservation on farmland has been agri-environment schemes underpinned by cross-compliance, but voluntary approaches such as the 'Campaign for the Farmed Environment' have also played a part. As we approach the next phase of the CAP and a new set of Rural Development Plans, it timely to review the evidence gathered from research and monitoring programmes, and how this informs the potential roles of existing and novel approaches to environmental management in the agricultural landscape of the future.

Summer 2013. Farmer-Researcher Open Event, Cumbria

New Directions in Agriculture-Environment Schemes: Ecosystem Service Delivery in Extensive Farming Systems

Principal organiser: Beth Brockett, Lancaster University.

An interdisciplinary research team from Lancaster and Manchester Universities are planning an open farm event in association with the British Ecological Society, the Cumbrian Farmers' Network and local farmers. This event will bring together policy makers (from organisations such as Natural England, the National Trust and the Lake District National Park), academics with a special interest in ecosystem service research, farmers and farmer representatives to discuss:

- The policy landscape around agri-environment schemes and ecosystem services;
- Novel technologies and cutting-edge scientific research for mapping, modelling and monitoring the delivery of ecosystem services;
- How farmers can participate in and contribute to academic research and policy development;
- Ideas for developing this collaboration.

18th – 19th December. Re-thinking Agricultural Systems in the UK

Principal organiser: Barbara Smith, Game & Wildlife Conservation Trust.

A collaboration between three BES special interest groups (Agricultural Ecology, Computational Ecology and Forest Ecology) and the Association of Applied Biologists to be held at St. Catherine's College, Oxford.

This will be the first in a series of three strategic meetings. This first meeting aims to present practical approaches, however radical, for the generation of more resilient agro-ecological systems. An important feature of the meeting will be that we will discourage the use of labels so that discussion of techniques and novel ideas is unhindered by possibly negative preconceptions. These proposals will be tabled in preparation for two further meetings to discuss the ideas generated, firstly with practitioners (e.g. farmers and NGOs) and secondly with policy-makers and industry.

There will be four thematic sessions: Fundamental Ecological Principles in Agricultural Systems; Systems Thinking in Agricultural Ecology; Resource Efficiency in Agricultural systems; Land sparing vs Land sharing. These will be followed by workshops and a technology fair.

Invited speakers include: Jonathan Foley (Director of the Institute on the Environment, University of Minnesota, USA); Tim Benton (UK Champion for Global Food Security & Professor of Population Ecology, University of Leeds); Bill Sutherland (Professor of Conservation Biology, University of Cambridge).

Meeting report:

The 1st BES-Agricultural Ecology Annual Meeting

Report by Dr Pietro (Pete) Iannetta, James Hutton Institute (Principal Organiser) contact: pete.iannetta@hutton.ac.uk



On the 1st November 2012 approximately 40 scientists gathered at the British Ecological Society headquarters at Charles Darwin House in London to take part in the Agricultural Ecology Special Interest Group (AeG) 1st Annual meeting, Building a Sustainable Agroecology Group. The delegates came from a wide range of agroecological experience and perspectives that included agri-industry, -consultancy, -governmental and non-governmental and higher education establishments. The gathering marked a landmark stage of the development of AeG and at a time when issues of 'sustainable intensification' are high on political agendas both nationally and internationally. In total, there were 25 wide-ranging presentations at the one and a half-day meeting.

The meeting was opened by the SIGs founder member, Professor James Bullock of the Centre for Ecology & Hydrology, who presented an excellent appraisal of the state-of-the-art for agroecology research, Maintaining and restoring ecosystem services in agricultural landscapes. Among his many messages was a key question, "does biodiversity support food production?". The expected answer might be a resounding 'yes', and especially from agroecologists. However, it can be strongly argued that the peer-reviewed evidence base is still too weak to justify this. Prof. Bullock also emphasised the need for agro-ecologists to increase effective communication with primary stakeholders and particularly agronomists and secondary stakeholders, especially farmers as, "farmer training and engagement are vital for implementation of evidenced based strategies".

More thought- and action-provoking notes on the utility of biodiversity were offered by the second plenary speaker, Professor Martin Wolfe of The Organic Research Centre at Elm Farm in a talk entitled Trees were our past – could they be our future? Prof. Wolfe highlighted many innovative and practical approaches in his integrated-cropping strategies that cleverly combined complementarity and multifunctional traits from a wide range of species in an allied agroforestry-arable system. The farm presents a powerful commercial demonstration and its success is attributed to Prof. Wolfe's working-definition of biodiversity which

he chose to define as, "increasing the separation of like types". It would also appear that the capability of Elm Farm as an experimental platform has still to be realised, since it would seem that Prof. Wolfe is not (yet) besieged by agroecologists wishing to monitor 'the' fluxes and flows.

The meeting structure had a large open- discussion element to it and it was at one of these sessions that the point was extended by Geoff Radley (Natural England) who emphasised the need for research that did not simply restate the problems of agriculture nor the applications of research findings that amounted to the application of 'band-aids' to an ailing system. Rather he stressed that the underlying issues which needed to be addressed lie at a system level. (Hence the meeting: Re-thinking Agricultural Systems in the UK, details above).

Selected presentations from the meeting have been posted on the AeG group website. The next BES-AeG Annual Meeting is scheduled to be hosted by Nicola Randall at Harper Adams University College, November 2013.

The 1st BES-Agricultural Ecology Annual Meeting: a student's experience

Francisca Sconce



At the start of October 2012 I began a PhD at Harper Adams University College looking at Collembola in Agroecosystems. Having joined the BES several years ago whilst an undergraduate, I looked at the website for information and groups that related to my new focus. The Agricultural Ecology SIG seemed perfect and they were due to host their first ever annual meeting. Not really knowing what to expect and feeling rather insecure as a new PhD student, I decided to attend.

A meeting with fewer than 40 delegates was a novel experience, compared with the hundreds that attend the BES Annual Meeting. I had a chance to talk to everyone and felt that my presence and contribution was valued, despite my inexperience. From ecologists in universities, research institutes, NGOs, consultancy and industry, the range of presentations was a fascinating

opportunity to see potential career paths in Agroecology. It also showed, more importantly, how crucial it is that these groups are in dialogue with each other.

There was an air of dynamism about the meeting: we sat around small tables which encouraged discussion, post-it notes were provided to write down ideas and there were break-out sessions focussing on different aspects of the group's future. During the session I attended, I learnt more about the current issues of sustainable agriculture than I had in a month's worth of reading, which may though reflect more on my developing research skills! The living poster session was a new concept to me and one that I definitely would like to join in with in the future. Alex Varah in particular explored this concept in a poster with only images, demonstrating but not distracting from her presentation in front of it.

The final discussion focussed on how to take the group forward. New committee members volunteered themselves and, somehow, I am now the student rep. In this role I will provide feedback between the committee and students, promote the group directly to students in Agroecology and hold a student AeG meeting, where we can present our work and network amongst our peers, strengthening the next generation of Agroecologists. Join us!

PEATLANDS RESEARCH

Ian Rotherham

Sphagnum Mosses Identification Workshops

Autumn 2013
To be held in the Sheffield area



Sphagnum field visit to White Path Moss November 2012. © SYBRG 2012.

In 2012 the Peatlands Special Interest Group organised two very successful and informative 1-day workshops based at Longshaw on the moorland fringe of the Peak District. The level of interest was such that Professor Ian D. Rotherham and colleagues are organizing a further two, linked, 1-day workshops with field visits to sphagnum-rich different sites within the Sheffield area during autumn 2013. The first workshop will be an introduction to the ecological importance of sphagna, their habitats and field identification of four to six of the commoner species. The second workshop will focus on looking at the detailed characteristics of sphagnum mosses, their morphology and microscopic features as well as the identification of 10 or more species in the field. The workshops will include field sessions and there will be opportunity to examine species back in the classroom. The first workshop will be suitable for beginners and for those who want to brush up on their skills. The second workshop will assume some basic knowledge of sphagnum mosses.



Examining specimens in the classroom November 2012. © SYBRG 2012.

For more information and to be sent a booking form for the workshops, please contact:

Christine Handley

BaLHRI / SYBRG Events Co-ordinator,
c/o HEC Associates Ltd.,

Venture House, 103 Arundel Street,
Sheffield, UK, S1 2NT

Tel: 0114 272 4227;
00 44 (0)114 272 4227

Email: christine@hallamec.plus.com
Visit our Website: www.ukeconet.co.uk

War & Peat: The military heritage of moors, heaths, bogs and fens
The Sheffield Showroom & Workstation 4th – 6th September 2013



Burbage Moor in the Peak District National Park and western edge of Sheffield: Iron Age Hillfort to WW2 training ground and a SSSI, SAC and SPA. © SYBRG 2012.

Professor Ian D. Rotherham and colleagues are organising a major event on the theme of the military heritage of Britain’s moors, heaths, bogs and fens. The conference will bring together speakers and poster presentations from a range of disciplines, military history, landscape history, environmental conservation, ecology, history, heritage, tourism, archaeology, and geography.

The 3-day conference will look at:

- The impacts of military activity and defences on both upland and lowland moors, heaths, bogs and fens;
- The evidence and heritage associated with archaeology and landscape history of military activity from different eras;
- The roles of wetlands in warfare and in military campaigns;
- The portable antiquities of military activity in moors, heaths, bogs and fens;
- Problems and issues of managing this heritage; and
- The recovery and recording of forgotten or ‘secret’ history;
- The importance of oral histories; and
- The tourism potential of this heritage.

Oral and poster presentations will relate to specific small case study areas, major conflicts or different branches of the military including home defence, aviation, etc, as well as papers on wider landscape or heritage issues.

For more information or offers of papers and to be sent a booking form for this landmark event, please contact:

Christine Handley
 BaLHRI / SYBRG Events Co-ordinator,
 c/o HEC Associates Ltd.,
 Venture House, 103 Arundel Street,
 Sheffield, UK, S1 2NT
 Tel: 0114 272 4227;
 00 44 (0)114 272 4227
 Email: christine@hallamec.plus.com
 Visit our Website: www.ukeconet.co.uk

Waxcaps and Wood-pasture Fungi – Identification Workshops
Autumn 2013



Wood-pasture on the Longshaw Estate. © SYBRG 2010.

Professor Ian D. Rotherham and colleagues are organising another 1-day workshop with a field visit during autumn 2013 following on from their successful event in 2012. The workshop will be an introduction to the ecological importance of wood-pasture fungi especially waxcaps at one of the UK’s best sites for the species. The day will include field identification of species as well as looking at their characteristics in the classroom. The workshop will be suitable for beginners, those who want to brush up on their field skills, and for those who want to gain a greater understanding of the importance of wood-pasture fungi as indicators of an older landscape.



Blackening Waxcap (Hygrocybe conica). © Paul A. Ardron 2012.

For more information and to be sent a booking form for the workshops, please contact:

Christine Handley
 BaLHRI / SYBRG Events Co-ordinator,
 c/o HEC Associates Ltd.,
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 00 44 (0)114 272 4227
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 Visit our Website: www.ukeconet.co.uk

Shadows & Ghosts: Lost Woods in the Landscape

Sheffield Hallam University
17th – 18th May 2013



Upland veteran Rowans in the Peak District National Park. © Ian D. Rotherham 2012

Professor Ian D. Rotherham and colleagues are organising a 2-day event on Woodland Shadows and Ghosts – the lost woods in the landscape. The event will start with a field visit on Friday 17th May. On Saturday (18th) the indoor event will bring together speakers from a range of disciplines and include an afternoon panel discussion to review and develop ideas around ancient trees, ancient woods, wood pasture and the ideas of shadows, ghosts and retired veterans. This will develop ideas from previous work and draw together

suggestions from practitioners and senior policy makers to examine issues of concern and lay the foundations for a major funded project to run in the next few years.



Medusoid Oak among Gritstone boulders in the Peak District National Park. © SYBRG 2012.

For more information or offers of papers and to be sent a booking form for this landmark event, please contact:

Christine Handley

BaLHRI / SYBRG Events Co-ordinator,
c/o HEC Associates Ltd.,

Venture House, 103 Arundel Street,
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Tel: 0114 272 4227;
00 44 (0)114 272 4227

Email: christine@hallamec.plus.com
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@BESForests

Markus Eichhorn

A busy year ahead is planned for the Forest Ecology Group, with a workshop at the INTECOL meeting this summer on Priorities in Global Forest Conservation (see the Forthcoming meetings section p12 for more) and a range of other planned meetings. To keep up to date on developments make sure you sign up to receive our Bulletin at www.jiscmail.ac.uk/forestecologygroup or follow us on Twitter @BESforests. Finally, this is the last year in which I will

be running the group, with Dan Bebbler (d.bebber@exeter.ac.uk) taking over in the autumn. If you have ideas for what you would like the group to do for you in 2014 then please let us know!

Shadows & Ghosts: Lost Woods in the Landscape: see Peatlands Research above

Fungi for forest ecologists workshop

Fungi are vital to forest ecosystem functioning through their roles as plant symbionts and decomposers. The impact of fungi within forests is often not fully acknowledged or understood within mainstream forest ecology. This workshop will enable forest ecologists to learn directly from mycologists about the basic functions of fungi within forests, and how this knowledge might be applied to, or influence, their research. Content will focus on saprotrophic and mycorrhizal fungi. The day will consist of taught sessions in the morning, followed by a field visit and final discussion. The course will take place in Oxford in autumn 2013 (date TBC), run by Dr Martha Crockatt (Earthwatch), tutored by Prof Lynne Boddy (Cardiff University) and Dr Andy Taylor (James Hutton Institute). For further details or to register your interest please contact mcrockatt@earthwatch.org.uk

Silvicultural approaches to PAWS restoration and plantation diversification

The Forest Ecology Group are planning to hold a two-day meeting in summer/autumn 2013 (dates TBC) in Helmsley, North Yorkshire on the subject of silvicultural techniques for (a) gradual restoration and enhancement of conifer PAWS (Plantations on Ancient Woodland Sites) and (b) diversification of conifer stands on other sites by introduction of native species. The latter is important in the context of current disease threats to pine and larch plantations and the need to enhance their resilience. The meeting will include an indoor speaker session with invited presentations from Forestry Commission, Natural England, Woodland Trust and private forestry consultants. There will then be visits to woodlands in the locality (private, FC and Woodland Trust). Anyone interested in taking part should contact the organiser, Scott Wilson (scottmcgwilson@hotmail.com, 07798 693303).

Tropical Field Courses in South China

The Program for Field Studies in Tropical Asia (PFS-TropAsia) is hosting its second Plants of Tropical Asia field botany course from 4-23 April at Xishuangbanna Tropical Botanical Garden (Chinese Academy of Sciences). Over the three weeks participants will learn to identify 50 families and approximately 200 genera based on vegetative characters. The course also includes a lecture series on tropical plant biology and field excursions to forest habitats in Xishuangbanna. The Forest Ecology group has supported the attendance of two students from Vietnam and Myanmar.

In October-November the PFS-TropAsia will again hold its annual Advanced Field Course in Ecology and Conservation. This is a 6-week course and includes a substantial component on independent field research. For further details about courses offered by PFS-TropAsia please refer to their webpage (www.pfs-tropasia.org).

Joint Meeting 2013: Farm Woodland Forum and BES Forest Ecology specialist group

Falkland Centre for Stewardship,
Falkland, Fife, Scotland June 13th and 14th 2013

The past, present and future of agroforestry in the UK

Agroforestry is a concept of integrated land use that combines elements of agriculture and forestry in a sustainable production system. An emphasis on managing rather than reducing complexity promotes a functionally biodiverse system that balances productivity with environmental protection.

The Farm Woodland Forum is an informal group of about 220 people with a common interest in farming with trees in all its aspects. It aims to facilitate the generation and exchange of information that supports best practice in and improves opportunities for farming with trees, and holds annual meetings at which there are presentations to describe the latest research, development and practice related to agroforestry and farming with trees. This year's meeting, which will be joint with the FEG, will be

in Fife, in Scotland, and will include a day of presentations and at least one day of field visits to nearby agroforestry and farm woodland site. More details on the meeting and booking information will be soon available on the FWF website:

www.agroforestry.ac.uk



@BESMacroecol

**Adriana De Palma, Tom Webb,
Sally Keith and Nick Isaac**

If there were any doubts about interest in a Macroecology Special Interest Group (SIG), they were certainly banished at the BES Annual Meeting. The Macroecology sessions were filled with fascinating talks and posters, and our workshop on Big Data for Big Ecology was exceptionally popular with over 100 people crowding into a room designed for 50. However, it was not just the use of the buzz-term 'big data' that filled the chairs (and the floor, and part of the corridor): the workshop provided crucial information and insightful opinions on accessing large and complex ecological datasets.

To align with the aims of the SIG, the workshop concentrated on promoting data access. Paula Lightfoot, a data access officer at the National Biodiversity Network (NBN) Trust, spoke about information that can be retrieved through NBN and recent simplifications to the processes of both requesting and downloading some of the 80 million records that the NBN holds. Charly Griffiths, from the Marine Biological Association of the UK (MBA), gave an overview of the invaluable datasets held in Plymouth, including one of the most spatially and temporally extensive datasets in existence: the Continuous Plankton Recorder data held by SAHFOS. Using multiple large datasets such as these may seem like a daunting task, but Scott Chamberlain, from Simon Fraser University, put our minds at ease with his practical introduction to the R-based tools provided by ROpenSci, which aim to improve the

efficiency, transparency and replicability of data access and manipulation.

On the flip-side, making your own data publicly available can be a challenge, although solutions are being developed. Mark Hahnel from Figshare explained how this application can be used to share – and make citable – data, code, figures and even academic posters and conference talks, while the author retains ownership. The team behind ROpenSci also actively encourage open access data and transparent analyses, offering packages that enable researchers to publish R code documenting all stages of analysis, from data access to visualisation of results. However, perceived barriers to sharing data persist; for instance, researchers may doubt that the data are actually theirs to share. The conversation obviously caused a stir because it continued on various social network sites.

Another highlight of the BES Annual Meeting was the Macroecology SIG social, which was held at a charming riverside pub in Birmingham city centre. All were welcome, and both new and old members joined us for an evening of good food and wine, which was entirely free for students (join up now!). Here, we also talked about the future of the SIG, encouraging our members to drive the direction of the group. We focused on plans for our 2013 SIG Annual Meeting, which will be held in Sheffield on the 10th and 11th of July. We were excited to announce that the plenary lecture will be delivered by Ethan White from Utah State University, after which members will be encouraged to present their own work. The meeting will include a much requested day-long workshop on spatial analysis in R. We are also planning a major presence at INTECOL 2013 in London (18th to 23rd of August): our symposium on Reinvigorating macroecology with process-based approaches, features a keynote address by Brian McGill; Thiago Rangel will present a workshop on spatial analysis and/or process-based models (topic to be finalised); and we will be hosting a joint social with macroecologists from around the world.

The Macroecology SIG continues to be an engaging community, with over 150 members who regularly share job opportunities, exciting new research, and opinions on our Facebook page and on Twitter (@BESMacroecol). The

group offers a fantastic opportunity for researchers at all levels, including students, to both improve skills and knowledge through our workshops and meetings, and to foster relationships and collaborations. Join us as we move forward in 2013, or visit <http://bit.ly/wrTRLc> to find out more.

Adriana De Palma is at Imperial College London, Tom Webb is at the University of Sheffield, Sally Keith is at James Cook University and Nick Isaac is at the Centre for Ecology and Hydrology.



**British Ecological Society
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.

BES Annual Meeting – Birmingham December 2012

The Plant Environmental Physiology and Ecological Genetics special interest groups teamed up to organise a free guided tour of the Birmingham Botanic Garden during the BES Annual Meeting in Birmingham. The tour lead us through tropical rainforest, subtropical, Mediterranean, and arid glasshouses, as well as the expansive outdoor gardens. We were even treated to the impressive tropical pool's goldfish collection and lawn aviary! Our guide discussed plants of economic and ornamental interest and provided a detailed history of the botanical gardens. Importantly, the tour offered a unique opportunity for these two special interest groups to interact.

<http://www.birminghambotanicalgardens.org.uk>

A small gathering of Plant Environmental Physiology group members met for dinner afterwards to discuss opportunities for outreach, workshops, publicity, and expanding membership within the special interest group. Many interesting ideas were made which will be acted upon later in the year so watch this space!



INTECOL 2013 – London

The PEPG will be present at the 11th INTECOL Congress, Ecology: Into the next 100 years from 18-23 August 2013. This event will be held in London as part of the centenary celebrations of the British Ecological Society.

2nd Annual BES – PEPG mini symposium – Manchester

After the success of the 1st symposium in London we are going to hold our second PEP mini-symposium at the University of Manchester (9th-10th September 2013). Dr Giles Johnson giles.johnson@manchester.ac.uk is the local organiser. Details of the meeting will be posted on our website, mailing list and Facebook page in Spring 2013.

International Workshop on Plant Environmental Physiology techniques

Last year saw the reintroduction of the international workshop on Plant Environmental Physiology techniques in Lisbon, Portugal. It was a huge success with nearly 100 people being involved during the week. Due to the high global demand for places on this workshop we are going to repeat the event in 2014 – we want to make this THE International workshop to attend if you study plant environmental physiology.

SEB's 2013 Plant Symposium entitled "Oxidative stress and cell death in plants: mechanisms and implications" is taking place from the 26th – 28th June in Florence, Italy. This is likely to be of interest to environmental physiologists.

Research on oxidative stress and cell death in plants spans a wide range of disciplines, including stress physiology and biochemistry, cell and developmental biology, plant-pathogen interaction, systems biology and computational biology. The conference will assemble over 150 scientists and will consist of 4 sessions full of pioneering advances in major topics related to oxidative stress and cell death in plants. The conference will also devote particular emphasis to the contribution of a variety of model organisms and systems to our understanding of these important processes in plant biology.

The meeting will serve a valuable forum to share and discuss latest findings, establish new collaborations and identify new directions of research. We are confident that the special atmosphere that we aim to achieve will encourage researchers to think beyond the confines of their own research, and look more globally on different mechanisms and implications of oxidative stress and cell death and interactions between them.

Registration and abstract submission are both open – you can read more on our website at: http://www.sebiology.org/meetings/plant2013/oxidative_stress.html

The deadline for abstract submissions is the 26th of April and the Early bird registration deadline is the 10th of May.

May we also take this opportunity to remind you to promote the PEP group with academic colleagues, postdocs and PhD/MSc students etc whether starting this year, or by now well established. Encourage them to visit the website and sign up to the jiscmail email forum at:

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

or directly at:

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

And join the new Facebook page at:

The new PEPG Facebook page has been a success, with 79 likes from 14 countries, a reach on some posts of nearly 200 (reach is the amount of unique people who view it.)

<http://www.facebook.com/PlantEnvironmentalPhysiologyGroup>

PEPG CONTACTS:

Matt Davey – mpd39@cam.ac.uk

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

Howard Griffiths – hg230@cam.ac.uk

Carla Turner – communications officer – please contact Carla with news and events you would like advertising on our website, email list and the PEPG Facebook page carla.turner@sheffield.ac.uk

Lucy Rowland – Postdoc rep l.m.rowland@sms.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



LETTERS TO THE EDITOR

FROM DUNCAN POORE

Formerly Director of the Nature Conservancy, Director-General of IUCN and Professor of Forest Science and Director of the Commonwealth Forestry Institute at the University of Oxford

I have been very interested to read Peter Ayres' biography of Arthur Tansley and have found the four reviews you commissioned a valuable addition. I am writing to you because I find one significant item is almost totally absent. This is the fundamental difference of opinion between Tansley and the continental phytosociologists on the principles that might be used in the classification of vegetation. Whereas Tansley used vegetation dynamics (succession and seres) the continentals developed systems and hierarchies based on floristic affinities. This was a significant gulf which Tansley showed no inclination to bridge.

The topic is briefly mentioned in passing in the last chapter of the book. "Shortly before his death Tansley was still lamenting the lack of harmony between the British (and American) and Continental approaches" (Ayres, p193). In the reviews there is one sentence in van der Maarel: "One of the details presented by Ayres and unknown to me was Tansley's lamentation of the lack of harmony between the British and Continental approaches". An attempt to persuade British ecologists was made by Tuxen *et al* by preparing a phyto-sociological account of Irish vegetation resulting from the International Phytogeographic Excursion but this did not convince the British that the methods were applicable to British vegetation.

It was at this stage that Harry Godwin asked me for my PhD to make a study of the continental literature, visit Braun-Blanquet and possibly others, produce a critical review of the method and see if it could be applied in Britain. The result was an appraisal of the literature and my study of the Breadalbane mountains in Perthshire where I showed that the method, slightly modified, could apply there. I wrote this up in four papers for the *Journal of Ecology* in the early 1950s and gave a lecture to the Botany Club in 1953 on the whole subject with Tansley in the audience. I do not know if he was influenced or not for I was working in Scotland at the time and he died soon after; but there was a sequel in Britain.

In 1953 Donald McVean and I extended the work on the Breadalbane hills using the same methods to cover the plant communities of the Scottish Highlands and the result was written up by Donald McVean and Derek Ratcliffe and published as a Nature Conservancy monograph in 1962. There was further development in 1973 when David Valentine pressed the Nature Conservancy to prepare a comprehensive classification of British vegetation to be used in the description of SSSIs and nature reserves. I began pressing for this in 1973 and it was eventually realized as the National Vegetation Classification. You can find an independent account of these developments in John Sheail's history of the British Ecological society, pages 163-4. All this is no doubt past history but it is nevertheless interesting to know how methods that are essentially phytosociological come to be comprehensively used in the description of British vegetation.

FURTHER READING

M E D Poore (1955) The use of phytosociological methods in ecological investigations. I. The Braun-Blanquet system *Journal of Ecology* 43: 226-244

M E D Poore (1955) The use of phytosociological methods in ecological investigations. II. Practical issues involved in an attempt to apply the Braun-Blanquet system. *Journal of Ecology* 43: 245-269.

M E D Poore (1955) The use of phytosociological methods in ecological investigations. III. Practical applications. *Journal of Ecology* 43: 606-651.

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John Sheail (1987) *Seventy-five Years in Ecology: The British Ecological Society*. Blackwell Scientific Publications, Oxford. 302pp

FROM JOHN R. PACKHAM

Emeritus Professor of Ecology, University of Wolverhampton.

The *Bulletin* of December 2012 has four reviews of *Shaping Ecology: the Life of Arthur Tansley* by Peter Ayres (2012). Three of these fully acknowledge his remarkable contribution to the early development of ecology, including the foundation of the British Ecological Society as well as the

establishment of the *New Phytologist* and the *Journal of Ecology*. Tansley's friendship with prominent American ecologists and his correspondence with them, particularly concerning the development of the ecosystem concept, had an important influence on the development of ecology in the first half of the twentieth century, as did the publication of his magisterial *The British Islands and their Vegetation* in 1939. This remains valuable to this day, as do his other publications.

In his review Eddy van der Maarel, however, takes the view that Tansley had little influence in mainland Europe. He devotes much of his review to recounting contributions made by continental colleagues, many of whom did make important advances, while ignoring those of major British contributors. That of Raunkiaer, whose *The Life Forms of Plants and Statistical Plant Geography* was published at Oxford in 1934, was very valuable, but the CSR theory of Philip Grime (Grime, 1979; Grime, Hodgson and Hunt, 1988) and the computer-driven analyses of vegetation pioneered by Mark Hill (Hill, Bunce and Shaw, 1975; Hill 1979 a and b) and their associates were equally important.

As a British ecologist who, like van der Maarel, has benefited from working in Sweden, I find it impossible to avoid the conclusion that his review fails to do justice to the pioneering contribution made by Sir Arthur Tansley F.R.S.

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Projecting Responses of Ecological Diversity in Changing Terrestrial Systems (PREDICTS): *Can you help?*

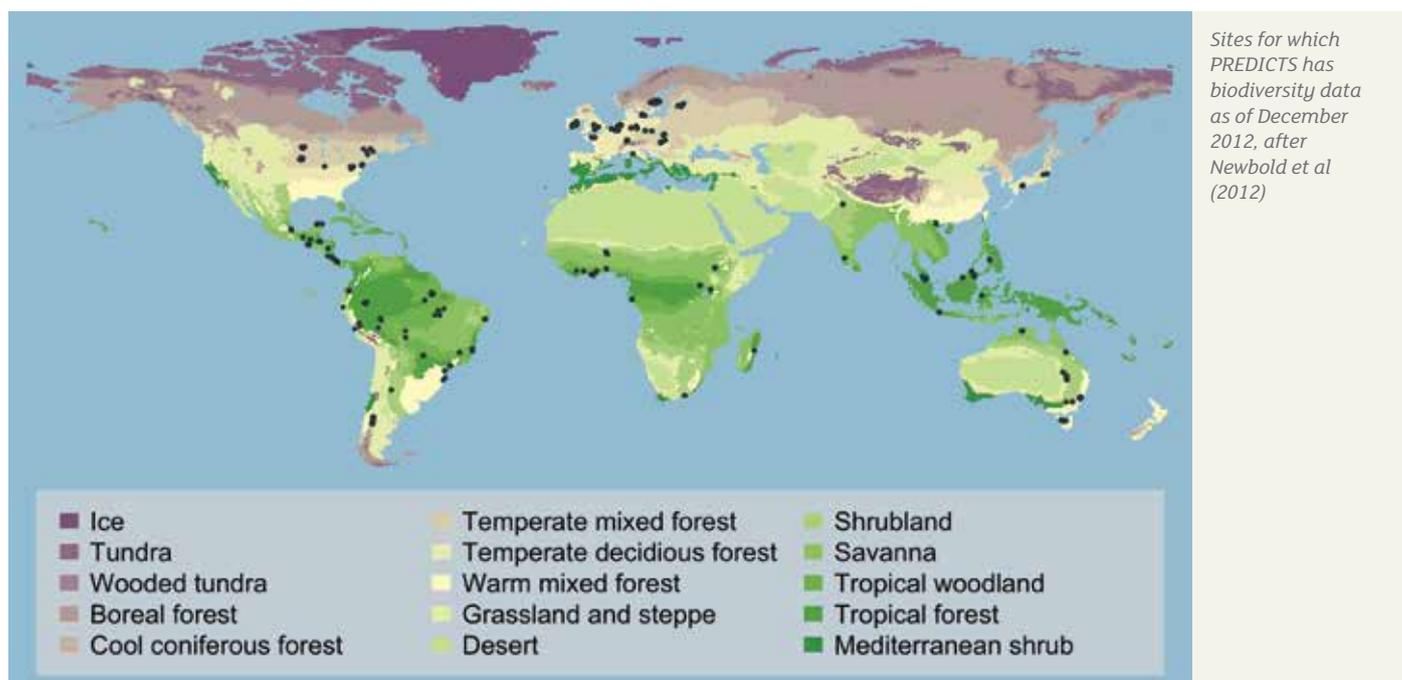
Lawrence Hudson, Tim Newbold, Drew Purves,
Jörn Scharlemann, Georgina Mace and Andy Purvis

Can you help? PREDICTS is a NERC-funded collaboration to investigate how biodiversity in terrestrial communities responds to human pressures – and it needs more data.

Specifically, we are looking for published or in-press data on terrestrial biodiversity or community composition, particularly where the level of land use varies among locations. Armed with as many datasets as we can collate, we will use meta-analytical techniques to model responses of terrestrial biodiversity at a global scale using data collected at local levels. As well as seeking to better understand the patterns of decline seen so far, PREDICTS will produce quantitative projections under different IPCC storylines with the aim of providing inputs to conservation policy such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. One of the main aims of PREDICTS is to inform attempts to reduce the rate of biodiversity loss.

The success of PREDICTS relies on an extensive compilation of datasets that describe local diversity and community

composition from sites all over the world, so a major component – and output – of the project is a database of biodiversity measurements. We have spent the first months of the project collecting data from published comparisons of biodiversity from a range of terrestrial systems and, thanks to generous contributions from researchers, our database already contains records covering several thousand locations and species (Figure 1). Despite this rapid progress, we are still a long way from our goal of as getting as close as possible to worldwide geographical distribution and taxonomically comprehensive coverage. In particular, tundra, boreal forest, savannah, deserts and urban habitats are all under-represented in our database, as are plants, invertebrates, microbes and fungi. That said, we greatly value all data contributions – see boxed text. If you have suitable data that you are willing to contribute then we would love to hear from you!



To meet our goals, we are also developing a modelling framework that will allow us to relate spatial and temporal variation in biodiversity to human pressures. The major pressures that affect biodiversity are the destruction, degradation and fragmentation of habitats, and the reduction of survival and fecundity through exploitation, pollution and introduced species. Data on habitat changes will come both from the contributed papers and from analyses of a number of freely available remote-sensed data products, such as land cover maps and vegetation indices. Each biodiversity record will be linked to the appropriate spatially and temporally resolved remote-sensed data, allowing us to quantify the intensity of pressures. Taxa do not respond equally to these pressures, with differences in response related to phylogeny and ecology. To capture these patterns, we will relate responses not only to pressures but also to phylogeny and to species' traits such as body size, functional group and trophic level. Our approach has the potential to separate the effects of different types of pressure and to examine how different taxonomic groups, for example vertebrates versus arthropods and birds versus mammals, respond to changes. The project's results will provide indicators of responses both at a global scale and at smaller scales, such as within a nation or for a particular biome.

We are keen to make PREDICTS transparent and to engage with data contributors and anyone else who is interested in the project. Our progress and outputs will be made available on our website (www.predicts.org.uk) and we produce a quarterly PDF newsletter. If you would like to receive this newsletter or contribute data, or if you have any questions, please email us at enquiries@predicts.org.uk. We look forward to hearing from you!

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Newbold T., Hudson L., Purves D., Scharlemann J., Mace G. & Purvis A. (2012) PREDICTS: Projecting Responses of Ecological Diversity in Changing Terrestrial Systems. *Frontiers of Biogeography* 4 (4), 155-156.



• **Lawrence Hudson** (left) is at Imperial College London; **Tim Newbold** (Right) is at UNEP World Conservation Monitoring Centre and Microsoft Research; Drew Purves is at Microsoft Research; Jörn Scharlemann is at University of Sussex; Georgina Mace is at University College London; Andy Purvis is at Imperial College London.

What, where, when... and subject to what kind of pressure?

Our modelling approach requires that a set of diversity measurements is comparable among different terrestrial sites so each set of data should have been collected using a consistent, standardised methodology with the same sampling procedure used at each site and time. Our ideal data format would be estimates of abundances or densities of each taxon at each location – for example, a site by species matrix – but because such data are difficult, if not impossible, to measure for certain groups, we are also collecting presence/absence data and site-level estimates of diversity. The data we would particularly like are as follows:

- Estimates of abundance or presence/absence of each species at each site and time;
- Locations of the sampling sites, as precisely as possible, with the coordinate system used, if possible;
- The date(s) on which each measurement was taken;
- An indication of the land-cover type for each site, e.g., primary forest, secondary forest, intensively farmed crop, hedgerow between two fields;
- An indication of how intensively each site is used by people.

The last two are desirable but not essential.

In the interests of transparency, we will make our biodiversity database freely available by the end of the project in 2015, so we are only able to accept data that you are willing for us to make publicly available. We accept datasets that cannot be made public before our database is made available – these will be included in a later release of our database, once the publication embargo date has passed.

All contributors of data will be included as authors on an open-access paper describing the database, and will be acknowledged appropriately in all other publications resulting from the project. We recognise that there may be extremely good conservation reasons for not fully releasing species identities or site locations in some instances: in such cases, we are of course willing to coarsen the information to be made public. If you have suitable data that you would be willing to contribute, please send the relevant published or in-press paper(s) together with Excel or text files containing the data to us at enquiries@predicts.org.uk.





ENVIRONMENTAL LEGISLATION

What are the forthcoming legislative issues of interest to ecologists and conservationists in 2013?

William J. Sutherland, Andy Clements, Martin Harper, Peter Herkenrath, Ceri Margerison, John Martin, Kathryn A. Monk and Des B.A. Thompson

This is our third review of the forthcoming environmental legislation likely to occur on a global scale, in the EU and in the UK and its constituent countries (Sutherland *et al* 2011, 2012). Our target has been researchers who may wish to offer input to policy making or for whom policy changes may have consequences (for example by providing new research opportunities). We have been delighted that many policy makers have also said that they find this useful. The previous scans are available on the BES website and we assume readers have access to these so do not repeat issues identified earlier.

This review encompasses possible forthcoming legislation, developments in existing legislation, white papers that may result in new laws and the reinterpretation of existing laws. Our objective is to identify the likely main consequences so that the reader can research further if interested rather than provide a comprehensive review. Our plan is to continue this as an annual exercise.

One overriding issue is the response of the public and private sector to the ongoing debt problems and recession in many countries, with repercussions for many aspects of global conservation. Cut backs to conservation and research and a tendency for a drive for growth at the cost of the environment are serious concerns.

GLOBAL

UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT (RIO+20) OUTCOMES

The United Nations Conference on Sustainable Development (Rio+20) took place from 13-22 June 2012 in Rio de Janeiro, Brazil. The Outcome Document *The Future We Want* sets up a number of processes that will shape how the global community addresses sustainable development and the environment. Sections from the Outcome Document with potential implications for legislative changes include the call for green economy policies, the establishment of a process to develop metrics for sustainable development that complement the GDP, the agreement of a ten-year Framework of Programmes on sustainable consumption and production, and the call for national regulatory and policy frameworks that support sustainable development initiatives by business and industry.

DEVELOPMENTS UNDER THE CONVENTION ON BIOLOGICAL DIVERSITY(CBD)

The Nagoya Protocol on Access and Benefit-sharing was adopted in 2010 by the tenth meeting of the Conference of the Parties (COP 10). It is expected that all EU member states, including the UK, will ratify the Protocol in 2013, making any amendments to national and EU legislation necessary to comply with the Protocol. The Protocol requires parties 'to create conditions to promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries, including through simplified measures on access for non-

commercial research purposes' (article 8). COP 11 in October 2012 addressed voluntary guidelines for the consideration of biodiversity in environmental impact assessments and strategic environmental assessments in marine and coastal areas. It is expected that Parties to the CBD make necessary alignments to their national (and EU) environmental impact assessment systems to accommodate the guidelines.

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE(UNFCCC)

Among the outcomes of the 2012 meetings in November/December in Doha, Qatar is the agreement, after many years of negotiations, for a second commitment period of the Kyoto Protocol. This requires defined reductions in greenhouse gas emissions from industrialised nations. A new regime is expected to replace the Kyoto Protocol in 2020. In addition, developed countries undertook to make further 'measurable, reportable and verifiable nationally appropriate mitigation commitments or actions'. The conference also agreed to develop institutional arrangements to compensate developing countries for loss and damage caused by slow onset events such as sea-level rise.

MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION OF MIGRATORY SHARKS

This Memorandum of Understanding under the Convention on Migratory Species was signed by the UK on 18 June 2012. The Agreement commits the signatory states to achieve favourable conservation status for seven shark species listed in the convention Appendices.

PACIFIC REGIONAL ENVIRONMENT PROGRAMME

In 2012, the UK became a member of the Pacific Regional Environment Programme through the Pitcairn Islands, a British Overseas Territory located in the region. The Strategic Plan 2011-2015 identifies strategic priorities for its members in the areas of climate change, biodiversity and ecosystem management, waste management and pollution control, and environmental monitoring and governance.

EUROPE

EU BUDGET

In 2013, Heads of State need to agree the next Multi-annual Financial Framework. The expectation is that the overall budget will be reduced but the 27 Member States will still have to decide how to spend many trillion euros of EU taxpayers' money between 2014-2020. The biggest element of the Budget (c40%) is allocated to the Common Agriculture Policy (see below) and there is a continuing budget line dedicated to nature conservation – LIFE. The budget process is a once in six year opportunity to align European taxpayer spending to public policy priorities, such as environmental protection and tackling climate change.

REFORM OF THE COMMON AGRICULTURAL POLICY (CAP)

The European Commission published its proposals for reform of the CAP in October 2011. Negotiations to agree reforms are ongoing but progress is slow. The Council of Ministers (Agriculture Council) and the European Parliament must, in parallel, develop their positions on the Commission's proposals: the first time that the CAP has been subject to co-decision. At present, neither has agreed its position and the Irish Presidency of the EU will need to work hard to secure agreement in the Council during the first six months of 2013, to allow a final deal: it might be possible to reach this position in June this year. Outstanding issues include: the flexibility to move funds between Pillar 1 (Direct Payments) and Pillar 2 (Rural Development) and the so-called 'greening' of Pillar 1 (the proposal to make 30% of direct payments subject to greening measures). Member States seem to agree that increased flexibility is required with respect to

environmental measures, suggesting that alternative measures could be introduced by countries, if these would bring about equivalent benefit for the environment and climate as the three practices proposed by the Commission. Delays in reaching agreement on the CAP mean that reforms to the policy will not be introduced until at least 1st January 2015, with 2014 a transition year for both direct payments and rural development programmes.

REFORM OF THE COMMON FISHERIES POLICY

2013 will also see the completion of review of the Common Fisheries Policy. This is an opportunity to put the environment first to ensure that fish stocks, the marine environment and fisheries can thrive; to set legally binding sustainable fishing levels that cannot be exceeded by law-makers or fishers; to eliminate discards by reducing catches of unwanted fish; and to deliver transparent decision-making and reporting processes to measure performance and properly address overcapacity in the European fleet.

INVASIVE ALIEN SPECIES (IAS) DIRECTIVE

The approximate annual cost of implementing policy action to address the impacts of IAS has been estimated at between €0 and €90 million. The EU Biodiversity Strategy for 2020 included in its headline targets the pledge to identify and prioritise IAS and their pathways of introduction, to control or eradicate these species, and to manage their entry into the EU thus preventing their establishment. The European Commission ran a consultation on proposals for a dedicated legislative instrument between January and April 2012, although the process of preparing a response stalled towards the end of the year. A draft Directive on IAS was expected, although it is now possible that only a regulation on IAS may be brought forward. The timescale for publication may depend on the priority afforded to this by the Irish Presidency of the EU (January – June 2013).

DIRECTIVE 2007/2/EC INFRASTRUCTURE FOR SPATIAL INFORMATION IN THE EC (INSPIRE)

This complex Directive on environmental data is aimed at addressing fragmentation, gaps, disconnection and duplication of spatial environmental

data at different scales across Europe. The INSPIRE Directive entered into force in 2007, with the intention to ensure that datasets of spatial environmental information can be accessed easily by public organisations within the EU thereby supporting better environmental policy-making across Member States. The Directive requires common 'Implementing Rules' (IRs) to be adopted by Member States in five areas: metadata; data specifications; network services; data and service sharing; and monitoring and reporting. Work has begun in the UK, with December 2013 marking the end of Phase I. Three so-called 'Services' must be provided by those holding datasets of relevance to ecologists (including soil, land use, habitats, biotopes and species): Discovery (describing the data and services); View (a map representing the data); and Download (allowing the retrieval of the dataset itself). Full implementation of the Directive is anticipated by 2019. There are clear gains to be made through investing in far better care and archiving of existing data and information.

UNITED KINGDOM AND WESTMINSTER

MARINE STRATEGY FRAMEWORK DIRECTIVE

This Directive aims to achieve Good Environmental Status (GES) across Europe's seas by 2020. It was transposed into UK law through the Marine Strategy Regulations 2010. Work is ongoing to define indicators (for example seabird breeding success) and targets that enable achievement of GES by 2016. A monitoring programme is being established to monitor progress towards GES, reporting in July 2014. GES in the marine environment is linked to Common Fisheries Policy reform, and to implementation of the Marine & Coastal Access Act.

NEW RURAL DEVELOPMENT PLANS

Each of the UK administrations will have to agree the design of new Rural Development Plans by the end of 2013. These will, of course, be influenced by the outcome of the CAP negotiations (see above), and will have major implications for the future design and promotion of agri-environment schemes across the UK.

BUDGET 2013 AND PUBLIC SPENDING REVIEW

It is expected that the Chancellor will announce another Comprehensive Spending Review in the spring Budget statement. Given the ongoing challenge to reduce the deficit, there are likely to be further spending cuts felt across Government Departments, devolved administrations and their agencies.

OPEN ACCESS PUBLISHING

From 1st April 2013 under a mandate from the Department for Business, Innovation and Skills, all research that is funded by the Research Councils must be published in a journal compliant with the Councils' open access policy. A journal must therefore provide via its own website immediate and unrestricted access to the publisher's final version of the paper and allow immediate deposit of this paper in other repositories without restriction on use. Alternatively, if the publisher does not offer this option, the publisher must allow deposit of manuscripts that include all changes resulting from peer review in other repositories, without restriction on reuse. There can be no longer than delay of six months between a paper being published online and becoming Open Access. In addition the Research Councils UK undergo a Government Triennial Review in the first part of 2013.

ENGLAND

FORESTRY PANEL & TRIENNIAL REVIEW OF AGENCIES

Government's response to the Independent Panel on Forestry report is due in January 2013, but is likely to be influenced by the current Triennial Review of the Environment Agency and Natural England. There is a concurrent Defra Triennial Review of the Joint Nature Conservation Committee. The Environment Agency and Natural England Triennial Review, announced in December 2012, and running a public consultation until 4 February 2013, asked two questions: are the functions still required; and, is the delivery model right? Conservation NGOs are urging Defra to use this review to better enable the achievement of ambitions for the environment set out in the Natural Environment White Paper, **Making Space for Nature**, and **Biodiversity 2020**. An option being considered

by Defra for the future is a single environment body combining EA, NE and Forest Services, the last an element of the independent panel's report. The Triennial Review is expected to conclude by the end of March 2013.

MARINE CONSERVATION ZONES

In December 2012, Biodiversity Minister Richard Benyon announced that 31 out of a provisional list of 127 sites would be designated as Marine Conservation Zones in 2013. The hope and expectation is that more action will be taken to complete the promised comprehensive ecological network of marine protected areas.

WATER BILL

A Water Bill is likely to begin its passage through Westminster in 2013. The draft Bill "includes measures to strengthen the water sector's ability to respond to the challenges of a growing population and less certain water supplies, and improve the deal it offers to its customers by offering more choice, and driving efficiency and innovation". These build upon the vision Defra set out in the Water White Paper, *Water for Life*, for a "resilient, affordable and sustainable water supply".

MAJOR INFRASTRUCTURE AND ENVIRONMENT UNIT

Following the 2012 review of the Implementation of the Habitats Regulations, Defra established a new Unit to: publish advice on the circumstances that a competent authority may, or should, adopt the reasoning or conclusions of another competent authority, produce guidance on the key factors that need to be considered for a project to be deemed IROPI ('imperative reasons of over-riding public interest'), including "alternatives" to a plan or project and introduce a new process which will allow developers of nationally significant infrastructure projects to agree evidence plans with relevant statutory nature conservation bodies. This work will continue into 2013 and is overseen by a multi-stakeholder Major Infrastructure and Habitats Group.

NATURAL CAPITAL COMMITTEE

The Natural Capital Committee, chaired by Professor Dieter Helm, University of Oxford is set to publish its first report for the Treasury into the state of England's natural assets.

LAW COMMISSION REVIEW OF WILDLIFE LEGISLATION

The Law Commission has been charged with reviewing wildlife laws in England and Wales by Defra and the Welsh Government. The stated aim of the review is 'to make the law work better for all concerned with wildlife.' The desired end point – a new legal framework for wildlife in England and Wales – will determine, for decades to come, how the wildlife we value is protected, conserved, exploited and culled. The Commission will make its recommendations to Defra in 2013 and the expectation is that there will be new legislation in due course.

TAYLOR REVIEW OF LAND USE PLANNING

The National Planning Policy Framework streamlined most of English national planning policy into a single document of around 50 pages. Government commissioned Lord Taylor to review all the underpinning planning practice guidance, with the aim of parallel streamlining. The Taylor group published their report for consultation in December and comments are due by 15 February 2013. The key recommendation is that there should be a new 'guidance' website where all official government planning practice guidance is gathered in one place, and kept up to date.

ENERGY BILL

The latest Energy Bill will pass through Westminster in 2013. Energy and Climate Change Secretary, Ed Davey, has presented this as a once in a generation shake up of the energy sector that would ensure we deliver our climate goals whilst keeping electricity affordable. However, there are likely to be difficult discussions over whether to include a commitment to decarbonise the electricity sector by 2030, in line with recommendations from the Committee on Climate Change, and whether to include GHG emissions from international air-travel in the UK's carbon targets.

SCOTLAND

MARINE MATTERS

The marine environment will become even more prominent in the legislative news next year. On 14th December 2012 the Scottish Parliament received a report on progress in developing a network of Marine Protected Areas

(MPAs) – equivalent to an area the size of Scotland being created in Scottish waters (which themselves account for 13% of Europe's seas and 61% of UK waters). A consultation exercise in 2013 will finalise plans for the MPA network, as set out in the Marine Act (2010).

INVASIVE ALIEN SPECIES

In July 2012 new legislation came into force concerning non-native species, with implications for 2013 and beyond. This enables Scotland to adopt the internationally recognised three stage approach to dealing with invasive alien species: prevent release; ensure rapid response; and ensure effective control. The Wildlife and Natural Environment (Scotland) Act 2011 (Commencement No. 4, Savings and Transitional Provisions) Order 2012 deals with non-native provisions, and two further Orders deal with the keeping and releases of certain invasive species, reporting on the presence of some invasives, and the planting of, and catch and release by anglers, of certain species. A *Code of Practice on Non-Native Species* was approved by the Scottish Parliament. This is written to help people who have responsibilities for managing land with non-native plants and animals or who keep them. The courts can have regard to compliance with the Code when considering whether or not a person is liable in criminal proceedings, and this will set precedents in due course.

THE 2020 CHALLENGE FOR SCOTLAND'S BIODIVERSITY

The Scottish Biodiversity Strategy is being refreshed to reflect the wide range of new ambitions set out in the UNs Convention on Biological Diversity Aichi Targets for 2020, and the EUs Biodiversity Strategy for 2020. The *2020 Scottish Biodiversity Challenge* is in preparation following a public consultation in 2012. It will set out what the government, its agencies, the business sector and the NGOs need to do to secure a healthier state for nature in Scotland. In addition to traditional objectives the strategy includes three themes: (i) securing a much deeper reach for nature into the education, health, transport and other key business sectors; (ii) developing the ecosystem approach more widely and meaningfully; and (iii) developing the concept and applications of 'natural capital' so that society gets better at valuing and restoring nature.

A parliamentary debate and Committee hearings will be held early in 2013 before the 2020 Challenge is published in the spring.

HABITAT AND LAND USE ISSUES

In 2012, the Conservation (Natural Habitats, &c.) Regulations 1994 were amended to put more responsibility onto the Scottish Ministers and other public agencies for preservation, maintenance and re-establishment of wild bird habitat in the exercise of their functions. The final part of the Wildlife and Natural Environment Act 2011 (on snaring) comes in to effect in 2013. There may be further amendment to the Conservation (Natural Habitats, &c.) Regulations 1994, dependent upon the outcome of a current infraction procedure. The first annual Progress Statement for Scotland's Land Use Strategy was published in 2012, which is setting the agenda for further land use legislation.

'BETTER' REGULATIONS

The Better Regulation Bill aims to improve the way regulations are applied in Scotland and address concerns raised by business about regulatory inconsistency. As well as re-enforcing the principles of better regulation, the key tenet of the Bill is that regulators should adopt national standards and systems when applying regulation (the issues causing concern include variation in trading standards, environmental health, alcohol and other business licensing). The Bill proposes a duty to promote economic and business growth in regulatory activity (but without undermining the core purpose of the regulatory body). The section on planning reform is concerned with linking fees to the performance of the local authority (which may present opportunities for capacity building). There is a section rationalising the scope for challenge to Ministers' decisions on infrastructure projects (currently, these decisions are subject to diverse appeal mechanisms linked to various consents).

WATER-RELATED ISSUES

The Aquaculture and Fisheries Bill aims to ensure that farmed and wild fisheries – and their interactions with each other – continue to be managed effectively, maximising their combined contribution to supporting sustainable economic growth with due regard to the wider marine environment. The Bill is likely to

focus on provisions to better manage fish farms (for example by making sea-lice data more available, and introducing a technical standard for containment), and taking steps to modernise District Salmon Fisheries Boards and freshwater fisheries management. The Bill is expected to have a number of benefits for the natural heritage in these areas. The Scottish Government has developed the Water Resources (Scotland) Bill in order to update the law on the management of Scotland's water resources, to introduce new duties relating to their vision of Scotland as a Hydro Nation and set a legislative framework that will underpin other non-legislative activity. It provides for management agreements for activities to protect or improve the quality of untreated water. It includes proposals that Scottish Water source all its energy needs from on-site renewables, and proposals to abstract large volumes of water (such as for export to England), which could have consequences for local ecosystem health.

COMMUNITY EMPOWERMENT AND LOOKING FURTHER AHEAD

The Community Empowerment and Renewal Bill is a key vehicle through which the Scottish Government aims to deliver on the main recommendations arising from the Christie Commission review of public service delivery. It aims to support communities to achieve their own goals and aspirations through taking independent action and by having their voices heard in the decisions that affect their area. It will shape work by Community Planning Partnerships (CPPs) on Single Outcome (agreements between the Scottish Government and CPPs which set out how each will work towards improving outcomes for the local people in a way that reflects local circumstances and priorities). Looking further ahead, the Scottish Government has commissioned a review of the Land Reform (Scotland) Act 2003. The Law Commission is preparing recommendations for the UK Government to consolidate the Wildlife and Countryside Act 1981 and its many amendments, with consultation possibly leading to a draft Bill in 2014. Were this to go forward, similar steps could be taken in Scotland (affecting the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011).

COME TO SCOTLAND!

One rather novel development is the formal designation of 2013 as the Year of Natural Scotland. Visit Scotland, Event Scotland and Scottish Natural Heritage are working on a wide range of activities to attract more people to Scotland to enjoy and benefit from nature – new walking trails, special ‘apps’ for train travellers, profile raising for Scotland’s ‘Big Five’ species and hundreds of events. All of this paves the way for ‘Homecoming Scotland 2014’ and the independence referendum.

WALES

A number of relevant interconnected policy developments continue in Wales that are of interest to BES members, from overarching sustainable development duties to new approaches to environmental management, planning, and the management of historical sites. Consultations on further environmental legislation and related issues for Wales include proposals for criteria for storing waste metallic mercury safely and a change to the Control of Major Accident Hazards Regulations 1999 (jointly with Defra).

SUSTAINABLE DEVELOPMENT (WALES) BILL

One Wales: One Planet is the Welsh Government’s Sustainable Development Scheme, made under section 79 of the Government of Wales Act 2006. It sets out the Government’s commitment and approach to placing sustainable development at the centre of everything it does. The introduction of a Sustainable Development Bill will strengthen this approach by placing a legal requirement on organisations delivering public services within Wales to demonstrate that sustainable development principles are at the heart of their thinking. This means that all public bodies will take a long-term approach; work better together; and use evidence when making decisions so that they provide the best value for the people they serve now and in the future. The proposal also includes plans to set up a statutory body to provide sustainable development advice and guidance. The Bill should be introduced to the National Assembly for Wales in autumn 2013.

ENVIRONMENT (WALES) BILL

This Bill will aim to provide for a more integrated management of the environment in Wales with greater environmental protection, economic and social benefits and for connected purposes. Following the consultation around the Environment Green Paper in January 2012, the Welsh Government launched the Living Wales Programme. This Programme recognises that changes in Welsh society are affecting natural resources – our air, water, and landscapes and wildlife. It is the largest programme the Welsh Government has undertaken and covers both government ways of working and institutional change. Future Welsh Government decisions will consider and balance all the demands put on Welsh natural resources. This involves considering the requirements for the economy, the environment, and for people and communities. The Government is also establishing the new Natural Resources Wales (NRW), or *Cyfoeth Naturiol Cymru*. This body will undertake the current duties of the Countryside Council for Wales, Environment Agency in Wales, and Forestry Commission in Wales. It will also have the potential to undertake further functions currently delivered by other organisations in Wales. It will be expected to apply the ecosystem approach across all its functions. NRW will become operational on 1st April 2013. A White Paper consultation on the Environment Bill is expected later in 2013.

PLANNING (WALES) BILL

The Independent Advisory Group published their recommendations to the Welsh Government in September 2012. A separate advisory group investigated the use of city-regions in Wales, which is likely to have a strong planning element (see City Regions below). A Planning White Paper will be produced for consultation in 2013. The Planning Bill should be introduced to the National Assembly for Wales in 2015-16.

CITY REGIONS

An advisory group was set up by the Minister for Business, Enterprise, Technology and Science in November 2011 to consider and report on the potential role of ‘City Regions’ in future economic development in Wales. The group held regular meetings where Members considered a range

of economic and statistical evidence and data as well as presentations on international examples of city regions. The group’s report was published in July 2012 with 22 recommendations, several of which can be considered in the light of a broader cross-government application of the ecosystem approach. The Welsh Government will now consider the group’s recommendations and provide a response.

ACTIVE TRAVEL (WALES) BILL

A White Paper consultation on proposals to enable more people to walk and cycle and generally travel by more active methods was held in May-August 2012. The Welsh Government wants to make walking and cycling the most natural and normal way of getting about so that more people can experience the health benefits, greenhouse gas emissions can be reduced, and poverty and disadvantage can be addressed. At the same time, these proposals may help the Welsh economy grow, and take steps towards unlocking sustainable economic growth. The Bill should be introduced to the National Assembly for Wales in spring 2013.

THE MARINE CONSERVATION ZONE PROJECT WALES

The seas and coast of Wales are extremely important to the Welsh way of life. 60% of the Welsh population live and work in the coastal zone. Seventy per cent of the Welsh coastline is recognised for its environmental importance and beauty with three Areas of Outstanding Natural Beauty in Wales. Long-term marine conservation aims were set out in the Environment Strategy for Wales in 2006. The Marine and Coastal Access Act 2009 gave the Welsh Government powers to better protect and manage the marine environment of Wales. These powers include creating Marine Conservation Zones (MCZ) with a current project to identify MCZs in Welsh waters. The first stage consultation and stakeholder engagement exercise on site options were held in May-July 2012 setting out the science behind ten potential highly protected site options and focused on gathering more information about how people use and enjoy the marine environment, how they might be affected by a highly protected designation, and how any effects could be minimised. In November 2012, the Minister for Environment and

Sustainable Development announced additional work to look at the feedback received and consider how to proceed with MCZs in Wales. A Task and Finish Team, composed of members from the Welsh Government and government agencies, will report by April 2013. A new Stakeholder Focus Group was also created to work alongside the Task and Finish Team, and will be used to test ideas and advise on practical solutions.

NORTHERN IRELAND

MARINE BILL

The Northern Ireland Marine Bill moves to complete the legislative procedure. At the time of writing, the Environment Committee scrutiny stage has now finished. It is likely that that Northern Ireland Assembly will approve the Marine Bill in early 2013, with the Bill becoming an Act following the granting of Royal Assent. The Bill contains provisions for designating Marine Conservation Zones, enabling legal protection for a range of species and habitats, although it is likely this will underpin extant Special Areas of Conservation and Special Protected Area network. The Northern Ireland Environment Agency has established a new Marine Directorate to coordinate its marine functions.

PLANNING AND CONSERVATION

Planning Policy Statement Two (PPS2) sets out the Department of Environment's land use planning policies for the conservation of natural heritage in NI. PPS2 embodies Northern Ireland's commitment to sustainable development and to conserving the diversity of habitats and wildlife. PPS2 has been under revision so as to further the Executive's commitment to the biodiversity duty brought in by the 2011 Wildlife and Natural Environment Act. In March 2011 *Draft PPS2 (Revised): Natural Heritage* was published as a driver for this change. Stakeholders had expected the final product in 2012 but publication of the final PPS2 is now expected in the second quarter of 2013.

CLIMATE CHANGE BILL

The Minister for Environment, Mr Alex Attwood, has long been an advocate of Northern Ireland's positioning itself as a leader in carbon reduction and to that end has proposed the introduction of a Climate Change Bill that includes

challenging targets for greenhouse gas reduction. Independent advice has been sought from the Committee on Climate Change which has subsequently outlined the benefits of bespoke legislation. A stakeholder consultation exercise in summer 2012 allowed Department of Environment to further canvas opinion, and proposals for the Bill are expected in early 2013. The Bill would set out sectoral emission reduction targets, with significant implications for the land use sector.

FRESH WATER AND FLOOD RISK MANAGEMENT

The 1973 Northern Ireland Drainage Order has been deemed unfit for purpose in this brave new world of climate changing weather patterns. The Department of Agriculture and Rural Development is responsible for flood risk through the Rivers Agency, which is currently delivering the EU Floods Directive. Initial work on making provisions for a new Floods Bill is being carried forward, with departmental officials looking at the *Flood Risk Management (Scotland) Act 2009* which prioritises natural methods of flood abatement. Provisions would likely include making Sustainable Urban Drainage Systems mandatory for every new development, investigating the feasibility of upland-offline flood storage and potentially the creation of wetlands. Preparatory work for the Bill is underway, with further development planning in 2013. The last round of plans (2009-2015) are failing to match the ambition of reaching 68% Good Ecological Status by 2015, with the most recent condition assessment scoring only 28%.

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William J. Sutherland is at the Zoology Department in Cambridge; Andy Clements is Director at the British Trust for Ornithology, Thetford, Norfolk; Martin Harper is Conservation Director at the Royal Society for the Protection of Birds (RSPB); Peter Herkenrath is Senior Programme Officer at the United Nations Environment Programme World Conservation Monitoring Centre in Cambridge; Ceri Margerison is Policy Manager for the British Ecological Society; John Martin is Conservation Manager for RSPB Northern Ireland; Kathryn A. Monk is the Science Strategy Manager for the Environment Agency Wales, and Des Thompson is principal adviser on biodiversity in SNH.





SOAPBOX SCIENCE

BRINGING SCIENCE TO THE STREETS

If you happened to be strolling down the South Bank on a particularly rainy day in July last year, you may have had quite an unexpected experience.

Seirian Sumner & Nathalie Petteorelli / Organizers of the Soapbox Science event

A young man and woman wearing feathered masks strut provocatively around you; a small boy chases what must be the world's biggest and brightest bubbles to an audience of umbrellas and smiles; a wild-haired woman stands on a box, waving bits of string around in front of an awe-struck audience of tourists and school children. This is no ordinary street theatre: it's Soapbox Science in action! You have never heard of Soapbox Science??? Then now is your chance to get up to speed with the latest way of achieving that much sought after 'Science Impact' that we all desire/require (delete as appropriate!).



WHAT IS IT ALL ABOUT?

Soapbox Science is a festival of science with a difference. It aims to bring cutting-edge UK science to the public, in an accessible, fun, free and unintimidating way, transforming public areas in central London into arenas for learning, exploration and scientific debate. Unlike other science events, a 'Soapbox' audience will not have necessarily planned to come and learn about science – rather, they happen across a bunch of world-class scientists as they stroll down London's busy streets. People who don't usually think about science therefore get to hear about it first hand, from scientists who don't necessarily have shaggy beards and odd matching shoes, but who **do** know how to share their passion for experimentation, discovery and innovation. There cannot be a more 'green' and sustainable way of disseminating science and engaging with the public: there are no expensive exhibits, constructions, pavilions, props or speaker fees; the event is highly portable, reproducible, and flexible in its theme. Soapbox is a next-generation

science event: it is a sustainable, cost-effective, non-discriminatory approach to bringing UK science to the people. The event is therefore unique among science outreach ventures, in that it has the potential to inspire people who never normally get exposed to science. Moreover, it is accessible to anyone, irrespective of education or financial means (watch <http://www.youtube.com/watch?v=a4iNAIsWdMc> for a taste of 2012's event).

SOAPBOX SCIENCE AND WOMEN IN SCIENCE

For the past couple of years, Soapbox Science has been used as a platform to showcase some of the most eminent female scientists in the UK at the height of discovery and innovation. Why such a choice? Because we are convinced the paucity of female scientists in science, especially at top position levels, requires the Science, Technology, Engineering and Mathematics (STEM) community as well as the public's attention. It is indeed quite tragic that, despite the increasing popularity of STEM disciplines among

Heather Whitney



female undergraduates and graduates, the proportion of female scientists in top positions remains shockingly low. For example, in the UK, 60% of biology undergraduates but only 15% of professors are female. Being mid-career ecologists, participants on the BES Women in Science Mentoring Scheme and For Women in Science Fellowship awardees, we are at that stage where we continuously witness the disappearance of our female peers, we (the organizers) are also well placed to appreciate the importance of addressing the issues driving women out of STEM.

“It is indeed quite tragic that, the proportion of female scientists in top positions remains shockingly low.”

Since 2011, a dozen women in STEM have annually stood on our Soapboxes and shared their latest scientific discoveries with the people on the streets of London. Our list of previous speakers is prestigious: in 2011, for example, the current BES President Prof Georgina Mace (FRS) graced our Soapbox, while in 2012 Dame Professor



Athene Donald

Athene Donald (FRS) and Prof Lesley Yellowlees (FRS; first female president of the Royal Society of Chemistry) stepped onto our boxes. During the event, our speakers talk about their *science*, not about being a woman in science. The impact of their participation in Soapbox Science however goes beyond science: our speakers help raise the profile of and improve the visibility of women scientists in the UK. They help to bring to the attention of the public, the media and ultimately the government, how women scientists are unacceptably under-represented in the UK (and globally). By offering the public this platform for debate and interaction with the UK’s top female scientists, Soapbox Science also hopes to provide the role models that will spur on the young scientists of the future.



Lesley Yellowlees

Soapbox Science is however not just street theatre; our ultimate aim is to make a real difference for women in science in the UK and the event has become one of the foundations of a growing community seeking to address gender imbalances in STEM. This started with us producing a series of blogs and articles on women in science, and with our speakers writing blogs for some of the UK’s main broadsheet newspapers and contributing to online articles about science as a career. In 2012, Soapbox Science joined Twitter, and **@SoapboxScience** now counts hundreds of followers, while the event now also possesses its own website (<https://sites.google.com/site/soapboxscience/home>). We are currently exploring routes for expansion, wider participation, wider impact and sponsorship.

SOAPBOX SCIENCE 2013

Now in its fourth year, Soapbox Science will take place on Friday the 5th of July, Queen’s Stone, Riverside walkway (by Gabriel’s Wharf), South Bank. The event represents a fantastic opportunity to celebrate gender diversity in STEM; help raise awareness of the current gender gap in scientific disciplines; and listen to some of the country’s top female scientists from the fields of biology, physics, chemistry and engineering as they take to their soapboxes to talk passionately about their subjects and answer the public’s burning science questions. We would like to encourage all BES members to take part in the event and join us on the 5th of July. In particular, we encourage any early career ecologists to drop us an email (**SoapboxScience@gmail.com**) should they be interested in getting involved with the event, for example as a volunteer or Speaker Host. We hope to see many of you in July!

• **Seirian Sumner** is a senior lecturer at the University of Bristol. Twitter **@waspwoman**

• **Nathalie Pettorelli** is a research fellow at the Institute of Zoology of the Zoological Society of London. Twitter **@pettorelli**





CAREER PLANNING FOR ECOLOGISTS

Sarah Blackford
Head of Education & Public Affairs,
Society for Experimental Biology



In December 2012, I had the privilege of delivering the first career planning session at the BES Annual Meeting in Birmingham, alongside my colleague Dr Barbara Tigar (Liverpool Hope University). The BES will continue to build on its career initiatives in future – for example, its undergraduate ambassadors ran their 2nd careers event in February 2013 in London and are planning another for 2014.



In December 2012, I had the privilege of delivering the first career planning session at the BES Annual Meeting in Birmingham alongside my colleague Dr Barbara Tigar (Liverpool Hope University). I understand from the education officer, Karen Devine, BES will continue to build on its career initiatives in future – for example, its undergraduate ambassadors ran their 2nd careers event in February 2013 in London and are planning another for 2014. Of course, the well-respected BES careers publication *Rooting for a Career in Ecology*¹ is also going strong in its on-line format and a collaborative initiative with other biological learned societies resulted in the recent publication of *Next Steps*², which provides undergraduate bioscientists with basic information, advice and resources to assist them with their careers.

OPPORTUNITIES

What opportunities are open to ecologists and how can they be harnessed to forge a successful and rewarding career? This was the premise on which we based our workshop in Birmingham. Specifically aimed at postdoctoral researchers, but relevant to students and professional ecologists, Dr Tigar and I wanted to provide a workshop which would empower participants to take a proactive approach to their career planning. Much of the content was based on my recently

published book, *Career planning for research bioscientists*³, which is structured into chapters incorporating two key career theories (Figure 1).

Although we only had one hour to deliver the workshop, we felt that providing a framework to guide participants on the various factors involved in career planning would leave them more self-reliant. To this end we focussed on opportunities, accessing the job market, analysing vacancies and increasing personal employability.

ACCESSING THE JOB MARKET

It is perhaps an urban myth (no real data and statistics seem to be available) that only 30% of jobs are actually advertised. Whether this is true or not remains debatable, however if you take account of those positions you may have applied for where you had the suspicion someone was already lined up, this figure may not be far from the truth. You too may have benefited from being put into post or offered a PhD without competition, or you may have been interviewed for a job where it was made clear you were the main contender. Hiring is a risky business for employers. They have probably invested time and money in their advertisement, the position may be crucial to the success of their company, their new employee will need to fit into the company culture and team. Only a

Example ecology and ecology-related careers

- Academic researcher
- Lecturer
- Researcher (non-academic)
- Environmental manager/consultant (e.g. climate, renewables, pollution, energy)
- Ecologist (identification specialist)
- Ecology specialist (e.g. woodland, wildlife, marine)
- Ecology surveyors
- Technical specialist
- Technology transfer
- Environmental Lawyer
- Teacher (formal and informal settings)
- Science communication careers – policy, outreach, education, publishing, journalism



Figure 1 Diagrammatic representation of the structured DOTS Model blended with the more flexible Planned Happenstance theory. Reprinted from Blackford (2012)³ with permission.

Assistant Ecologist

(Example job specification)

The Assistant Ecologist will be involved in a wide variety of work, including:

- Trapping and translocation of reptiles and amphibians
- Assisting with reptile, great crested newt and bat surveys
- Ecological Watching Brief (supervision of works close to features supporting protected species including badgers, bats and water voles).
- Surveys for breeding birds
- Completing weekly reports for review
- Data collection in the field and preparation of data sheets according to standard formats
- Completing and collating timesheets and assisting with accounts administration
- Constant review of environmental design drawings against the actual situation on the ground, e.g. the location of fence lines and habitat manipulation, and regular communication of this information with the client
- Regularly reporting to and providing support to the Ecology Consultancy management team;
- Have an appropriate degree qualification
- Have good experience of ecological survey and mitigation
- Have proven field work and report writing skills
- Be able to identify native herpetofauna to species, life stage and gender
- Have experience of carrying out bat surveys
- Be able to use a simple heterodyne bat detector
- Experience with other species groups would be an advantage as would the ability to identify habitats and indicator plant species
- Experience of working on a live construction project would be an advantage
- Be willing to work during evenings and at weekends
- Have a full UK driving licence.



job specification and interview stands between the vacant post and the filled post so they need to get it right. With this in mind, it is more understandable that employers may choose to line up someone who is already working for them at a lower level or on a voluntary basis, someone known to them or who has been recommended by a colleague or acquaintance. This is why networking is a crucial component of the job-seeking process and not something to be done as an after-thought. You may be happily ensconced in a three-year contract or even a 'permanent' post right now, but propagating new contacts and collaborators and maintaining and building on your networks will serve you well for the future when you are looking for a new position. Social media⁴ (e.g. Twitter, LinkedIn, Facebook, Researchgate) serve this activity admirably these days as well as more conventional methods such as networking at conferences. Many ecologists and ecology/environmental organisations use social media to promote themselves, share information, news and general chit-chat as well as to advertise jobs and courses. In particular, Researchgate can help to highlight your research and publications and LinkedIn is an excellent way to track down small businesses or to research professionals in

positions of interest to you. Make sure you upload a comprehensive profile with relevant keywords and then start linking to people or use the search facility to research people or companies of interest to you. Twitter is a slightly more frivolous social medium and requires only 140 characters per entry. For a good starting point, follow the BES @BritishEcolSoc to see what they're talking about and who they are following. I'm always surprised at how few researchers and students use social networks for work purposes – it offers a highly democratic networking platform and, once you get into it, it can be enjoyable too!

ANALYSING VACANCIES

Examining job specifications, rather than skimming job titles and basic job descriptions, will give you more of an insight into what exactly a post involves and whether it might be of interest to you now or in the future. Look at the two positions in Box 2. The duties and responsibilities of the Assistant Ecologist are quite basic and this is reflected in the kinds of activities required as well as a lowish salary (not shown). The senior post provides an insight into where the Assistant Ecologist might aspire to progress in future and the experience, qualifications and skills required to reach

this level. This applies to all jobs. If you are a postdoctoral researcher look at fellowship descriptions or lectureship advertisements to determine what you ought to be doing now to position yourself to apply for these higher level posts. If you are looking to broaden your horizons and apply for ecology-related or non-related posts such as communication or project management, you will have to ensure your job exploration keywords are not limiting your job search. Additionally, by examining the job specifications for these careers and/or investigating the profile of those already working in your chosen profession will give you an idea of the experience or qualifications needed to make a career change. This might be done through voluntary work, taking a course or networking (see the next Section: 'Enhancing employability').

ENHANCING EMPLOYABILITY

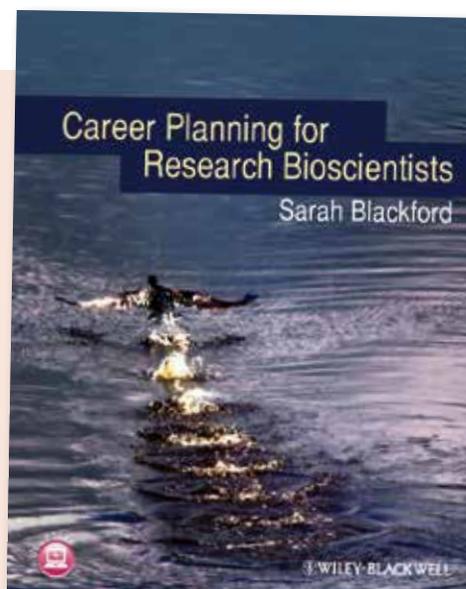
Ecologists are in a slightly different position, compared to their lab-based bioscience counterparts, with regard to their job prospects relative to their qualifications. Apart from research and academic posts, many ecology-related careers are as accessible to those with relevant work experience as for Masters or PhD-qualified candidates. In fact, short courses run by organisations such as the Chartered Institute of Ecology and Environmental Management (CIEEM)⁴ offer excellent opportunities to increase much sought-after ecological skills. Having said that, recognised Masters degrees with plenty of practical,

industry-relevant content will be an asset to environmental scientists or ecologists looking to enhance their qualifications. Additionally, membership of, or affiliation to, professional associations such as the Institute of Environmental Management and Assessment (IEMA) and CIEEM, as well as being proficient using recognised methodologies, e.g. GIS, BREEAM and project management all increase an ecologist's chances of gaining employment and accessing more senior positions. This accumulation of experience can start as early as school and, in particular at University where voluntary placements, internships, membership of local conservation organisations etc. can add very usefully to a graduate's CV. Short courses and other development opportunities are usually offered at discount prices to student members (e.g. IEEM, Mammal Society) and, of course, membership of learned societies such as the BES and the Society for Experimental Biology offer many benefits including reduced registration to scientific meetings.

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- ⁴ <http://www.rin.ac.uk/our-work/communicating-and-disseminating-research/social-media-guide-researchers>

• **Sarah Blackford** is the head of Education & Public Affairs at the Society for Experimental Biology. She recently published a specialist careers book aimed at researchers entitled *Career planning for research bioscientists*³ and also writes a careers blog, providing career updates and a comprehensive list of career resources. Formerly, Sarah worked in research, science publishing and Higher Education careers. She is a graduate of applied biology (University of Hertfordshire) and holds a Master's degree in careers education and guidance (Warwick University).



Senior Ecologist

(Example job specification)

- Have an appropriate degree(s), full clean driving licence and be a Full Member of the IEEM
- Have a minimum of 5 years' relevant work experience covering Phase 1 and habitat surveys, EIA and HRA, as well as BREEAM and CfSH
- Four or more years report writing in a professional role, including production of non-standard research led reports.
- Be able to critically review own work and possess a minimum 2 years of reviewing others work, including Phase 1 survey reports, protected species survey reports and ES chapters
- Excellent communication skills to enable effective liaison with clients and colleagues
- Min 2 years of managing a team largely focussed on protected species surveys and assessments
- Have a particular expertise in bat ecology and be in possession of a survey licence
- Must be competent in the survey of one or more of the following key protected: great crested newts, badgers, reptiles, dormice, water voles, birds
- Have experience of writing EPSM licences for one or more of the following: bats, great crested newts, dormice. Ideally, have been a named ecologist on one or more EPSM licence.
- Have an interest and preferably some expertise in invertebrate ecology
- Experience of producing ecology chapters as part of EcIA for complex projects.
- Must respond promptly and professionally to clients and be able to advise and to consult with colleagues if necessary. Evidence of effective relationships with a number of important clients, offering advice and guidance
- Be able to manage own workload, be proactive in managing projects and be able to delegate to and provide support to Ecologists as appropriate
- Up to date knowledge of EU and UK legislation and policy
- Up to date knowledge of, and familiarity with, survey guidance for a range of protected species.

IMPACTFUL ECOLOGY?

Revising and Expanding the IUCN Guidelines for Reintroductions and other Conservation Translocations

Sarah Dalrymple

@SarahEDalrymple

As ecologists, most of us would like to think that our work will have a positive impact on knowledge creation, environmental protection, or societal benefits; but if you are a researcher it is not always certain that your work will reach the spheres where change can happen.

Impact has taken on a new level of importance since the announcement of the upcoming Research Excellence Framework assessment and it is something we will have to formalise in all our activities. When I applied for a BES grant to undertake a systematic review of plant reintroductions in 2006 (Dalrymple *et al* 2011), I intended my work to contribute to improving the effectiveness of this widely used technique and had talked informally with colleagues about the need to update the existing guidelines on plant reintroductions. In 2010 I was in the right place at the right time and was invited to join the International Union for the Conservation of Nature (IUCN) Task Force charged with revising the existing guidelines on reintroductions. This article aims to introduce the new IUCN Guidelines for Reintroductions and Other Conservation Translocations, whilst giving pointers for achieving impact in other areas of ecology. My own experiences have been significantly strengthened by the addition of insights from my Guidelines co-authors included here.

The IUCN Guidelines for Re-introduction were published in 1998 in response to the growing use of reintroductions and re-inforcements as a conservation tool for threatened species. In 2010 IUCN's Species Survival Commission (SSC) decided the Guidelines needed review and revision, because the growth in use of reintroductions had led to advances in our understanding of the scientific principles, ethics and practical issues associated with successful reintroductions (see Box). Furthermore, the extent of current and predicted environmental change has led to the use of interventions such as assisted colonisation. Translocations of varying risk are being attempted and the IUCN felt that the Guidelines needed to reflect this. However, the Guidelines do not advocate translocations and instead provide a framework of 'least regret' i.e. they aim to encourage users to balance the responsibility for preventing species extinctions with the potential for causing harm either ecologically or socio-economically by undertaking a translocation.

POLICY-RELEVANT SCIENCE

"One thing the ... drafters of the first guidelines probably never anticipated was the degree to which the "guidelines" would become the basis of policy or even the foundation of legislation."

Phil Seddon

University of Otago, New Zealand

When revising the Guidelines, we were very conscious that they may again form the basis of national policy. This responsibility meant that we had to envisage every possible motivation and method in undertaking translocations was accounted for. Francois Sarrazin, l'Université Pierre et Marie Curie, France, highlighted the challenge of finding the "balance between the level of doubt that intrinsically drives science" whilst avoiding the temptation to hedge every statement with caution and ambiguity. This was certainly a new experience for me and I found the process of retrospectively applying our guiding statements to real case-studies was extremely useful. It was only by doing this that we could find the grey areas and discrepancies in what we had written.

BUILDING AND USING NETWORKS

My involvement in the revision and expansion of the Guidelines started with undertaking a systematic review of plant reintroductions with the Centre for Evidence-Based Conservation, Bangor University, and joining the IUCN Reintroduction Specialist Group (RSG). The RSG is a group of over 200 practitioners and researchers working on translocations who use the network to keep up-to-date and share experiences. When my systematic review was in draft form, I sent it to the RSG for feedback and in return was contacted by Mark Stanley Price to ask if I would join his Task Force. Without engaging in this process of open peer-review, I would never have had the opportunity to use the findings of the review where it could be of most use. I encourage everyone to do the same – share your work even in its early forms.

The production of the guidelines themselves benefited from wider networks as the following quote demonstrates:

"The IUCN decision of working [on] the guidelines in a joint effort between the

Reintroduction Specialist Group and the Invasive Species Specialist Group ... has been particularly important, because invasion science can help better understanding the patterns of translocations, and because we know from past experiences that in some cases badly planned translocations have led to very negative outcomes for biodiversity.”

Piero Genovesi

Chair, IUCN Invasive Species Specialist Group

Further to this, we all used our individual networks to make sure the review of the final draft was comprehensive in terms of taxonomic and geographical scope. As one of the less established members of the Task Force, I was particularly pleased to make links between the Task Force and my network of plant conservationists, many of whom are not members of IUCN groups.

CROSSING DISCIPLINES

I’m sure many *Bulletin* readers will be aware of the importance of interdisciplinarity in finding solutions to environmental challenges. However, I admit that when I was working on the Guidelines, I felt that we were writing for an audience of conservation practitioners and while this involved using plain English, it required little consideration of disciplines beyond ecology. Just how narrow my perspective was, was made clear to me when I attempted to respond to a paper by an environmental historian, Dolly Jørgensen (2011) on the concept of historic range. On her recommendation, we have adopted the term ‘indigenous range’ as a replacement for the problematic concept of historic range but I found that writing the first definition of indigenous range was very challenging. The process of honing this key definition was made much more rigorous by the thought processes I went through in responding to Jørgensen’s paper (Dalrymple & Moehrenschrager 2013).

“While I enjoyed our Guidelines development process very much, I suspect that if I was doing it again I would have developed a membership wider than the RSG [and] ISSG. There are others with expertise and interest in reintroductions and I suspect we were too many like-minded people – though we were greatly enhanced by the diversity we had. Only late in the day, with the welcome input by Richard Reading did we consider adequately the social side of reintroductions.”

Mark Stanley Price

Chair, IUCN Task Force on Moving Plants and Animals for Conservation Purposes

IMPACT AT MANY LEVELS

The actual impact of the Guidelines will be difficult to discern but the adoption of the document and its appendices into legislation by the Council of Europe in late 2012 is an early indication of its potential influence. However, the impact the process has had on the members of the Task Force has been very positive as the following quote demonstrates:

“I found the process humbling and exciting, because it is clear that the need for innovative approaches to combat the extinction crisis is ever increasing, and conservation translocations are certainly one of the tools that will only be gaining in importance.”

Axel Moehrenschrager

Calgary Zoological Society, Canada

I will finish by echoing Axel’s sentiment – the process of joining and working with the Task Force has been incredibly rewarding. I am hoping to learn from the serendipitous circumstances that led to my involvement and keep networking, crossing disciplines and keeping in mind the ultimate application of my research whether it be policy or practice, in the hope that similar opportunities might find me.

ACKNOWLEDGEMENTS

Thanks to the BES for financial support of Systematic Review number CEE 07-008 (Ecology Into Policy Grant 921/1146), the Environment Agency-Abu Dhabi for support of the IUCN Reintroduction Specialist Group, and Al Ain Wildlife Park & Resort for funding and hosting Task Force meetings.

The IUCN Guidelines for Reintroductions and Other Translocations are soon to be available at: <http://www.iucnsscrg.org>

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WHAT'S NEW?

Differences between 1998 and 2012

GUIDELINES TO REFLECT ADVANCES IN CONSERVATION SCIENCE AND PRACTICE

The 1998 Guidelines were concise and made very accessible resulting in wide uptake. However, the range of concerns that translocation practitioners must address has greatly expanded since then and the new Guidelines reflect this. The developments that have influenced the content of the new Guidelines can be summarised as follows:

1. Those relating to species and their biology:

- Greater understanding of how animals perceive the world, understanding of sentience, leading to greater welfare issues and precautions, plus new mechanisms for detecting stress;
- Increased acceptance of the importance of animal behaviour/ sociality in translocation success;
- Genetic impacts of translocations on both the populations from which individuals have been collected and the translocated individuals themselves;
- The lessons learnt from an accumulating record of experience, greater reporting of translocations, and reporting of failures and their analysis;
- The acknowledgement that long-lived, slow-growing species require conservation interventions that are effective over timescales appropriate to their lifecycle;
- The previous focus on large mammals or raptor/scavenger birds reintroductions has been expanded to specifically mention issues relevant to plants, amphibians and invertebrates;
- Development of ethical thinking and greater acceptance that conservation interventions are always values-based even when the rationale can appear to be entirely scientific and objective.

2. Those relating to the external environment of species:

- An awareness that habitats may appear intact but in fact are undergoing incremental decline;
- That species numbers declines lead to loss of functions at community level e.g. control of herbivore numbers, pollination, food provision;
- The realisation that threatened species are subject to many threats that might compound impacts and act synergistically;
- Global environmental change including pollution, land use change and climate change;
- We live in a far more regulatory world;
- Greater knowledge of invasives and their impacts and costs.

GREATER EMPHASIS ON RISK ASSESSMENT

The involvement of the Invasive Species Specialist Group has contributed to the greater emphasis on risk assessment, particularly in assessing the impact of translocating organisms to new sites. However, risk assessment is also dealt with in reference to the potential for failure of the translocation and includes threat assessment, financial and socio-economic risk.

INCLUSION OF CONSERVATION INTRODUCTIONS

The 1998 Guidelines included "**Conservation / Benign Introductions:** an attempt to establish a species, for the purpose of conservation, outside its recorded distribution but within appropriate habitat and eco-geographical area. **This is a feasible conservation tool only when there is no remaining area left within a species' historic range.**" Very little else was said on the matter of conservation introductions throughout the rest of the document. Conservation introductions include interventions such as assisted colonisation (also known as assisted migration and managed relocation), which are often, although not exclusively, associated with climate change. The new Guidelines treat conservation introductions much more comprehensively and include assisted colonisation as one option within the overall spectrum of translocations.

The inclusion of assisted colonisation in the new Guidelines might be interpreted as advocacy for using this intervention. However, we are keen to stress that this is not the case and that all translocations are always risky, particularly so when the target species is being moved to a new area. To continue to omit assisted colonisation from the Guidelines would be irresponsible on our part given that many conservation practitioners are considering and in some cases, undertaking assisted colonisation. We hope that the new Guidelines will alert practitioners to the risks associated with all translocations and in doing so, prevent any action that will cause harm to the target species or the recipient ecosystems.

Having shaken the dust of Natural England off my feet, I am now happily settled into retirement in Oxford, trying to bring some order into my research at Wytham Woods. Nigel Fisher and I have also been looking through material that came out of Charles Elton's office when he retired, which is stored in the Oxford Natural History Museum and the Radcliffe Science Library. There are old aerial photographs; bits of beetle-bored wood that were clearly teaching aids; boxes of 2x2 inch glass lantern slides; and notebooks.

Five large volumes detail his visits to Wytham during the 1950s and 1960s in particular, recording what he saw on that day, what was going on there. They are potentially a treasure trove of information for interpreting how and why these Woods have subsequently changed. We are planning to get the scanned (fortunately most are typescript) such that they can be made available and searched more easily.

Another intriguing couple of books contain photographs of ecology field courses run in Wytham Woods in the early 1950s. These show tall herbs and regeneration along the rides where for much of at least the last 20 years there has been little.

They show students in action – many of the names are familiar as past and present luminaries of the society. Health and safety was less of a concern to judge by the pictures of people obviously

having climbed up trees to do sampling with sweep nets; and would R B Freeman get away with wielding that knife today (see below)?

Changes in fashion are apparent – the plethora of tweed jackets, even ties, amongst the young men; the skirts and neck scarves of the rather few women; a greater number of pipes and cigarettes in evidence than might be expected now. I wonder what happened to Miss Dobbs and Miss Bennett? What was it like being a woman ecologist at that time?

We think it might be interesting to create a 'social history' of research in Wytham Woods comprising the anecdotes, memories and photographs that don't make it into theses, or published papers. Eventually it could become a web-based resource but for the moment we would just be interested in whether those who worked (or walked) in Wytham Woods in the past would be interested in contributing stories (or pictures) for us to collate.

Readers interested in sharing their memories of working in Wytham Woods can contact Keith.kirby@bnc.oxon.org

If anyone knows what has become of Miss Dobbs or Miss Bennett, please contact the Bulletin editor, who notes she was born the day before that photograph was taken. Bulletin@britishecologicalsociety.org



Ecology Field Course, Wytham Woods, 1952. DAY 4 (11 Sept.) Before sweeping the canopy the nearby habitat interspersed areas, Upper Ride. L to R: C. Elton, G. Blane, Southern, A. MacFadyen, M. Todorovic, T. Myers, A. Dixon, T. Hagenal, J. Cook, R. Freeman. (B.A.P. Strip 55.8)



Ecology Field Course, Wytham Woods, 1952. Day 4, 5th Sept. R.B. Freeman pursuing a beetle under bark of fairly recently fallen beech, Brogden's Belt. (B.A.P. Strip 45.42).



Ecology Field Course, Wytham Woods, 1952. Day 4, 5th Sept. Miss T. Dobbs and Miss E. Bennett collecting from under bark of fairly freshly fallen beech, Brogden's Belt. (B.A.P. Strip 45.39).

What does not get into the THESIS...

Keith Kirby



Photo of Keith by Alan Crowden; all other photographs are copyright Department of Zoology, University of Oxford and we are grateful for permission to use them.

*"Australia.. a strange land
containing unusual animals"*

WHICH HISTORY?



FROM OUR SOUTHERN CORRESPONDENT(S)

John Wiens and Richard Hobbs

Another year, another visit by John to Western Australia to collaborate with Richard and, inevitably, to visit Little Creatures Brewery, a place where the two colleagues have mused over things ecological while drinking beer.

Richard and John have a long history of meeting in various places, and the meetings usually start with a disagreement about whose turn it is to buy the beers, margaritas, or whatever. The trouble with history is that it happened in the past and is usually based at best on partial evidence and selective recollections. Hence, it is open to radically different interpretations. Indeed, Richard frequently uses selective memory loss to conclude that it must be John's round, and John counters with equally certain but different recollections of the past. Which history is correct?

The problem is that 'history', as in the recounting of past events rather than what actually happened, must be chronicled by someone, and there's the rub. The history of conflicts is usually written by the winners. The histories of countries are often written by the European colonists or their descendents. The history of whose round it is often written by the fastest one to say "It's your turn." 'History' is a product of who's telling the story, which is why accounts of the same events (for example, who bought last time) can differ so markedly.

The context of the time also affects perceptions of history. In sciences such as ecology, the history of ideas often emphasizes the concepts in vogue at a particular time. For some time, equilibrium concepts bolstered the view that ecological systems varied within a relatively narrow range and ecological succession was an orderly, predictable process. Such concepts influenced the questions asked and what was regarded as the usual state of nature. The continuing grasp of past thinking—an unwritten 'sense of history'—permeates any science, ecology included, and may strongly influence or even impede its development.

Thinking about history over beers at Little Creatures, we got to wondering how history plays into ecology in North America and Australia (see *BES Bulletin* 42(1): 49–51 for our earlier musings on this topic). Australia is an ancient land, parts of which have been largely undisturbed, geologically, since

Gondwanan times. The soils are similarly ancient and generally poor in nutrients. Australia is also, over much of the continent, one of earth's driest places, and has been so for many millennia. North America, by contrast, has been geologically active and subjected to multiple glaciations. It has been a more fertile and wetter place, leading to a greater variety of major vegetation types spread over the continent as a whole. The ebb and flow of vegetation over the North American landscape over the past 10,000 years has been documented through a rich record of pollen in lakebed deposits, a recording of history that is much more scattered and fragmentary in the dryness of Australia.

These are the histories written by geologists, paleontologists, and palynologists to piece together the deep environmental histories of the continents. Other more recent histories recorded the conditions experienced by the first European explorers and settlers. The first European immigrants to North America encountered environments that were largely familiar, and (after waging several wars and displacing indigenous populations) they set about converting the woodlands and prairies to farmlands. The colonization of Australia occurred

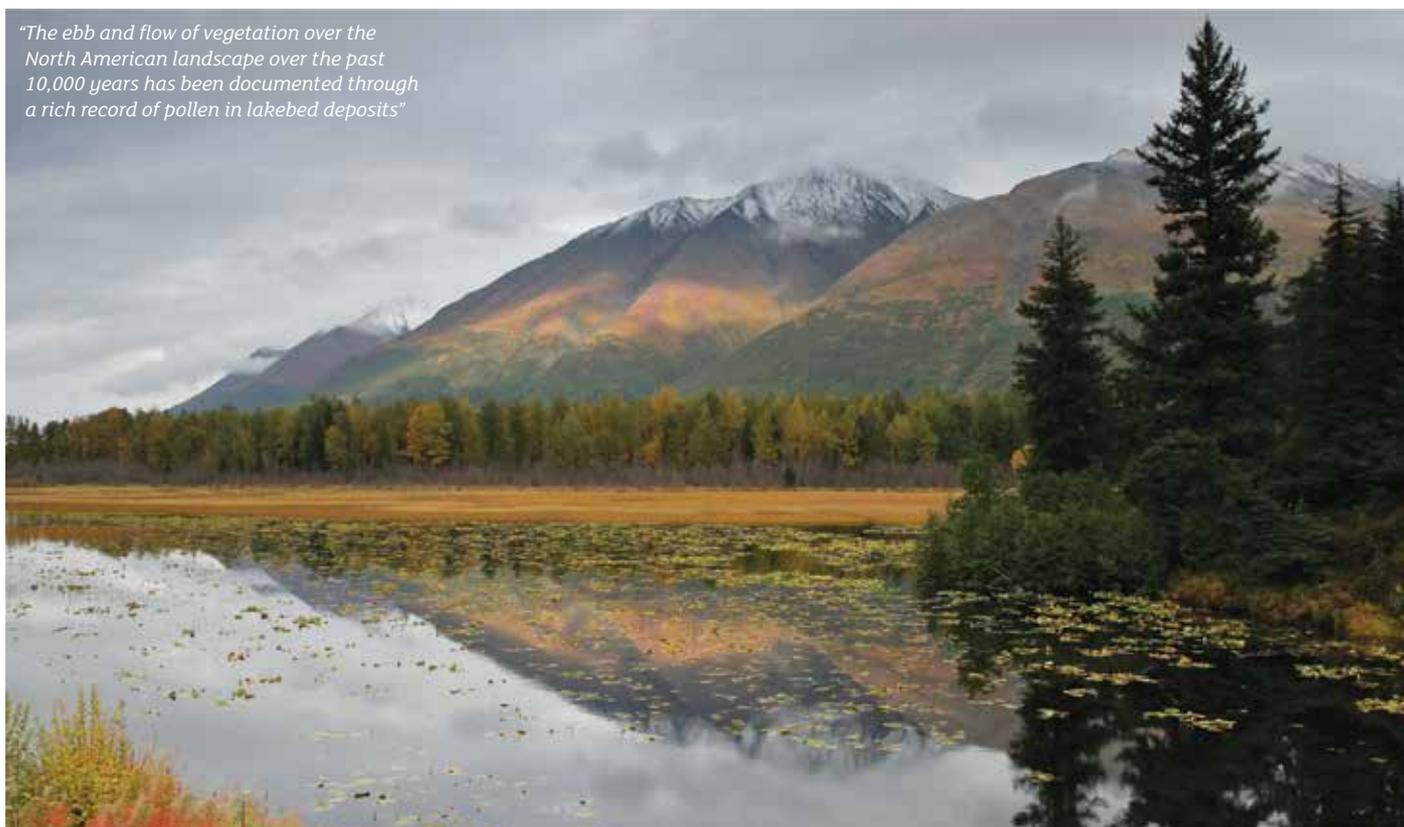
two centuries later, and those who came found a strange land containing unusual animals, strikingly unfamiliar vegetation, and Aboriginal cultures they did not understand. The 'Europeanization' of Australia through introductions of plants and animals, extinction of a range of native animals, and establishment of farmlands and sheep and cattle production fundamentally altered Australian landscapes, at least in the less arid regions away from the desert interior. In both continents, much of the history taught in schools dates from the arrival of Europeans. The effects of indigenous peoples on the flora and fauna—which occurred over thousands of years in North America and tens of thousands of years in Australia—are just beginning to be appreciated by ecologists and anthropologists, if not yet by the general public.

The point of all this, we realized, is that 'history' can be quite different depending on where you are, how far back you look, and whose version of history you use (not to mention how many beers you've had). The differences become important as ecologists, managers, and conservationists set targets or baselines. Consider the restoration of degraded ecosystems. Some in North America argue that the

aim should be to return the environment to its 'original' state, before Columbus landed on Hispaniola. This goal is not only unattainable, due to the massive changes humans have inflicted upon the landscape since then, but it also ignores the earlier impacts of indigenous populations, stretching back for additional centuries. The history of human alterations of the environment did not begin with Columbus in North America, or with the Dutch explorers who first set foot on Australia a century later.

Or consider the management of disturbance-prone ecosystems. For decades, management of fire in forests and bushlands emphasized suppression: unchecked fires damaged valuable resources, threatened human dwellings, and disrupted the inherent stability of the ecosystems. Historical variation in fire frequency and severity has now been incorporated into fire-management policies in North America, although there are debates about what span of history should be used. In northern Australia, the ways fire was used by Aborigines over millennia have been incorporated into fire-management practices in savanna ecosystems.

"The ebb and flow of vegetation over the North American landscape over the past 10,000 years has been documented through a rich record of pollen in lakebed deposits"



"Australia is an ancient land, parts of which have been largely undisturbed, geologically, since Gondwanan times"



Yet history cannot be ignored. History is what tells us how we got to where we are now, and that in turn sets some boundaries on where we are likely to go in the future. Knowing how different species have responded to environmental changes in the past, for example, can reveal much about their resiliency or vulnerability to future changes. Understanding how the ecological and life-history attributes of species have influenced community assembly following past disturbances may help us predict responses in the future. Determining why particular restoration or management practices have or have not worked in the past may provide hints about which to employ under the changed conditions of the future. Knowing which invasive species have disrupted ecosystems and which have not can help to direct control efforts more effectively as invasions become more frequent. In all of these situations, history offers important insights. The trick is to be judicious in how history is used, to learn from it rather than to be its captive.

Having cleverly had the foresight to jot the preceding thoughts down on a napkin and put it in his pocket for later, John used history judiciously and pointed out that it was Richard's round. In characteristic fashion, Richard was equivocal about the role of history in reaching conclusions like this, but, in the absence of solid information either way, obligingly trotted off to the bar to order more beers.

• **John Wiens** is Chief Scientist with PRBO Conservation Research in California. John visits Perth in his capacity as Winthrop Research Professor in the School of Plant Biology at the University of Western Australia, where **Richard Hobbs** is Australian Laureate Fellow.



Or consider the recovery of imperiled species. The recovery goals for endangered species in both continents aim to attain self-sustaining populations. The demographic attributes required to meet this goal, however, differ depending on the scope of history used. Is it the current environment, that which existed when a species was officially listed (generally when it was perilously close to extinction), the time prior to European colonization, or something else?

Or here's a more immediate example. Several decades ago a road was built on the Oregon coast by filling in an area of the Salmon River estuary as part of an amusement park development that later failed. The U.S. Forest Service is now restoring the estuary, removing the road and the trees that have grown alongside over the decades. The history that determines the ecologists' desired state goes back before the road, when the trees were not there but the estuary was. For many of the public, however, the relevant history is more recent. The trees are part of the desired state, so people object to their removal.

So what point in the flow of history determines the desired state? Is it when the only disturbances affecting the system were natural rather than anthropogenic? Is it when it was first realized that there was a problem

requiring restoration, management, or conservation? Is it what we fondly remember from our childhood? Is it the blurry vision of the past that emerges after too many pale ales at Little Creatures? If a major disturbance occurs at an identifiable point in time (the eruption of Mt. Saint Helens, the *Exxon Valdez* oil spill, or the onset of mining in the jarrah forest in Western Australia come to mind), it may seem obvious that the historical reference point is whatever occurred just before the disturbance. But even then the undisturbed environment would probably have changed over the interim, shifting the target. Ecosystems are dynamic; stability or steady-state is an illusion quickly destroyed by time.

This becomes all the more obvious when we consider the cascading effects of future climate change on ecosystems, landscapes, and people. In many cases, systems may move beyond their historic range of variation (however defined) into novel configurations and dynamics not previously encountered. If the future is so uncertain and 'history' is so open to differing interpretations depending on whose version of history is used, how far back it goes, and where it occurred, one might question whether history has anything important to contribute to restoration, resource management, or conservation.

The Chartered Institute of Ecology and Environmental Management



Sally Hayns MCIEEM / Chief Executive Officer, Chartered Institute of Ecology and Environmental Management
T: 01962 868626 / Enquiries @ ieem.net / www.ieem.net

A CHARTERED INSTITUTE

The eagle-eyed amongst you will have spotted the name change as we officially became the Chartered Institute of Ecology and Environmental Management (CIEEM) on the 1st April. The move from a limited liability company to a body incorporated by Royal Charter is increasingly complex the more activities and responsibilities one has, but we are nearly there now and it has been an exciting time for all involved in the Institute's development and growth over the past 22 years. We will shortly be holding a celebratory event to mark the occasion.

One of the powers in the Charter is to establish and manage a new Professional Register – that of Chartered Ecologists. This is both a privilege and a responsibility so we are delighted to have some of our past-Presidents, senior members and representatives from some of the UK's statutory environmental bodies on the working group developing the criteria and assessment process. The intention is to open the Register for applications later this year and for the award of Chartered Ecologist (CEcol) to represent a high standard of professional practice recognised by those within and without the profession alike. Members of other professional bodies that meet the eligibility criteria will be able to apply for registration as well as our own members.

CLOSING THE ECOLOGICAL SKILLS GAP

Many BES members will recall the IEEM-commissioned research into the perceived ecological skills gap and skills shortages in the UK and Ireland. We have been acting on the recommendations in the report and in December we published a generic Competency Framework for the profession. The Framework was developed in partnership with Hyder Cresswell and involved consultation

with a wide group of internal and external stakeholders including other professional bodies, statutory agencies and CPD providers. It identifies 4 levels of increasing competence (Basic, Capable, Accomplished and Authoritative) and 14 themes or areas of practice. The 14 themes cover 7 areas of technical practice related to ecological and environmental knowledge and skills (such as environmental management) and 7 areas of transferable practice covering knowledge and skills that can be applied within almost any profession (e.g. project management). The themes are further sub-divided to give 46 sub-themes in total.

The Competency Framework is already being influential in how the Chartered Institute promotes professional competence and, from January 2014, it will become the basis for the membership grades eligibility criteria, with applicants needing to satisfy a minimum number of competences at the appropriate level to be admitted. We are also using the framework to develop competency-based job role profiles which is informing our careers advice and careers promotion.

Another of the recommendations from the Ecological Skills Gap research was to develop a Degree Accreditation Scheme that recognised those programmes that enable graduates to acquire the knowledge and practical skills that employers are looking for. The scheme was launched at the beginning of February and is focused on core ecological and environmental theory and significant practical experience, much of which should be in the form of fieldwork. The Institute believes that experience 'in the field' is essential to gaining skills that are crucially important to employers seeking to recruit graduates. These include

- the application of theoretical knowledge in 'real world' situations

- the teaching of some skills (e.g. species identification) that can only be taught, or can best be taught, in the field
- exposure to uncontrolled, unpredictable field situations
- the development of scientific interpretation, analytical and report-writing skills.

The scheme is also linked to the Competency Framework as graduates of accredited degrees are eligible to join the Chartered Institute as Graduate Members (Grad CIEEM) without further assessment of competence.

We are continuing to recruit assessors to assist with the accreditation process. Assessors work in pairs and will receive an honorarium of £500 for each assessment that they undertake.

Further details about the degree accreditation scheme are available on the website at www.cieem.net

OVERSEAS TERRITORIES SPECIAL INTEREST GROUP

Over 50 people attended the inaugural event of the Overseas Territories Special Interest Group at the Royal Astronomical Society in London at the end of January. They discussed current programmes and future priorities for supporting the Overseas Territories and heard contributions from a range of organisations including RSPB, Birdlife Europe and the UK Overseas Territories Conservation Forum as well as case studies from the Cayman Islands and St Helena. A report on the conference, including the participants' ideas on future steps, will be available in the June issue of *In Practice*.

BEST PRACTICE AWARDS

The 2012 Best Practice Award for Outstanding Knowledge Exchange was awarded to 'Coastal Vegetated Shingle of Great Britain: 25 years of research

and application' and was accepted by Dr Roland Randall CEnv FCIEEM at the Autumn Conference in Cardiff.

The 'Coastal Vegetated Shingle of Great Britain' project is a pioneering classification and baseline survey over 25 years that has enabled sites to be revisited to provide consistent re-survey that delivers BAP Priority habitat and Annex 1 coastal vegetated shingle habitat extents and enhanced knowledge of the ecosystem.

Collaboration between Universities and statutory agencies has fostered a substantial body of academic research with feedback to the understanding of the habitat and human impacts; with integration into management advice, practical protection guidance and conservation actions. Adoption of new technologies, remote-sensing and geospatial analysis now provide robust methods and a framework for repeat survey, monitoring and reporting. This foundation, built on past work combined with innovation provides an important lesson for survey standards and the value of habitat survey and continuity of monitoring.

The work was originally commissioned from Girton College, Cambridge, by the Coastal Ecology Branch of the Nature Conservancy Council's Chief Scientist

Directorate in 1987 as part of an attempt to describe the size, location and quality of the main coastal habitats of Great Britain. The collection of basic data was an important first step in identifying the most significant sites, and for establishing a basis for monitoring and understanding the impact of monitoring operations and major development projects. These data were then used to develop a classification of the main shingle plant communities found in Great Britain.

The judges considered this project to be good, sound science, and a genuine example of 'best practice', which was hard to fault. It developed, over a considerable period of time, a well-managed project producing a high quality evidence base for the vegetated shingle habitat. In their opinion the project has demonstrated an outstanding contribution to knowledge exchange, training and education by not only communicating with stakeholders and a wider audience but by influencing policy and providing new opportunities for education and training.

2013 CIEEM PROFESSIONAL DEVELOPMENT PROGRAMME

Details of our 2013 Professional Development Programme are now available online at www.cieem.net

NEW FELLOWS

Four new Fellows have recently been admitted to fellowship:

Mike Barker is an environmental consultant engaged in the strategic planning and delivery of utilities and their interaction with the natural environment. He has worked on projects of all sizes including major infrastructure projects and is adept at forming partnership and encouraging professional networks to increase inter-disciplinary understanding. Mike has been very active in promoting European-wide networking and represents IEEM on the European Network of Environmental Professional's Biodiversity Group and has recently formed the first of CIEEM's Special Interest Groups (Overseas Territories).

Alastair Driver is the National Conservation Manager for the Environment Agency (England and Wales). In this role he oversees a team of national advisers responsible for all conservation strategies, policies and procedures of the EA. He is recognised nationally and internationally as having an impressive technical knowledge of effective river catchment management to support biodiversity outcomes.

Will Manley is a former Vice President of the Institute and is currently a director at the Royal Agricultural College. His research has informed policy and policy makers within the land management sectors in England and Scotland, for example influencing agri-environment payment structures, the use of 'set-aside' and novel approaches to Higher Level Stewardship.

Pam Nolan is currently the National Technical Manager (Conservation and Biodiversity) for the Environment Agency (England and Wales). Pam has pioneered professional training and development plans for conservation and ecology within the Agency, initiated a training and accreditation programme for aquatic biologists which was a winner of an IEEM Best Practice Award and is described as having personally driven and overseen the implementation of a wide range of initiatives that have ensured that hundreds of ecology and biodiversity staff within Europe's largest environmental agency have access to better training, support and professional guidance.



Outgoing President Professor Penny Anderson presents Dr Roland Randall with the Best Practice Award

Rant & Reason

Dr Markus Eichhorn / School of Biology, University of Nottingham
markus.eichhorn@nottingham.ac.uk / @BESForests

As a school leaver, my intention at university was to specialise in biochemistry. I hadn't particularly enjoyed ecology at A-level, didn't really know what an ecologist was, and it took a while for me to be won over. Eventually it was necessary to come out to my parents, and I can still recall the long pause on the line that followed informing my mother that I intended to become an ecologist. Her perplexed response will haunt me forever:

“But... but you’ve never cared about the whales!”

It was certainly true at the time, and I'm still passionate about remarkably little beyond terrestrial autotrophs. This slightly comical anecdote, however, is a roundabout way to approach a topic that never fails to rile me, which is the popular misunderstanding of ecology.

Ecology is everywhere. My favourite item in the local supermarket is something known as 'Ecological Laundry Bleach' – one wonders whether it's recommended for piscine toxicity assays. We may no longer be insulted by the presence of *The Ecologist* magazine in newsagents, but its website lives on, featuring at time of writing such articles as 'Resurgence of the Human Spirit' and 'Energy-Efficient Mortgages Now Widely Available'. I don't doubt that there is some fine campaigning journalism contained therein, but it's manifestly environmentalism rather than ecology *sensu stricto*. I could spend many indignant hours writing angry letters to newspapers regarding their abuse of the dictionary definition of ecologists to refer to eco-warriors, GM protestors, vegans, hippies or any other subset of the

population. Though there may be some overlap, I suspect that the categories are no more accurate than 'smokers' or 'Lib Dem voters'.

By no means is ours the only scientific profession inflicted with this confusion. Chemists probably get irate when others assume that they work at a high-street pharmacist. We should perhaps be flattered that our field has so much of a presence in the common vernacular, as it implies a background level of interest that may go no further than a misnomer, yet is still preferable to complete ignorance.

“First they tell us one thing, then another... they don't know what they're talking about”

The more serious problems arise because the lack of clarity can lead to an absence of authority on ecological matters. Again, we are not alone in this.

A similar challenge is faced by doctors attempting to inform the presentation of medical evidence in the media. When a nutritional fad emerges (cf: "You should drink eight glasses of water a day!"), followed at some remove by the presentation of research findings ("Actually, it's of no obvious benefit, and drinking too much water can be bad for you"), the whole field is undermined. Once a whole topic becomes the subject of pub-bore commentary on the level of "First they tell us one thing, then another... they don't know what they're talking about" the argument has been lost. Regardless of whether we associate ourselves within the ambiguous collective pronoun, or resent the others implicitly contained, we are all the target. Climate change has fallen under the same curse.

The same happens in ecology. I was once caught broadside by a warden when he invoked Frans Vera's theories on forest regeneration to justify felling a harmless patch of the wood that I was working in. He was appalled that I hadn't even heard of Vera at the time, let alone read a book that had become a stealth classic

among professional forest managers. His disdain was evident. That the book in question was published by a commercial press and therefore off the radar of most forest ecologists meant that its immense impact on practitioners was not controlled by the usual processes of academic presentation and disputation.

“a topic that never fails to rile me... is the popular misunderstanding of ecology.”

Many of us have found ourselves fighting a rearguard action against something that we consider egregious nonsense but where we have failed to demonstrate any authority in the public eye. Similar cases of frontier thinking, such as Gaia theory or Pleistocene rewilding, have erupted in the media as the voice of ecology at large, whilst a majority of ecologists would shudder to be associated with such ideas, at least until they've been properly published in *our* journals. As an aside, would it be worth sending out a communiqué dissociating ourselves from anything that James Lovelock says? It may save time.

“Tell everyone that you're an ecologist – not an academic, student or environmental consultant”

Who will politicians, journalists or the public turn to for opinions on ecological topics: The Ecologist, Greenpeace and other NGOs, or the impenetrable academic prose of inaccessible journal articles? If we aspire to some form of primacy over the other sources then there are two options. Either we need to set the agenda of the first, which seems like a rather indirect approach, or else we need to communicate the latter more clearly and stridently. If we consider ourselves to be the 'true' ecologists then this belief needs to be justified.

There is an immense amount of work done for the wider understanding of ecology by the BES – plaudits must go to the Public & Policy team in particular, with the Education group also making a vital contribution. This does not absolve the rest of us of our responsibilities. The answer is not to throw tantrums that no-one listens to us, nor to retreat into our own self-affirming clique. It's also counter-productive to engage in squabbling with others who pretend to the title of 'ecologists' and who, welcome or not, weigh in on issues that we piously consider to be our exclusive bailiwick. The word is lost to us now and we can't be too precious about its usage. Instead, a persistent, polite and patient campaign of comment and correction will serve us better in the long run. Tell everyone that you're an ecologist – not an academic, student or environmental consultant – even though the subsequent conversation may become tiresome. Make that your resolution for the BES centenary year. It's a simple thing but the more we do it, the broader recognition of our science will become.

As for me, I'll stick to the angry letter-writing. Someone has to. At some point though I must have a chat with my mother about the population dynamics of marine cetaceans.

Markus's rant is so manifestly reasonable that we didn't feel it needed an independent response.

We wanted to illustrate the piece with a photograph of the author bearing a calm and happy expression, but he assures us that no such photograph exists.



PUBLISHING NEWS

Ecological Reviews

Hefin Jones and Catherine Hill

@THJ1961

Ecological Reviews is a book series developed jointly by the British Ecological Society and Cambridge University Press. The series consists of edited, multi-author volumes at the cutting edge of modern ecology, with each volume providing a synthesis of understanding of a topic that has achieved a critical mass of knowledge in recent years. These provide a forum for current topics that are likely to be of long-term importance to the progress of the field and aim to set high international standards in ecological sciences.

Recent online developments within publishing means that all volumes are now available as e-books in a variety of different formats for those who prefer to read while on the move.

BES members receive a 20% discount on the full price of *Ecological Reviews* volumes as well as off other selected CUP series from their Ecology and Conservation lists. Visit www.cambridge.org/ER for more information about the series or to take advantage of this discount.

SERIES EDITOR – VACANCY

The *Ecological Reviews* series has an Editorial Board that works hard to ensure the quality of this series remains high as well as working together to introduce ideas for new volumes to be commissioned. This Board has been ably led by our Series Editor, Hefin Jones, for some years but this appointment is due to end in December 2013. We are currently seeking applications for a new Series Editor to

take over from Hefin in late 2013. This role would suit an active researcher with excellent contacts within the international ecological community. The Series Editor will attend approximately quarterly meetings to report to the Society and its Publisher, Cambridge University Press, on the status of volumes and play an active role in driving the strategic direction of the series.

For a full job description, please visit the BES website http://www.britishecologicalsociety.org/about_bes/opportunities_bes/index.php and please contact Catherine Hill Catherine@britishecologicalsociety.org directly if you have any queries.

HOW TO GET INVOLVED

Even if the Series Editor role is not for you, we'd still appreciate hearing from you – please contact either Hefin Jones or Catherine Hill directly to give us your feedback on the series. We are particularly

interested in receiving ideas for new volumes, so that we can ensure we are covering the most relevant topics for our members. In recent years, we have had volumes originating from a number of different outlets, including successful BES Symposia, Editorial Board brainstorming and direct suggestions from engaged ecologists, so please contact us to let us know which topics you would like to see covered in future years.

LATEST VOLUMES

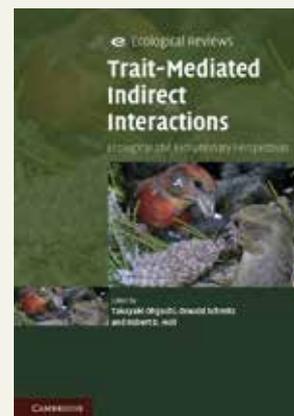
During 2012, three new volumes were published and there are a further two volumes due to be published in 2013.

PUBLISHED IN 2012

Trait-Mediated Indirect Interactions, edited by Ohgushi, Schmitz and Holt

This volume reviews state-of-the-art research into trait-based effects and their importance in community and ecosystem ecology. It is the first volume synthesising the rapidly

expanding research field of trait-mediated indirect effects and highlights how the conceptual framework of these effects can aid the understanding of evolutionary processes, population dynamics, community structure and stability, and ecosystem function.



BIRDS AND HABITAT, EDITED BY FULLER

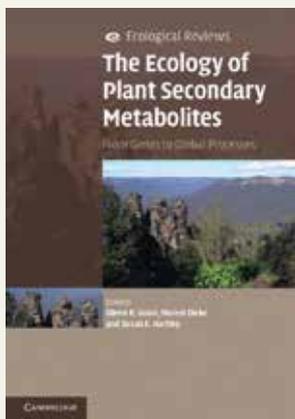
Birds and Habitat synthesises important concepts, patterns and issues relating to avian habitat selection. Case studies are provided from Europe, North America and Australia, drawing comparisons

between different regions and continents to demonstrate the wide applicability of habitat research. It offers a synthesis of concepts, patterns and issues that will interest students, researchers and conservation practitioners.



THE ECOLOGY OF PLANT SECONDARY METABOLITES, EDITED BY IASON, DICKE AND HARTLEY

This volume describes key developments in the field, providing a synthesis of the function, ecology and evolution of plant secondary metabolites, revealing our increased awareness of their integrative role in connecting natural systems. It is a key reference for researchers and graduate students in the field and for teachers of advanced undergraduate chemical ecology courses.



FORTHCOMING IN 2013

Forests and Global Change, edited by Coomes, Burslem and Simonson

This volume will provide a global synthesis of the interactions of forests with the drivers of global change, combining perspectives from both tropical and temperate systems.

Peatland Restoration and Ecosystem Services: Science, Policy and Practice, edited by Bonn, Allott, Evans, Joosten and Stoneman

This volume reviews the delivery of ecosystem services through restoration, with case studies from across the world illustrating challenges and opportunities for restoration and sustainable management.

• **Hefin Jones** is at the Cardiff University School of Biosciences; **Catherine Hill** is Head of Publications at the British Ecological Society

BES PUBLICATIONS TEAM

The current BES Publications team are pictured below. Graziella Iossa is currently on maternity leave.



Catherine Hill, Head of Publications



Andrea Baier, Managing Editor, Journal of Ecology and Journal of Applied Ecology



Liz Baker, Managing Editor, Journal of Animal Ecology and Functional Ecology



Peter Livermore, Assistant Editor, Journal of Animal Ecology



Erika Newton, Assistant Editor, Journal of Applied Ecology



Jennifer Meyer, Assistant Editor, Functional Ecology



Samantha Ponton, Assistant Editor, Methods in Ecology and Evolution

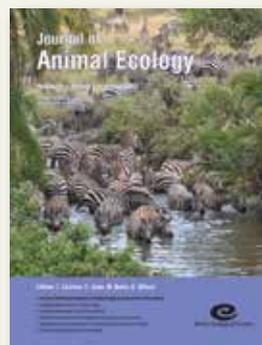
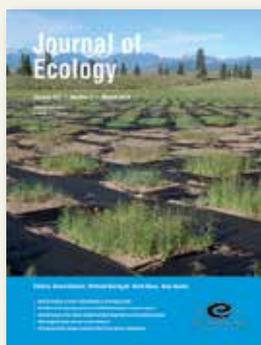
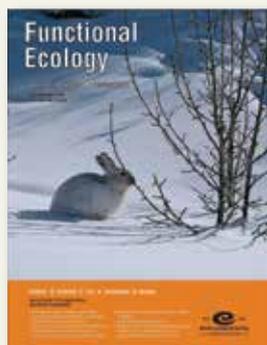


Lauren Sandhu, Assistant Editor, Journal of Ecology

BES Journals compliant with RCUK's new open access policy



Catherine Hill / Head of Publications at the British Ecological Society



From 1 April 2013 until further notice, any research paper with work funded by Research Councils UK must be submitted for publication in journals that are compliant with the RCUK's new open access policy. This means researchers must select journals that either:

Offer a fully gold open access route, allowing unrestricted access to the version of record immediately after publication;

or

If gold open access route is not available, allow authors to deposit the accepted article (following peer review) in a repository of their choice with a maximum embargo period of six months (twelve months for papers in social sciences or humanities).

When the gold open access route is chosen, a CC-BY licence must be used (see full definition below). RCUK is providing block grants to UK Higher Education Institutions, approved independent research organisations and Research Council Institutes, so authors should apply to institutional publication funds in order to access money for Article Publication Charges (APCs). Each institution will administer these differently, but some institutions (including Imperial College London and University of Nottingham) have already set up arrangements with major publishers in order to simplify this process. RCUK is due to publish its final guidance on this policy at the end of February 2013 and there is more information available on their website at

<http://www.rcuk.ac.uk/research/Pages/outputs.aspx>

All BES journals will be compliant with these recent policy changes via the gold open access route. Any authors opting to publish open access in one of the five BES journals will be given the option of assigning one of three different Creative Commons licences, depending on personal choice or their funder mandates. There will be more information available for authors regarding these different licence options and RCUK-funded authors will be directed to the CC-BY licence-based agreement. In addition, our partner journal, *Ecology and Evolution*, is also fully compliant with the RCUK policy, offering a CC-BY licence-based open access agreement.

Lead or corresponding authors who are also BES members receive a substantial discount on APCs when publishing in a BES journal. However, prior to acceptance there is no need to inform the journal that you intend to publish your article via an open access route, so all open access articles are treated in exactly the same way as other articles. They are all subjected to the journals' standard peer review process and will be accepted or rejected based on merit alone.

Please find below some definitions for a few commonly used terms and acronyms associated with open access. For any members submitting to the BES journals who are unsure what this policy change means for them, please feel free to contact me directly Catherine@britishecologicalsociety.org

COMMONLY USED TERMS

associated with open access

GOLD OPEN ACCESS

'AUTHOR PAYS'

- Author pays **APC** to publish; version of record can be accessed free of charge via the publisher's own platform.

GREEN OPEN ACCESS

'SELF ARCHIVING'

NO AUTHOR PAYMENT

- Author or publisher deposits a version of the article on a publicly available website. This could be submitted version OR the peer-reviewed, revised accepted version before editing, typesetting or marking up OR a copy of the version of record after an agreed **embargo period**.

ARTICLE PUBLICATION CHARGE

(APC)

- The fee an author/institution pays to publish an article via the **gold OA** route.

EMBARGO PERIOD

- The period after publication before a version of an article can be deposited in a publically accessible archive or is made freely available for users.

DIGITAL OBJECT IDENTIFIER (DOI)

- A unique alphanumeric string assigned to the electronic version of the journal article. Gets assigned to an article as soon as the final version is available online, often before the article has been assigned to an issue. Articles with DOIs are citable.

VERSION OF RECORD

- The final peer-reviewed, corrected, edited, type-set and marked-up, formally published version of a work that has been assigned a DOI.

ACCEPTED ARTICLE

- This is the final peer-reviewed version of an article but it does not necessarily incorporate formatting and typesetting carried out by the publisher.

COPYRIGHT

- A legal concept, enacted by most governments, giving the creator of an original work exclusive rights to it, usually for a limited time. Generally, it is "the right to copy", but also gives the copyright holder the right to be credited for the work, to determine who may adapt the work to other forms, who may perform the work, who may financially benefit from it, and other related rights. (Wikipedia)
- Standard copyright means: 'all rights reserved'

CREATIVE COMMONS (CC)

- An organisation that developed a set of free, simple **copyright** licences that holders of **copyright** can apply to their creative work.
- The default position is 'copyrighted, but some rights reserved'.
- Which rights are reserved is spelled out by two-letter additions.

CC LICENCES	COPYRIGHT OWNERSHIP	WHAT IT ALLOWS/DOES NOT ALLOW
Creative Commons 'Attribution' licence (CC-BY)	Author retains copyright	Unrestricted licence of copyright to all users (including publisher) to copy, use, adapt, and make commercial use of the article, provided the author is attributed and not used to endorse the use made of the work.
Creative Commons Attribution Non-Commercial (CC-BY-NC)	Author retains copyright	Licence of copyright to all users to copy, distribute, transmit, and adapt the work, provided the author is attributed and the use is non-commercial, i.e. not 'primarily intended for or directed towards commercial advantage or private monetary compensation.'
Attribution-Non-Commercial-NoDerivs (CC-BY-NC-ND)	Author retains copyright	Licence of copyright to all users to copy, distribute and transmit the work, provided that the author is attributed, the use is non-commercial and no modifications or adaptations can be made – the work must be used as is.

Journals News

Functional Ecology



www.functionalecology.org
@FunEcology

During 2012 the Editors of *Functional Ecology* felt that the journal's official scope no longer reflected the full range of papers published in the journal. Many of the key questions in ecology today require either an integrative approach or a deeper understanding of process (or both) and therefore the Editors revised the journal scope to reflect this change. In their editorial Volume 27, Issue 1, pages 1-4 the Editors describe the changes in the field of ecology, and the impact this has had on papers published in the journal.

Functional Ecology publishes high-impact papers that enable a mechanistic understanding of ecological pattern and process from the organismic to the ecosystem scale. Because of the multifaceted nature of this challenge, the papers we publish can have a wide range of approaches and manuscripts may vary from physiological, genetics, life-history, and behavioural perspectives for organismal studies to community and biogeochemical studies where the goal is to understand ecosystem and larger scale ecological phenomena. The diverse nature of our journal is one of its core strengths, and we are pleased with the variety of data, research approaches and types of studies that we publish. Ecology has increasingly moved towards the realization that organismal traits



Snowshoe hare feeding. Photograph by M.J. Sheriff. From *Functional Ecology* 27 pp11-23

and activities are vital for understanding community dynamics and ecosystem processes, particularly in response to the rapid global changes occurring in earth's environment, and *Functional Ecology* aims to publish such integrative papers.

The increased importance of integrative ecology has resulted in a much higher profile for *Functional Ecology*, and so the journal has experienced explosive growth in submissions over the past several years. The number of submissions increased from 618 in 2007 to 873 last year, an increase of over 40%.

With our new scope, certain key areas will still be emphasized: studies that integrate genomics with ecology, studies that examine how key aspects of physiology (e.g., stress) impact the ecology of animals and plants, or vice versa, and how evolution shapes interactions among function and ecological traits. Our first Special

Feature of 2013, on *The Ecology of Stress* (Volume 27, Issue 1), exemplifies our approach, looking at the ecology of stress in vertebrates, but going beyond a simple physiological approach. The study of the ecology of stress overlaps with many other areas of ecology (including physiology, behaviour, evolution and genetics), but determining the connection between stress and those areas is not always easy. This Special Feature reviewed the current knowledge of the mechanisms, impact, and implications of the ecology of stress in vertebrates at the individual, population, and community levels, as well as assessing what is still unknown-- what the key questions are in this multidisciplinary field and how to answer them. Other upcoming Special Features for 2013 will include topics on Mechanisms of Plant Competition, Plant-Microbe-Insect interactions and Responses to Global Climate Change: Insights from organismal physiology.



Snowshoe hare feeding. Photograph by M.J. Sheriff. From *Functional Ecology* 27 pp11-23

Along with the papers themselves, The Ecology of Stress special feature included a podcast interview with Lauren Desantis, lead author on one of the papers. Building on our work from previous years, we are increasing the tools -such as podcasts and videos- that we use to raise awareness of the work being done by our authors. Last year, Associate Editor Robbie Wilson joined Alan Knapp in creating podcasts for *Functional Ecology*, improving the range of topics our podcasts cover as well as looking beyond analysis of single papers. We also teamed up with other British Ecological Society journals to produce a shared iTunes channel, making it easier for people to listen and subscribe to our podcasts.



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This will be a very exciting year for the *Journal of Applied Ecology*, we have the Society's centenary to look forward to and the *Journal* is celebrating its golden jubilee. To mark the publication of the 50th volume, the current Editors were joined by past Editors Rob Freckleton, Steve Ormerod and Andrew Watkinson to compile a fascinating Virtual Issue showcasing some of the top contributions made by our authors since the first issue was published in 1964. You can view the selected articles, along with an engaging editorial piece offering insights and reflections on the changes in applied ecological research and management priorities across the decades, online through the *Journal* homepage (www.journalofappliedecology.org).



The *Journal's* golden jubilee will be celebrated through a number of activities at the 13th International Congress of Ecology in August (for more information see www.intecol2013.org), including a *Journal*-sponsored symposium, a workshop on how journals can support ecologists in emerging economies, and awards for authors and editorial board members who have made outstanding contributions to the *Journal*. We have also invited several high-profile ecologists to write review articles on a variety of topical issues, which will be published in the *Journal* during 2013. Look out for *Bulletin* articles later in the year for more details on the *Journal's* 50-year activities. You can also keep up-to-date with the latest *Journal of Applied Ecology* news on the homepage, on Facebook and on Twitter (@JAppliedEcology).

In the Editorial published in the latest issue (50: 1–3), the Editors look back at the very first *Journal of Applied Ecology* Editorial written by Bunting & Wynn-Edwards in 1964 to reflect on the *Journal's* progress through the past five decades

and outline some of the aspirations and challenges they expect the *Journal* to face in the next fifty years. Along with the usual high-calibre papers, Issue 1 also contains the second article in our newest series '*Applied Ecology in Emerging Economies*'. The review article, *Applied ecology in India: scope of science and policy to meet contemporary environmental and socio-economic challenges* by Singh & Bagchi (50: 4–14), is free to access online. We anticipate the third instalment in this review series, which will focus on China, later in the year.

CHANGES TO THE EDITORIAL BOARD

Recently, Lesley Batty, Malcolm Bennett, Nick Dulvy and Andy Royle have left the editorial board and we thank them for all their dedication and hard work on the *Journal*. The contribution of all our Associate Editors is vital for maintaining the high standard of the *Journal*. We would also like to take the opportunity to wish Lesley Batty all the very best in her new position as the chair of the Society's Education committee. We are delighted to have recruited several new Associate Editors and warmly welcome Julia Blanchard, Ailsa McKenzie, Hamish McCallum and Tomas Pét to the editorial board.

Erika Newton
 Assistant Editor



www.journalofecology.org
 @JEcology

EDITORIAL BOARD CHANGES

After a successful Centenary year, 2013 is all change. At the end of 2012 *Journal of Ecology's* long-standing Executive Editor, Mike Hutchings, retired. Former *Journal* Editor David Gibson is now the Executive Editor. We are also really pleased to welcome Amy Austin (University of Buenos Aires and IFEVA) on board as an Editor for the *Journal* and we welcome to the Editorial Board a number of new Associate Editors namely Ignasi Bartomeus, Caroline Brophy, Franciska De Vries, Glenn Matlack, Sandra Lavorel and Ryan Phillips.

ISSUES 101:1 & 101:2

The first issue of 2013 is jam-packed and it is free to access for the next 12 months. Issue 101:1 includes a Special Feature on ecosystem services guest-

edited by Sandra Lavorel (CNRS). As announced in the last issue of the *Bulletin*, Sutherland *et al.* also identify and discuss the '100 fundamental ecological questions' in this issue, which has a wider relevance beyond plant ecology. We would love to hear your thoughts on what YOU think are the fundamental questions in ecology via Twitter (@JEcology) or the *Journal* blog (jecologyblog.wordpress.com). Listen to Scott Chamberlain's (Simon Fraser University) interview with Bill Sutherland (University of Cambridge) also via the *Journal* blog, in which Bill discusses the paper in more detail.

The second issue of the year includes another Special Feature, this time on plant–soil feedbacks: this Special Feature is guest-edited by Wim van der Putten (NIOO-KNAW).

The current Editor's Choice is 'The ancient forests of La Gomera, Canary Islands, and their sensitivity to environmental change' by Nogué *et al.*



© Sandra Nogué

PODCASTS

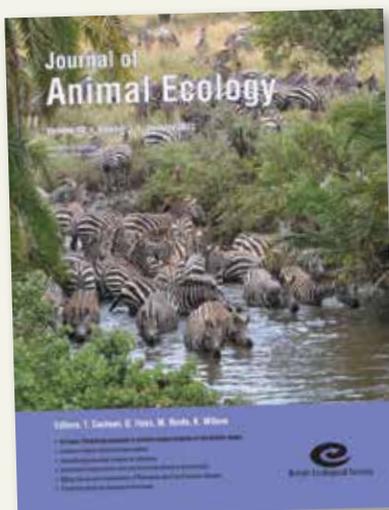
All *Journal* podcasts are available to listen to on the *Journal of Ecology* blog. At the start of the year Scott Chamberlain interviewed Peter Jørgensen of INNGE and Mark Hahnel of Figshare. Both interviews can be accessed via the blog and the BES Journals SoundCloud account. Scott also attended the BES Annual Meeting in December 2012, where he interviewed a number of people including Kyle Dexter, James Rosindell, Eleanor Slade and Tom Ezard amongst others. All of these interviews will feature as *Journal* podcasts via the blog.

Lauren Sandhu
 Assistant Editor



www.journalofanimalecology.org
[@AnimalEcology](#)

Journal of Animal Ecology has begun 2013 positively, and continues to provide animal ecologists with novel and stimulating papers. The first issue of Volume 82 was a bountiful instalment, offering a number of synthetic reviews – including former BES President Charles Godfray's presidential address on mosquito ecology and malaria- and an informative addition to the 'How to' paper series. However, there have also been changes in 2013, with 5 new Associate Editors formally beginning their terms this year, further strengthening our wide-ranging Editorial expertise. We are pleased to now have Sonia Altizer (University of Georgia, USA), Luca Borger (CNRS, FR), Kate Jones (IoZ & UCL, UK), Spence Behmer (Texas A&M, USA) and Dylan Childs (University of Sheffield, UK) as established members of the Editorial board, and all are doing an excellent job for the journal. Moreover, the journal has begun to embrace data sharing, and now finds itself fully integrated with Dryad, the digital data repository, and actively encourages and facilitates the deposition of study data where appropriate.



Next up is Volume 82, Issue 2, which also includes a host of great papers. One excellent example is *Climate Change exacerbates interspecific interactions in sympatric coastal fishes* by Marco Milazzo (University of Palermo, Italy) and colleagues, in which they demonstrate novel interspecific interactions occurring

between a warm-water and a cool-water fish under conditions of warming. The study has broad implications for predictive models of climate change, being the first to consider interspecific interactions and habitat selection within the same thermal environment. Indeed, the Editors liked it so much that it became the subject of this issue's 'In Focus article *Who's hot and who's not: ocean warming alters species dominance through competitive displacement* written by Ivan Nagelkerken (University of Adelaide, AUS).

Another highlight is the paper by Ross Dwyer and colleagues at the University of Exeter entitled *Shedding light on light: benefits of anthropogenic illumination to a nocturnally foraging shorebird*; here, the authors use satellite imagery and telemetry data to demonstrate a beneficial effect of artificial coastal light for foraging redshanks. The study illustrates the complexity of human effects on animal behaviour (and potentially survival, habitat selection, population dynamics and life-history changes) and consequently was featured in the news late last year, prompting articles in the Guardian and Nature, and author interviews on BBC Radio 4 and BBC Radio Scotland.



Redshank, from the forthcoming paper by Dwyer et al

In terms of online media, the journal has also made significant strides. The journal's Twitter account now has over 1000 followers, and we have increased our presence and activity on social media sites generally. We are always looking to connect with more ecologists to gain feedback and stimulate new ideas for the journal, so please do to follow our Twitter or Facebook accounts; it's also a great way to keep up-to-date with journal developments. In addition, we now have 4 videos uploaded to our YouTube channel (<http://www.youtube.com/user/BESanimalecology/videos?view=0>), the most recent highlighting two rather different

studies. The first by Frances Cassirer and colleagues investigated patterns of pneumonia-caused mortality over 14 years in a number of bighorn sheep populations in order to gain insights into underlying disease processes. Tom Reed presents the other study, in which he and colleagues studied the individual and population effects of phenological mismatch between great tits and their caterpillar prey in response to climate change. We feel that video is an excellent format for making science accessible to a broader audience, and any ideas or contributions are always welcome.

Overall, we are pleased with the progress of the journal and look forward to delivering even more as we move further into the society's centenary year. Again, we are always interested in receiving suggestions and ideas, such as review or forum paper topics, so please do not hesitate to get in touch.

Peter Livermore
Assistant Editor
(admin@journalofanimalecology.org)

Liz Baker
Managing Editor
(managingeditor@journalofanimalecology.org)



www.methodsinecologyandevolution.org
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Issue 3.6 was published on 12th December 2012, covering a variety of topics such as animal movement, communities, populations, surveys, and decision-making, and includes 7 freely available application articles. Issue 4.1 was published on 25th January 2013, and is free for anyone to access (remember that all *Methods* content is free for BES members to access all year round!). This issue includes articles on statistical methods, videos & cameras, animal populations, amphibians, distribution modelling, biomass estimation and genetic algorithms, along with 2 application articles.

A number of new videos have been added to the Methods YouTube channel since the last *Bulletin* was circulated, including a particularly popular video entitled *Diversitree*, hosted by Mr Blueberry and Fairly-Small-Yellow-Bird.

In other news, *Methods*, along with the other 4 BES journals, now offers the authors of good quality articles that we're unable to publish the opportunity to rapidly transfer their article plus the reviews to the open access journal *Ecology and Evolution*.

We've also made the move to publish 12 issues per year, rather than 6 (our page budget remains the same so we'll publish roughly the same number of articles as last year, but our issues will be shorter and more frequent).

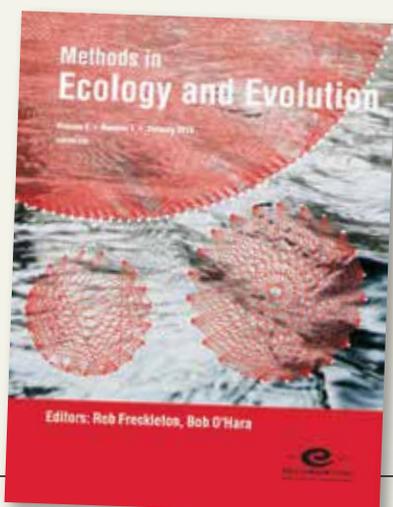
In addition, *Methods* is now able to publish articles online within ~2 working days of acceptance, before proofing, copyediting and typesetting, using our new 'Accepted Articles' workflow. This means that our content is available earlier for reading and citing.

We've also added a new requirement to our ScholarOne submissions page, where authors are asked to provide a 'Tweetable Abstract' of 120 characters, which we'll use to advertise their article on Twitter as soon as it's available online.

Last but not least, we'd like to welcome 5 new Associate Editors: Luca Börger from *INRA & CNRS*, Stéphane Dray from the *University of Lyon*, Jarrod Hadfield from the *University of Oxford*, Tamara Münkemüller from *CNRS and Joseph Fourier University*, and Jari Oksanen from the *University of Oulu*.

You can read about all of the above topics in more detail on the *Methods* blog, and keep up to date with our most recent news on Twitter, Facebook or Google+.

Samantha Ponton
Assistant Editor, *Methods in Ecology and Evolution*
(coordinator@methodsinecologyandevolution.org)



“All our environmental problems become easier to solve with fewer people and harder – and ultimately impossible to solve – with ever more people.”

David Attenborough

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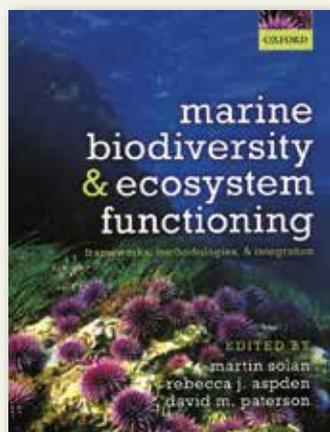
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BOOK REVIEWS

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



Marine Biodiversity and Ecosystem Functioning: Methodologies and Integration

Edited by Martin Solan, Rebecca J. Aspden & David M. Paterson (2012) Oxford University Press, Oxford.

£70.00 (hbk)
ISBN 978-0-19-964225-0

£34.95 (pbk)
ISBN 978-0-19-964226-7

This multi-author text introduces recent developments in what is viewed as a more holistic ecological approach (the biodiversity-ecosystem function – BEF – approach) and aims to extend concepts more familiar in terrestrial ecosystems to the more neglected marine ones. Beginning with a brief review of how little we really know about the oceans (and reminding us of some of the recent and dramatic discoveries from, for example, the Census of Marine Life) the first chapter clarifies the concept of biodiversity and briefly traces the origins and history of life in the seas. The main thrust of the chapter, however, is to review the many threats to marine biodiversity and to emphasise the extreme fragility of many marine systems. Subsequent chapters then essentially reinforce the importance of the BEF approach to marine science as the most effective way to understand

and consequently tackle these many threats. There is a particularly interesting review of biodiversity in the fossil record which shows how long-ranging and destabilising have been the effects of large-scale extinctions in the past – sobering in the light of one of the defining features of the present anthropocene period of geological history.

Most chapters are well written, cogently argued and informative. However, some chapters ramble so widely that, even after several readings, it is difficult to see the significant point that the author is actually trying to make. Although the book is comprehensively referenced with both published sources and some websites, it is sparse in (useful) illustrations and summaries. Equally, some authors seem to spend an inordinate amount of time and space agonising over the same definitions which becomes a little repetitive if several chapters are read together. It might be a suggestion for a future edition that more time be spent on co-ordinating the points raised in different chapters to make the overall argument more forceful. Otherwise this is a very useful summary of modern thinking in ecology and should appeal to marine biologists, conservation biologists and students of marine resource management.

Ian Lancaster

Hymenoptera and Conservation

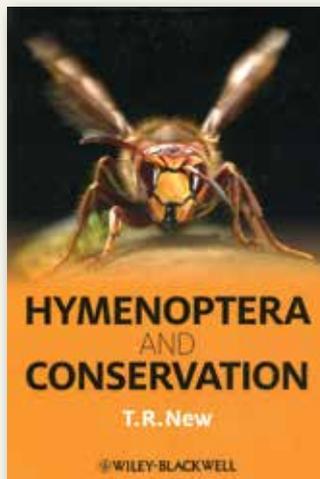
T.R. New (2012) Wiley-Blackwell, Chichester.

£60.00 (hbk)
ISBN 978-0-470-67180-1

Professor New is well known for his promotion of the conservation of insects, starting with Lepidoptera and then moving on to Coleoptera

and now Hymenoptera. As with his previous books, he has gathered a great deal of published material, backed up by examples of practical conservation management. This information has been compiled into a book which ranges from some basic information on the biology of bees, wasps and ants, through their use in biological control, the problems and benefits of the translocation or accidental introduction of alien Hymenoptera, the crucial problem of the current loss of so many pollinators, and then finishing with examples of practical conservation management.

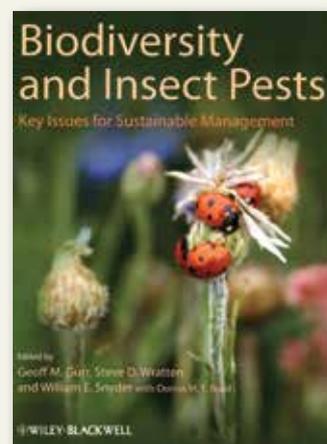
Hymenoptera are generally less studied and loved than Lepidoptera and so perhaps the examples ranged here are fewer than for these more popular insects. However, the crucial role that bees and wasps play in pollination and biological control means that their conservation and effective management are true priorities and fully deserve this attention. This also carries a difficulty in that there is so much information available about (for example) biological control using parasitic wasps, that this subject alone deserves a much more extensive treatment. Of course there have been several very detailed and full books published on this topic and this



applies similarly to pollination biology. This inevitably leaves the reader of this book wanting more and feeling that some important subjects are dealt with in a rather superficial and brief way.

Despite this, it is very helpful to have a unified account of the conservation of Hymenoptera, with an excellent reference list and the practical detail associated with the case studies. I particularly welcome having information on the various case studies all available in one place and, even if each account is rather brief, the references will allow further study as needed. Overall, this is an interesting and worthwhile book, which should stimulate more interest in this important order of insects.

Mark Young



Biodiversity and Insect Pests: Key Issues for Sustainable Management

Edited by Geoff M. Gurr, Stephen D. Wratten & William E. Snyder (2012) Wiley-Blackwell, Chichester.

£75.00 (hbk)
ISBN 978-0-470-65686-0

This book is aimed at senior undergraduates and newcomers to the subject and is a rather novel attempt to explain how various aspects of biodiversity influence the prevalence

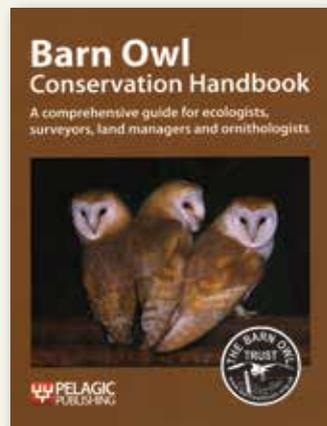
and severity of insect pests. Can management aimed at increasing biodiversity also reduce the damaging effects of pests? The overall question is whether there is any prospect that we can move to agricultural systems which are based on ecological principles and whether such systems would suffer less from the deprivations of insect pests.

A wide range of topics are included, within sections focussed on Fundamentals, Methods, Applications and a final Synthesis. Individual chapters refer to rather neglected topics such as soils, landscape and local scales, cover crops, ecological engineering and chemical ecology. These are just examples of the very varied and comprehensive coverage and more obvious and regular issues, such as beetle banks and other ways of encouraging native pest control predators are also included.

The many examples are assembled to build up an understanding of how wild species interact with pests and so how conservation of natural elements within agricultural systems will help to reduce pest problems. Obviously ecological understanding is necessary to the management needed to sustain the semi-natural nature of agricultural systems. To be accepted, it must be clear that levels of production are sustained or increased, in concert with a reduced pest problem. In essence the aim is to maximise ecological services within agriculture, and this is pushing at an open door, in that there is a growing understanding that not only are there natural predators, but that many wild plants contain chemicals which are active against insects. More detailed and unexpected findings are coming forward as we explore tri-trophic interactions.

The synthesis reflects on the need to feed 9 billion people, noting that the availability of agricultural land is actually declining and that conventional agriculture is clearly failing to meet the requirements of such a high population. Somehow we have to do things better and differently and the thesis of this interesting book is that it is only by moving to agriculture which is based on ecological principles that can succeed.

Mark Young



Barn Owl Conservation Handbook: A Comprehensive Guide for Ecologists, Surveyors, Land Managers and Ornithologists

Barn Owl Trust (2012) Pelagic Publishing, Exeter.

£39.99 (pbk)
ISBN 978-1-907807-14-5

Apparently, the Barn Owl has at some time been voted the most popular British bird, after the Robin. The contrast could not be greater however between the ubiquitous garden bird, so beloved of Christmas card producers, and the rare, elusive nocturnal hunter. So secretive is the Barn Owl that it is by no means unusual for a nesting pair to raise its brood at a site without even the resident landowner having the slightest idea of their presence. Yet, given

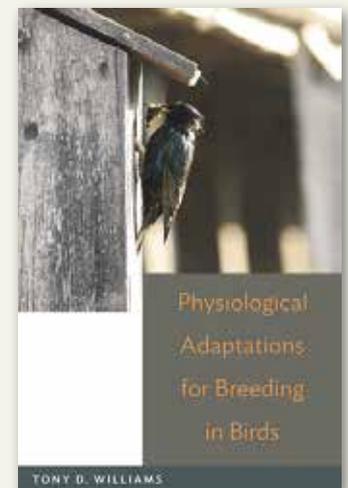
its heavily protected status (under Schedule 1 of the Wildlife and Countryside Act 1981), and its low population level (estimated at 4,000 pairs in the UK), as well as its popularity, it is perhaps not before time for a publication on conservation of the species to be produced.

This handbook is certainly ambitious in its scope – ‘a comprehensive guide for ecologists, surveyors, land managers and ornithologists’. But does it deliver? Certainly, the authors have a track record of working with the Barn Owl that is second to none, the Barn Owl Trust being well recognised for its conservation work in the south west of England and much further afield. The outstanding feature of their book is that the authors apply their undoubtedly hard won knowledge, and also draw on a wealth of published material, to produce clear, carefully thought out principles and practices for successful Barn Owl conservation. They avoid, for instance, the temptation to attribute the Barn Owl’s decline in Britain to one or two principal causes (such as ‘climate change’) and suggest instead that a variety of factors is involved, some but not all of which can be addressed. However, as the authors point out: ‘the creation and management of rough grassland is potentially the most important factor in Barn Owl conservation and can also be of tremendous benefit to a vast array of wildlife’. Not surprisingly therefore this particular approach to conservation is covered in considerable detail.

The book is primarily written as a reference work, enabling those who are interested in particular topics to study them in depth without necessarily reading the whole work. In this respect, the ‘quick guide’ that appears at the beginning of each chapter will be especially useful, as will

the two appendices (containing a list of contacts, and details of Barn Owls in Biodiversity and Species Action Plans, respectively), and the full list of references. There is, of course, the perennial problem for a book of this kind that some of the information it contains will rapidly become out-of-date, but the authors are alert to this and provide useful web resources for checking the latest position. For any professional who is not particularly well acquainted with the Barn Owl, the photographs and other illustrations are extremely clear and helpful. All-in-all this well-produced book manages to pull off the trick of providing a comprehensive and highly practical guide to Barn Owl conservation for specialists in the species and those involved in wider land use issues alike.

Paul Hackney



Physiological Adaptations for Breeding Birds

Tony D. Williams (2012) Princeton University Press, Princeton.

£48.95 (hbk)
ISBN 978-0-691-13982-1

This book provides an in-depth consideration of the physiological mechanisms associated with avian reproduction, with a special

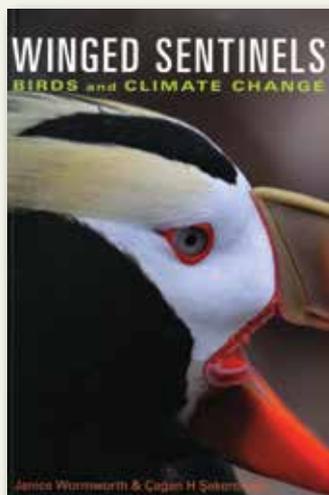
emphasis on female physiology and inter-individual variation. The book explores the complete breeding cycle taking the reader on a journey from gonad development and egg production, to laying, incubation and chick rearing. It differs from most physiological texts by considering physiology within an evolutionary biology context. This means that as well as, for example, details of the role of hormones in egg production and egg immunoglobulins and antimicrobial properties, issues often considered outside the remit of a strict physiologist, such as evolutionary selection of egg size and climate-induced changes in breeding phenology, are discussed. There is also a whole, fascinating, chapter devoted to trade-offs and carry-over effects, which are often largely ignored. The result of this contextualization is a book that answers, or at least explores, the 'why' of avian reproduction physiology as well as the 'how'.

The text itself is extremely clear and detailed, and the author does a very good job of explaining complex material in a very readable manner. The chapters are split into informative sub-headings, which make locating information easy, there are useful diagrams and graphs throughout, and the text is very well referenced. The style is highly analytical, discussing different explanations for the same biological phenomena, and each chapter ends with a bullet-pointed list of key unresolved questions and future research directions.

The strength of the book is not so much in the coverage of the topics themselves (although this is excellent) but in the way that these different topics are shown to interlink and interrelate. For a non-ecologist, this book would provide a very useful bridge into ecological implications of, and evolutionary reasons for, physiological processes; while for a non-physiologist, this provides an excellent route

into a complex subject. Overall, this book provides a masterly synthesis and analysis of complex material set within a refreshingly new perspective.

Anne Goodenough



Winged Sentinels: Birds and Climate Change

Janice Wormworth and
Çağan H. Şekercioğlu (2011)
Cambridge University Press,
Cambridge.

£24.99 (pbk)
ISBN 978-0-521-12682-3

This is a broad-focused book, examining the effect that our changing climate is having on its avian inhabitants. Separate chapters consider changes in breeding and migration phenology, range shifts and changes in species community composition and structure, and effects on population dynamics and extinction. There are special chapters on birds as proxies of climate-induced changes in our oceans and on the effects of change in the tropics and in fragmented habitats. The book concludes with a very good consideration of species conservation under different climate change scenarios; often a rather under-considered topic.

The book draws together numerous examples of where bird biology, ecology or biogeography is being altered by climatic change. These examples

come from around the globe and some of the species in question are shown in a series of glossy pictures. Some of the chapters, especially those on changes in phenology and range, are definitely focused on describing these examples and are rather narrative in style. Others though, such as those with a landscape ecology or conservation focus, are much more evaluative; synthesizing not just examples, but also key biological concepts, themes, and uncertainties.

The structure of the chapters themselves works well, but I didn't find it particularly easy to locate information within each chapter without skip-reading most of the material. I also felt that the book would have benefited greatly from more diagrams and graphs. The saying that a picture paints a thousand words is often overused, but when discussing temporal and spatial changes, as this book does, it is very apt. I only found three diagrams in the 250+ pages, and this seems a big shame. Tables drawing together key facts and figures – such as phenology shifts of different species in different areas – would also have been valuable in allowing the reader to gain as much, if not more, from the book in many fewer words.

Overall, this is a useful consideration of changes in bird biology with climatic change and well-illustrated with good examples. It would suit an undergraduate audience or interested and well-informed amateur naturalists.

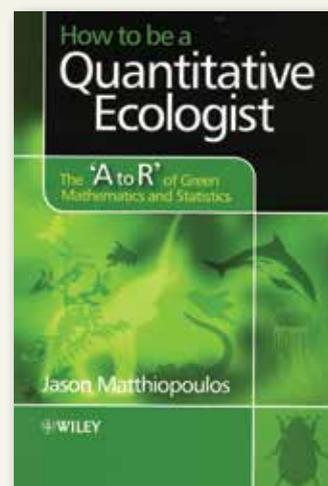
Anne Goodenough

How to be a Quantitative Ecologist. The 'A to R' of Green Mathematics and Statistics

Jason Matthiopoulos (2011)
Wiley, Chichester.

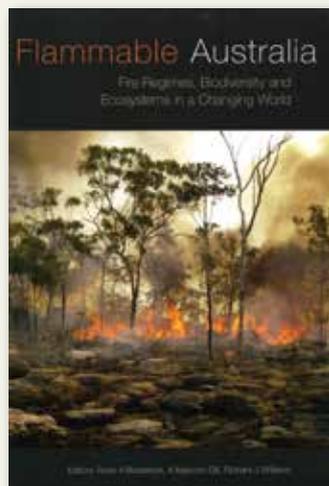
£92.50 (hbk)
ISBN 978-0-470-69978-2

£39.95 (pbk)
ISBN 978-0-470-69979-9



There has been an outpouring of books on R and ecology over the last year. What distinguishes this one from the masses is that it does not shy away from including equations in the text. While this might put some ecologists off who don't particularly want to know the mathematics, perhaps this is a mentality that needs to be changed? Chapter 0 deals with the fundamentals of R, getting you to input the mathematical sum of "1+1" to yield an answer of 2 and plot a graph of your age against years. Aside from being a rather depressing picture of one's own mortality, this is an excellent way to ease you in and help gain confidence. The book is not meant to be an exhaustive guide to R or ecology, but does a great job of providing the minimum level of quantitative skills currently required of practising ecologists. The book is also supported by a wealth of supplementary material on the Wiley website. Interesting ecological case studies, from the position of limpet populations relative to tide level, to the size of male garter snakes, do a great job of illuminating the text and demonstrating how different types of data can be analysed. For those looking through R books for something a bit more technical, this book will be an essential accomplice to mastering R.

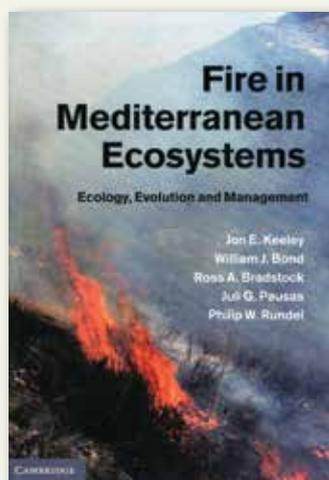
Sarah Taylor



Flammable Australia: Flammable Regimes, Biodiversity and Ecosystems in a Changing World

Edited by Ross A. Bradstock, A. Malcolm Gill & Richard J. Williams (2012) CSIRO, Collingwood.

AU\$79.95 (pbk)
ISBN 978-0-64-310482-2



Fire in Mediterranean Ecosystems: Ecology, Evolution and Management

Jon E. Keeley, William J. Bond, Ross A. Bradstock, Juli G. Pausas & Philip W. Rundel (2012) Cambridge University Press, Cambridge.

£70.00 (hbk)
ISBN 978-0-521-82491-0

There are many books on

the market about fire, so do these two add anything new? *Flammable Australia* is the ‘third synthesis of this kind’, following Gill *et al.* (1981) and Bradstock *et al.* (2002) in summarizing the role of fire in this large continent. The first two thirds of the book are similar to its predecessors in covering the origins and history of fire in shaping the continent, how fires burn to create fire regimes, and how they affect the different ecosystems, including the dominant animals. But everything is updated with long lists of references, many of them recent. The last three chapters are new and makes excellent reading, covering how fire affects carbon balances, the growing appreciation and relevance of indigenous knowledge and practices in fire management, and problems of future management in the face of long- droughts and increasing number of people in the wildland-urban interface. My only gripe is that the text is very dense on the page and is quite wearing to read after a while, but maybe that’s just my age! This book is written by more than 40 knowledgeable Australian authors and is definitive and, as importantly, accessible by anyone with a modicum of scientific knowledge. A must for the bookshelf.

Fire in Mediterranean Ecosystems covers just the bushlands of south Australia but includes the other Mediterranean-type climate (MTC) areas of the world: the Mediterranean Basin of Europe, matorral and related vegetation of Chile, chaparral of California and fynbos of South Africa. The introductory material is pretty standard, covering fire parameters such as types of fire, definitions of intensity, severity, frequency and seasonality. A discussion of fire adaptations by plants is geared towards MTC species (so there is little mention of resisting fire just with thick bark which occurs

in forests of taller trees) with some very useful comparing and contrasting between MTC areas. Following this there are individual chapters on each MTC area giving far more detail on how fire has shaped each ecosystem. The last third of the book highlights the origins of the Mediterranean climate and how this has affected the evolution of fire adaptations in plants, manipulated plant diversity and how we now management them. The most interesting chapter is on the interaction between fire and alien plants and the detrimental effect this has had on most species diverse MTC areas. The irony is that the Mediterranean Basin is least affected by alien species but has been a rich source of invasive species in the other areas. The new insights provided by this book are in comparing the different Mediterranean areas and in highlighting problems of management. Yet another fire book but with a unique niche, so certainly worth the space on the bookshelf.

REFERENCES

Bradstock, R.A., Williams, J.E. & Gill, A.M. (2002) *Flammable Australia*. Cambridge University Press, Cambridge.
Gill, A.M., Groves, R.H. & Noble, I.R. (1981) *Fire and the Australian Biota*. Australian Academy of Science, Canberra.

Peter Thomas

The Evolutionary Strategies that Shape Ecosystems

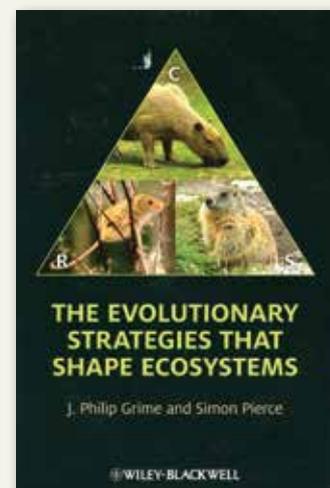
J. Philip Grime & Simon Pierce (2012) Wiley-Blackwell, Chichester.

£80.00 (hbk)
ISBN 978-0-7083-2257-4

£39.95 (pbk)
ISBN 978-0-4706-6782-6

I first read the classic Grime plant strategy and humpback model papers in the ‘70s and have long been influenced by

Philip Grime’s thinking about the influence of competition, stress and disturbance in influencing the structure of plant communities. This is perhaps because grasslands have been prominent in my career and the balance of competitor (C), stress tolerator (S) and ruderal (R) plant strategies is most labile in grasslands. Certainly I have found this a useful way to think about conservation management.



Defining stress as the limitation of biomass production, and disturbance as the destruction of standing biomass, Grime and Pierce survey the entire biota (plants, animals, bacteria, archaea and viruses) searching for evidence of C, S, and R strategists. For some groups, such as bony fishes and corals, others have already done systematic work and drawn such parallels with plant strategies. For other groups, the authors are forced to select illustrative examples and the conclusions drawn are more contentious. To what degree the conclusion that humans are intermediate S – C strategists is supportable seems to me particularly tendentious but interesting to debate.

Grime and Pierce posit that a two-level filter operates upon community composition. A first filter operates to select species adapted to the productivity and disturbance

regime and a second 'proximal' feature operates upon traits adapted to other aspects of the environment. For example, orchids in European grasslands are seen as strongly convergent in primary strategy but differentiated by pollinator. There are interesting discussions about how these interactions influence microbial and animal communities and a chapter relating the balance of strategy at community level to ecosystem processes.

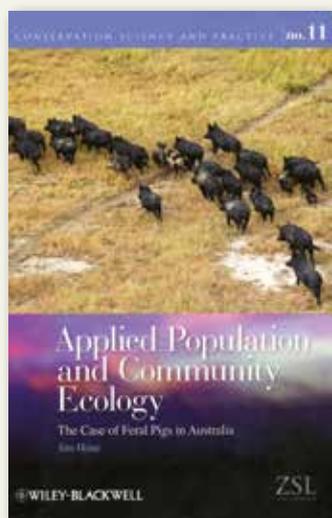
The overarching objective of the book is to develop coherent theory linking evolution (seen as constrained by trade-offs imposed upon organisms by limits of adaptive capacity) and ecology. This book is a thought provoking contribution to the topic. I much admire the bravery to look across all biota, given an emphasis on a taxonomic group (rather than an ecological problem) in my view hinders progress in some areas of ecology. I am sure this book will provoke discussion and debate, I hope it will not be ignored.

John Hopkins

Applied Population and Community Ecology

Jim Hone (2012) Wiley-Blackwell, Chichester.

£75.00 (hbk)
ISBN 978-0-470-65864-2



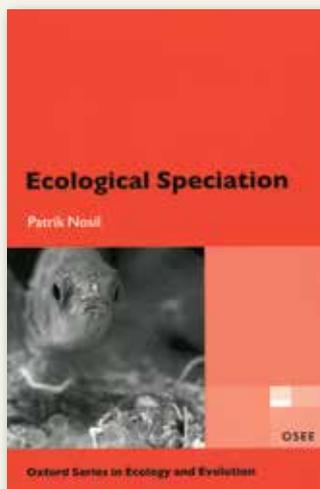
Feral pigs have had an impact on ecosystems in many parts of the world, perhaps most notoriously in Hawai'i. This book brings together more than 30 year's work by Jim Hone and collaborators on the feral pigs of Namadgi and Kosciuszko National Parks in southeast Australia. It is a model example of how to research non-natives and their impacts, which should interest and provide lessons for others in the field.

The book contains a series of models used to test hypotheses about feral pig demography, impact of rooting, effectiveness of control measures and impact upon plant and bird communities. Good model fits give a sound base for thinking about the need for feral pig control and the effectiveness of alternative measures. An interesting practical conclusion relates to poisoned baits as a control measure. It is not the total amount of bait consumed which is important but the relative dietary proportion of bait. So baits can be expected to be most effective in dry or cold seasons when other food is low.

A decline in plant species richness is associated with increasing ground rooting. It is cautionary there is no evidence of feral pigs accounting for a gradual decline of bird species richness, as there are many untested narratives elsewhere about the adverse impact of non-native species. Because feral pigs and wild boar occur in many other parts of the world there is a comparative literature and this is used to identify geographical similarities and differences.

This book is most likely to be of most interest to those working on impacts and management of non-natives, but the first two chapters provide succinct general background and in other chapters there is background material about sampling, analysis and theory. So the book may be useful at advanced undergraduate level.

John Hopkins



Ecological Speciation

Patrick Nosil (2012) Oxford University Press, Oxford.

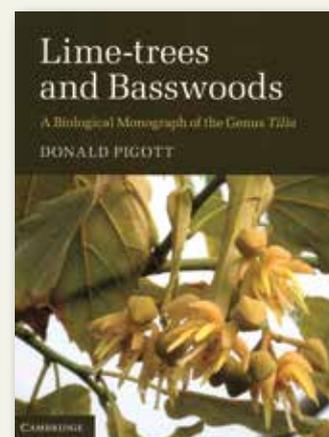
£65.00 (hbk)
ISBN 978-0-19-958710-0

£29.95 (pbk)
ISBN 978-0-19-958711-7

The process of speciation is the initial generator of biodiversity. Genetic isolation underlies the evolution of species, and this can result from spatial separation of populations, behavioural diversification, and also from ecological differentiation of groups of individuals within a population. Speciation of the latter type involves a progressive development of genetic isolation, what the author of this book terms a 'species continuum'. Genetic differentiation, resulting from increasing reproductive isolation, thus develops gradually through time, and the precise definition of the species depends on the genetic criteria selected. Where a species of broad ecological tolerance occupies a number of different habitats, selection can lead to divergence in the phenotypes and, through progressive reproductive isolation, the genotypes of sub-populations. This book is devoted to the development of barriers to gene flow resulting from ecologically divergent selection. The author examines how ecological speciation may be recognised and assessed,

and how reproductive isolation develops. For example, a herbivorous insect that feeds upon several different host plants may be subjected to different selective pressures when feeding on the various hosts. Selection may favour certain forms of crypsis, physiology, or reproductive timing depending on the individual features of the host. Reproductive isolation within the original species may then develop especially if, for example, the host plant species differ in their ecology and spatial distribution. Nosil traces the genetic processes involved in the development of reproductive isolation. He then looks at the influence of geography on the nature of ecological speciation. Finally, he examines the factors that affect how far speciation may proceed along a speciation continuum. One strength of this account is the richness of examples presented to illustrate the principles described. In this way, the account of ecological speciation provides a link between theoretical concepts and the practical realities observed in the field.

Peter Moore



Lime-trees and Basswoods: A Biological Monograph of the Genus Tilia

Donald Pigott (2012) Cambridge University Press, Cambridge.

£80.00 (hbk)
ISBN 978-0-521-84054-5

This is the distillation of a lifetime's work by Donald Pigott on lime trees. Younger members may need to be reminded of Professor Pigott's long and influential role in British plant ecology. After a lectureship at Sheffield in A.R. Clapham's department, he was a founding member of Biological Sciences at Lancaster University where he was Professor of Biology and Head of Department. While there he was instrumental in launching the National Vegetation Classification project, resulting in the indispensable five volume set of books covering all our vegetation. Following this he returned to his *alma mater* as Director of the Cambridge University Botanic Garden where he established a superb reference collection of limes. Not least of his achievements is that he is the world authority on the genus *Tilia* (amongst other things; he's also written 6 Biological Flora of the British Isles [BFBI] accounts in the *Journal of Ecology*, only one of which is on a lime tree!).

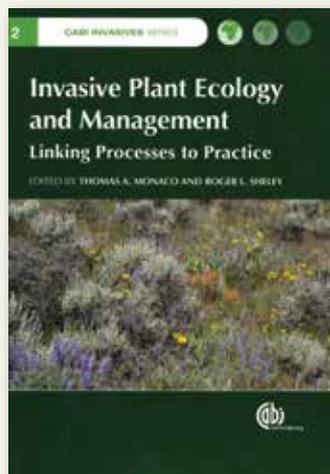
In many ways this book reads like an expanded, approachable version of a BFBI account in that it covers all taxonomic and ecological aspects of not just one species but all of them worldwide. But this is not just a summary of published literature, it contains a large amount of new information and, in particular, a definitive reclassification of this difficult genus, all backed up by Donald's superb line drawings.

The book starts with a general description of the genus from the whole tree to cellular morphology followed a history of the taxonomy of *Tilia* and a lengthy but insightful discussion of the basis for a revised taxonomy – which bits of the plants can be most reliably used for dividing species (DNA analysis is in its infancy for *Tilia*). Three quarters of the book is then taken up with species descriptions, divided by geographical area. Like the

BFBI accounts, while these contain detailed morphological descriptions they also contain a large amount of ecological information that would be difficult to find summarised elsewhere. Moreover, there are also chapters on geological history, physiological ecology, reproduction, cultivation and association of *Tilia* with human activity. I didn't know that the reason for *Tilia mandshurica* being revered in China is because the leaves look similar to *Ficus religiosa* under which Buddhism was founded in India.

This is an excellent book that will remain the benchmark on lime taxonomy and ecology for many decades to come. It is packed with ecological information, well-written and deserves a place in every library.

Peter Thomas



Invasive Plant Ecology and Management. Linking Processes to Practice

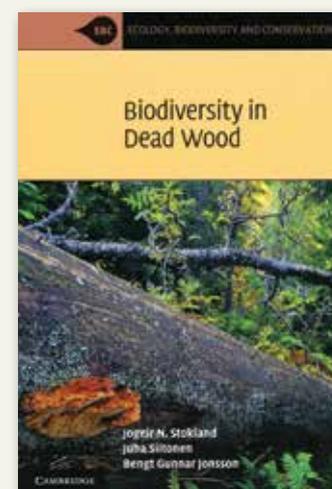
Edited by Thomas A. Monaco & Roger L. Sheley (2012) CABI, Wallingford.

£70.00 (hbk)
ISBN 978-1-84593-811-6

This book is the second instalment in the CABI invasive species series, and targets the knowledge gap between the ecology of plants invading ecosystems and the land management practices used to deal with them. The edited

collection was inspired by the USDA funded Areawide Pest Management Program for Annual Grasses in the Great Basin Ecosystem, and includes contributions from a wide range of American researchers. Although the case studies are centred on rangeland and cropland in the US, the core ideas and scientific underpinning will have far reaching applications. The book is divided into two parts that deal with processes (Part I) and management (Part II), and the chapters have been nicely constructed so that the content builds and flows through the book. In the first chapter, Brown and Bestelmeyer do a great job of explaining the complexity of understanding species attributes that affect invasiveness of a plant and plant community characteristics that determine invasibility across complex landscapes. In the second chapter, Fuhlendorf *et al.* further embellish the theme of complexity by considering temporal dynamic changes that can result from woody plant invasions to rangeland, which requires consideration of multiple scales similar to the way we view successional sequences in glaciated environments. The need to consider the starting point of the affected plant communities is highlighted by Morris in Chapter 3, as land that has been modified for human utilisation will respond very differently to 'wildland'. The last two chapters of Part I consider how resources (i.e., soil nutrients, etc.) affect the balance of plant communities and vice versa. The five chapters that make up Part I provide the necessary background to understand the driving processes that affect how ecosystems respond to management and restoration that is the focus of Part II. Useful tables, and black-and-white photographs and illustrations accompany the text throughout. This book will be a useful source of information to researchers, upper-level students and policy makers.

Sarah Taylor



Biodiversity in Dead Wood

Jogeir N. Stokland, Juha Siitonen & Bengt Gunnar Jonsson (2012) Cambridge University Press, Cambridge.

£75.00 (hbk)
ISBN 978-0-521-88873-8

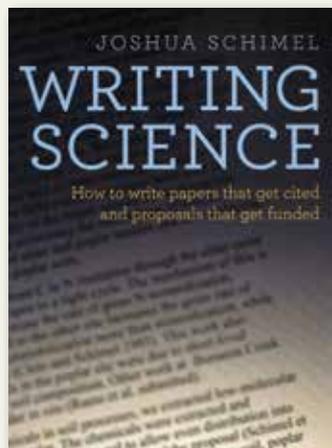
£38.00 (pbk)
ISBN 978-0-521-71703-8

The title is slightly misleading in that while there are chapters on the evolution and diversity of saproxylic organisms, most of the book is about the structure of trees and wood, its defences, fungal and invertebrate succession and how these are affected by tree size and the surrounding environment. There are also chapters on dead wood dynamics in natural forests and managing wooded, agricultural and urban habitats. Topics range across the diversity and phylogeny of trees, to the different types of bacterial rots, to birds using nesting holes, to the differences between buried and standing dead wood, to survey methods for threatened saproxylic species. So this is a much more useful and wide-ranging book than the title would suggest. Because it is so wide ranging, some sections are inevitably a little thin but this is balanced by the inclusion of more than 1300 references.

The value of dead wood has been recognized for a number of decades now (Keith Kirby was writing on this back in the 1990s)

and although there have been a huge number of publications since, there has not been a good readable overview. There is now.

Peter Thomas



**WRITING SCIENCE:
HOW TO WRITE PAPERS
THAT GET CITED AND
PROPOSALS THAT GET
FUNDED**

Joshua Schimel (2012) Oxford University Press, Oxford.

£60.00 (hbk)
ISBN 978-0-19-976023-7

£22.50 (pbk)
ISBN 978-0-19-976024-4

The author of this useful book is a scientist in a very similar set of disciplines to my own, so I can relate to many of the problems he outlines and the examples he uses. The overall message is to tell a good story. The problem for me is that 'good' stories in both published papers and grant proposals are not always true. I think that more could be made of the difficulties that journals (and grant-giving bodies) have in finding good referees/reviewers, especially when the subject of a submission covers more than one speciality. For example, when expertise in both plant and microbial science is needed, papers are often sent to experts in only one of these disciplines. Thus flawed papers get published in even highly ranked journals such as *Nature* and *Science*. These papers are then frequently cited and thus errors become part of the perceived wisdom

for the subject. The recent, understandable surge towards rapid publication in open access journals can exacerbate this problem (as well as strain the budget!).

This book has 21 chapters, each starting with an apt quotation from a variety of authors, including Raymond Chandler and George Bernard Shaw. There is much in it about paper writing that would make useful reading for honours students in particular, as well as those having recently completed their Masters or doctoral degrees. I regularly review manuscripts where the introduction is essentially the same as the literature review

of a thesis, rather than citation of papers that are necessary background for telling the 'story'. The latter topic is well covered, as is basic English grammar and choice of words. Throughout, the emphasis is on how to write clearly and concisely rather than to confuse, and how to present data so that the message is most easily understood by the reader, for example by deciding whether they should be given in tabular or diagrammatic form.

Thinking of the readership of the *BES Bulletin*, I am afraid the messages in this book need to be appreciated by UK scientists as much or more than those of some other countries of Europe

and elsewhere. Here we have deadlines for completion of PhDs and publication of material from research grants. This often leads (and I am not innocent here) to supervisors and PIs writing the papers, rather than the student or even a post doc. Scientists in some countries where academic advancement can be made with very few publications in refereed journals would also benefit from reading this book. If it were available in electronic form I should be recommending it to many more people, but as it stands it should be at least in the library of any institution where biological research is carried out.

Janet Sprent



11th INTECOL Congress Ecology: into the next 100 years

ExCel Centre, London UK
18-23 August 2013

Taking the theme, advancing ecology and making it count, this conference will be one of the largest gatherings of ecological science and scientists and will feature:

Internationally renowned plenary speakers featuring ecological research and its societal and political consequences;

Symposia presented by researchers from across the world and featuring international collaborations covering the breadth of ecological science;

Workshops that showcase the most significant methods, applications, communications, outreach and policy;

Training workshops for early career researchers;

Accompanying social programme.

For full details of the programme and how to register for this exciting meeting please go to <http://www.intecol2013.org>



DIARY

THE SOCIETY'S MEETINGS

2013

APR 8-9

Global Change and Biosphere Interactions. York Environmental Sustainability Institute, UK. Details from: http://www.britishecologicalsociety.org/about_bes/Centenary_conferences.php

May 17

Evolutionary Ecology of Infectious Disease. Charles Darwin House, London. http://www.britishecologicalsociety.org/about_bes/evolutionary_ecology_of_infectious_disease.php

AUG 18-23

INTECOL 11 – Ecology: Into the next 100 years. ExCeL, London, UK. Incorporating the BES Annual Meeting and centenary

THE SOCIETY'S COMMITTEE MEETINGS

2013

APR 15 Grants Committee

APR 23 Public and Policy Committee

MAY 9 Publications Committee

MAY 15 Finance Board

MAY 22 INTECOL Local organising Committee

MAY 29 ETCC (Birmingham)

JUN 25 Council

JUL 3 INTECOL Local Organising Committee

AUG 20 Finance and Management Board (at Excel during INTECOL)

OCT 10 Public and Policy Committee

OCT 22 ETCC

NOV 18 Finance Board

DEC 12 Council

OTHER MEETINGS

2013

APR 8-11

FINS 2013. Freshwater Invasives – Networking for Strategy. Galway, Ireland. Details from <http://finsconference.ie>

APR 9

Deserts: A neglected Ecosystem. ZSL, Regent's Park, London. Website: <http://www.zsl.org/science/events/deserts-a-neglected-ecosystem,630,EV.html>

APR 15-17

Geomathematics 2013. St Martin, Palatinate, Germany. Details from <http://www.uni-siegen.de/fb6/geomathe/geomathematics2013/index.html>

APR 16-17

British Society of Animal Science Annual Meeting. University of Nottingham, UK. Details from http://www.bsas.org.uk/Meetings_&_Workshops

APR 16-17

UK PlantSci 2013. Dundee, Scotland. Details from: <http://www.plantsci.org.uk/events/uk-plantsci-2013>

MAY 1-4

EMBO/EMBL Symposium: New Model Systems for linking Evolution and Ecology. Heidelberg, Germany. Details from <http://www.embo-embl-symposia.org/symposia/2013/EES13-01/index.html>

MAY 9

The Annual UK-BRC meeting. Rothamsted Research, UK. Details from: <http://www.plantsci.org.uk/events/uk-brc>

MAY 13-14

Plant Genomics Congress. London, UK. Further details from: <http://www.globalengage.co.uk/plantgenomics.html>

MAY 13-16

HydroEco2013 — International Multidisciplinary Conference on Hydrology and Ecology: Emerging Patterns, Breakthroughs and Challenges. Rennes, France. Details from: <http://osur.univ-rennes1.fr/HydroEco2013>

MAY 16-17

New Technologies for Monitoring Biodiversity. ZSL, Regent's Park, London. <http://www.zsl.org/science/events/new-technologies-for-monitoring-biodiversity,631,EV.html>

MAY 19-23

SFS Annual Meeting 2013 – Energy production and aquatic biodiversity:

Understanding the threats, planning for ecosystem management. Jacksonville Florida, USA. Details from <http://www.freshwater-science.org/Annual-Meeting/2013-Jacksonville.aspx>

MAY 21-24

BioHydrology 2013 — Bio meets Hydrology: 'Water for life'. Landau, Germany. Website: <http://www.biohydrology2013.de>

MAY 22-24

7th International Conference on River Basin Management including all aspects of Hydrology, Ecology, (River Basin Management). Southampton, UK. Details from: <http://www.wessex.ac.uk/13-conferences/river-basin-management-2013.html>

MAY 27-29

Climate Change and Regional Response. Dresden, Germany. Details from: <http://www.regklam.de/ccrr-2013>

JUN 1-5

3rd World Summit on Evolution. Galapagos, Ecuador. Website: <http://www.usfq.edu.ec/eventos/evosummit/Paginas/default.aspx>

JUN 3-6

International Symposium on Plant Photobiology (ISPP) 2013. Edinburgh, UK. Details from: <http://www.plantsci.org.uk/events/international-symposium-plant-photobiology-ispp-2013>

JUN 18-20

9th International Conference on Ecosystems and Sustainable Development (ECOSUD 2013). Bucharest, Romania. Details from: <http://www.wessex.ac.uk/13-conferences/ecosud-2013/page-3.html>

JUN 22-26

The Fourth International Society for Seed Science Meeting on Seeds and the Environment. Shenyang, Liaoning, China. Website: <http://seed2013.csp.escience.cn/dct/page/1>

JUN 24-28

ICAR 2013. 24th International Conference on Arabidopsis Research. Sydney, Australia. Details from: <http://www.sallyjayconferences.com.au/icar2013>

JUL 1-2

International Conference on Biodiversity.
Colombo, Sri Lanka.
Details from:
<http://futureevents.org/biodiversity>

JUL 3-6

SEB Annual Meeting 2013. Valencia, Spain.
Details from: <http://www.sebiology.org/meetings/Valencia/Valencia.html>

JUL 3-6

International Symposium of Plant
Photobiology (ISPP) 2013 conference.
University of Edinburgh, UK. Details from:
http://www.epay.ed.ac.uk/browse/extra_info.asp?compid=1&modid=2&prodid=711&d

JUL 16-17

New models and Observations of the
Southern Ocean, its role in the Climate
Change and the Carbon Cycle. Newport
Pagnell, UK. Website:
<http://royalsociety.org/events/2013/southern-ocean-models>

JUL 17-19

11th International Conference on
Reactive Oxygen and Nitrogen Species
in Plants. Warsaw, Poland. Details from:
<http://www.pogwarsaw2013.org>

JUL 20 – 24

Plant Biology 2013. Providence,
Rhode Island, US. Details:
<http://www.plantsci.org.uk/events/plant-biology-2013>

JUL 28-AUG 1

The 50th Annual Conference of the Animal
Behavior Society. Boulder, Colorado, USA.
Details from:
<http://animalbehaviorsociety.org>

AUG 4-8

Behaviour 2013. International Ethological
Conference Association for the study of
Animal Behaviour. Newcastle, UK.
Details from <http://iec2013.com>

AUG 4-9

ESA 2013, 98th Annual Meeting –
Sustainable Pathways Learning from
the Past and shaping the Future.
Minneapolis, USA.
Details from: <http://www.esa.org/meetings>

SEP 8-10

Plant Genome Evolution 2013. Amsterdam,
the Netherlands. Details from
<http://www.plantgenomeevolution.com>

SEP 13-15

2013 BCT National Bat Conference.
University of Warwick. Details from:
http://www.bats.org.uk/pages/national_bat_conference.html

SEP 24-29

37th Annual Meeting of the Waterbird
Society. Wilhelmshaven, Germany.
Details from: www.waterbirds.org

SEP 27 – 30

Annual conference of the International
Wader Study Group. Wilhelmshaven,
Germany <http://www.waderstudygroup.org>

OCT 21-25

Mathematics of Planet Earth 2013 –
Pan-Canadian Thematic Program –
Sustainability of Aquatic Ecosystem
Networks. New Brunswick, Canada.
Details from:
http://www.crm.umontreal.ca/act/theme/theme_2013_1_en/ecosystem_network13_e.php

NOV 10-13

61st Annual Meeting of the Entomological
Society of America. Austin, Texas, USA.
Further details from:
<http://www.entsoc.org/entomology2013>

NOV 12-15

The sixth International Conference on
Coexistence between Genetically Modified
(GM) and non-GM based Agricultural Supply
Chains. Lisbon, Portugal. Details from:
<http://gmcc13.org/index.php>

DEC 1-5

8th International Conference on
Coelenterate Biology (ICCB). Eilat, Israel.
Details from: <http://www.iccb2013.com>

2014

JUL 13-17

BIOGEOMON 2014. 8th International
Symposium on Ecosystem Behaviour.
Bayreuth, Germany. Website:
<http://www.bayceer.uni-bayreuth.de/biogeomon2014>

JUL 13-18

The 27th Congress for
the International Union for
the Study of Social Insects.
Cairns, Australia. Website:
<http://www.iussi2014.com>

TRAINING WORKSHOPS

2013

APR 29 – 10 MAY

Computational Molecular Evolution.
Cambridge, England. Details from:
<http://www.wellcome.ac.uk/Education-resources/Courses-and-conferences/Advanced-Courses-and-Scientific-Conferences>

JUL 8 – 16 AUG

Oxford Summer School in Computational
Biology. Oxford, UK. Details from:
http://www.stats.ox.ac.uk/research/genome/summer_school

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

CONTACT DETAILS

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Education, Training and Careers: Lesley Batty, School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham B15 2TT (l.c.batty@bham.ac.uk)

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Editorial office: Journal of Ecology, British Ecological Society, Charles Darwin House, 12 Roger Street, London WC1N 2JU.

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Editorial office: Journal of Animal Ecology, British Ecological Society, Charles Darwin House, 12 Roger Street, London WC1N 2JU.

Email: managingeditor@journalofanimalecology.org

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Editorial office: Journal of Applied Ecology, British Ecological Society, Charles Darwin House, 12 Roger Street, London WC1N 2JU.

Email: managingeditor@journalofappliedecology.org

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Editorial office: Functional Ecology, British Ecological Society, Charles Darwin House, 12 Roger Street, London WC1N 2JU.

Email: managingeditor@functionalecology.org

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Edited by Rob Freckleton (Executive Editor) and Bob O'Hara with Graziella Iossa (Journal Coordinator).

Editorial office: Methods in Ecology and Evolution, British Ecological Society, Charles Darwin House, 12 Roger Street, London WC1N 2JU.

Email: coordinator@methodsinecologyandevolution.org

Biological Flora:

Anthony Davy, University of East Anglia, Norwich (a.davy@uea.ac.uk).

The Bulletin:

Edited by Alan Crowden

Editorial Office: 48 Thornton Close, Giron, Cambridge CB3 0NG

Email: Bulletin@BritishEcologicalSociety.org

Book Reviews Editor: Peter Thomas

Email: p.a.thomas@biol.keele.ac.uk

SECRETARIES OF SPECIAL INTEREST GROUPS:

Agricultural Ecology: Barbara Smith, Game and Wildlife Conservancy Trust, Burgate Manor, Fordingbridge, Hampshire SP6 1EF (agricultural@BritishEcologicalSociety.org).

Computational Ecology: Matthew Smith, Microsoft Research Centre, Roger Needham Building, 7 J J Thompson Ave, Cambridge CB3 0FB (mattsmi@microsoft.com).

Conservation Ecology: Tim Graham, The Barn, Berkeley Drive, Bamber Bridge, Preston, Lancashire PR5 6BY (tgraham@lancswt.org.uk).

Ecological Genetics: Paul Ashton, Department of Natural, Geographical and Applied Sciences, Edge Hill University, St Helens Road, Ormskirk, Lancashire L39 4QP (ashtonp@edgehill.ac.uk).

Forest Ecology: Markus Eichhorn, Room B117 School of Biology, University Park, Nottingham NG7 2RD (markus.eichhorn@nottingham.ac.uk).

Invasive Species: Helen Bayliss, Centre for Environmental Policy, Imperial College, London (invasive@BritishEcologicalSociety.org).

Macroecology: Nick Isaac, Centre for Ecology and Hydrology, Maclean Building, Benson Lane, Crowmarsh Gifford, Wallingford, Oxfordshire OX10 8BB (besmacroecol@me.com).

Parasite and Pathogen Ecology and Evolution: Jo Lello, Cardiff School of Biosciences, Biomedical Sciences Building, Museum Avenue, Cardiff CF10 3AX (Lelloj@cardiff.ac.uk).

Peatland Research: Ian Rotherham, Sheffield Hallam University, Faculty of Development and Society, City Campus, Sheffield S1 1WB (peatlands@BritishEcologicalSociety.org).

Plant Environmental Physiology: Matt Davey, Department of Plant Sciences, University of Cambridge, Downing Street, Cambridge CB2 3EA (Matt.Davey@plantsci.cam.ac.uk).

Plants, Soils, Ecosystems: Franciska de Vries, Michael Smith Building, Oxford Road, Manchester M13 9PT (franciska.devries@manchester.ac.uk).

Tropical Ecology: Simon Queenborough, Department of Evolution, Ecology & Organismal Biology, the Ohio State University, 318 W12th Ave, Columbus, Ohio 43210, USA (tropical@BritishEcologicalSociety.org).

ADMINISTRATIVE OFFICE:

The British Ecological Society, Charles Darwin House, 12 Roger Street, London WC1N 2JU. Tel: 0207 685 2500. Fax: 0207 685 2501.

General email: Info@BritishEcologicalSociety.org
www.BritishEcologicalSociety.org

BES STAFF:

Executive Director: Hazel Norman
Email: Hazel@BritishEcologicalSociety.org

Membership Officer: Bill Bewes
Email: Membership@BritishEcologicalSociety.org

Communications Manager: Richard English
Email: Richard@BritishEcologicalSociety.org

Education Manager: Karen Devine
Email: Karen@BritishEcologicalSociety.org

Policy Manager Ceri Margerison
Email: Ceri@BritishEcologicalSociety.org

Grants and Conferences Administrator: Olivia Hunter
Info@BritishEcologicalSociety.org

Project Officer: Heather Mewton
Email: Heather@BritishEcologicalSociety.org

Head of Publications: Catherine Hill
Email: Catherine@BritishEcologicalSociety.org

Managing Editor, Journal of Ecology and Journal of Applied Ecology: Andrea Baier
Email: Andrea@BritishEcologicalSociety.org

Managing Editor, Journal of Animal Ecology and Functional Ecology: Liz Baker
Email: Liz@BritishEcologicalSociety.org

Assistant Editor, Journal of Animal Ecology: Peter Livermore
Email: Peter@BritishEcologicalSociety.org

Assistant Editor, Journal of Applied Ecology: Erika Newton
Email: Erika@BritishEcologicalSociety.org

Assistant Editor, Functional Ecology: Jennifer Meyer
Email: Jennifer@BritishEcologicalSociety.org

Assistant Editor, Methods in Ecology and Evolution: Samantha Ponton
Email: Samantha@BritishEcologicalSociety.org

Assistant Editor, Journal of Ecology: Lauren Sandhu
Email: Lauren@BritishEcologicalSociety.org

Festival of Ecology Manager: Julie Hodgkinson
Email: Julie@BritishEcologicalSociety.org

Festival of Ecology Assistant: Amy Everard
Amy@BritishEcologicalSociety.org

Press Contact: Becky Allen
Tel: 01223 570016
Email: Press@BritishEcologicalSociety.org

Looking BACK

Photo: Edith Clements

*Mr and Mrs Drude and Mrs Clements,
International Phytogeographical
Excursion 1911*



The International Phytogeographic Excursions was a series of international meetings in plant geography that significantly contributed to exchange of scientific ideas across national and linguistic barriers and also to the rise of Anglo-American plant ecology. The initiative was taken by the British botanist Arthur Tansley (integral to the founding of the British Ecological Society) at the International Geographic Congress in Geneva in 1908. Tansley and another early key figure, Henry C. Cowles, were both much-inspired by the new 'ecological plant geography' introduced by Eugenius Warming and its quest for answering why-questions about plant distribution, as opposed to the traditional, merely descriptive 'floristic plant geography'.



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